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Pre-Summit Event
of the AI Impact
Summit 2026

SOUVENIR

AI in Mobility

For Safer, Sustainable and Connected Roads



6-7
November 2025



IIT Hyderabad
Telangana, India

In Collaboration with

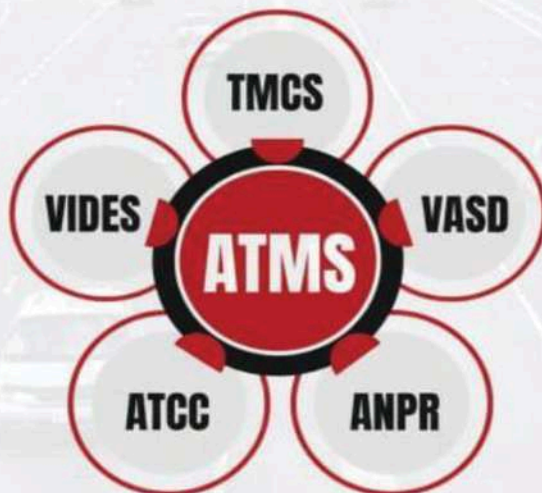
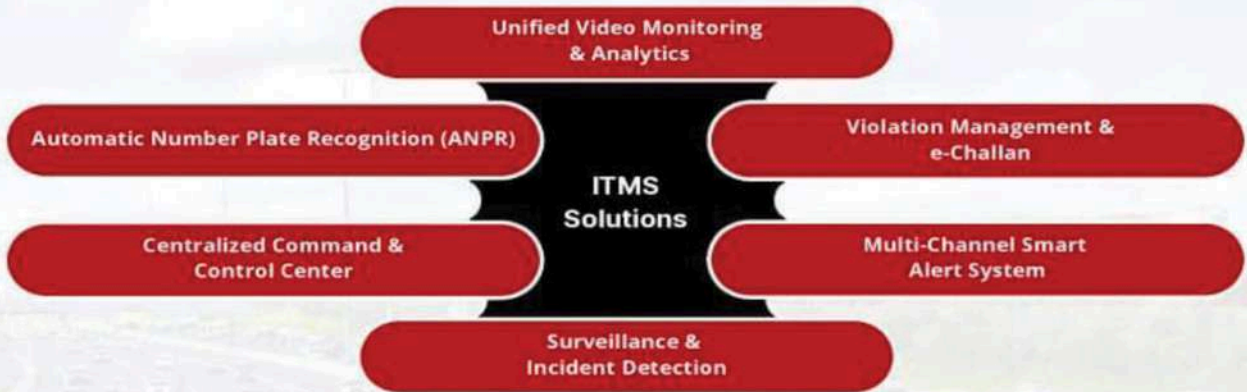




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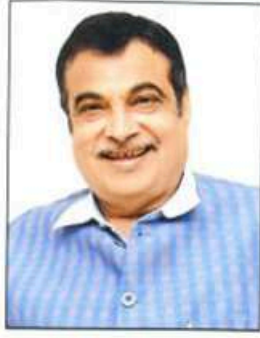
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नितिन गडकरी
NITIN GADKARI



मंत्री
सड़क 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)



Shri Giridhar Aramane

IAS (Retd.)

It is a privilege to extend my warm greetings to the organisers, speakers, and participants of the **ITS India Congress 2025**. This year's theme — **"AI in Mobility: For Safer, Sustainable, and Connected Roads"** — captures a defining moment in India's transportation evolution. As our nation advances toward the vision of **"Viksit Bharat"**, the convergence of **artificial intelligence, intelligent infrastructure, and digital systems** will shape a future that is **safe, efficient, inclusive, and sustainable for all citizens**.

India stands at a pivotal juncture in its mobility transformation. Rapid urbanisation, the expansion of logistics corridors, and the growing need for seamless, secure, and sustainable transport demand **data-driven and AI-enabled solutions**. Intelligent systems now offer unprecedented capabilities — enabling **predictive traffic management, enhanced road safety analytics, real-time multimodal integration, smarter enforcement, and greener mobility ecosystems**.

A critical pillar of this transformation is **Electronic Enforcement**, which has emerged as a cornerstone for safe and disciplined road usage. Guided by the **Supreme Court Committee on Road Safety (SCCoRS)** and the **Ministry of Road Transport & Highways (MoRTH)**, the recent **Electronic Enforcement Policy and SOP (2025)** mark a paradigm shift in how compliance and accountability are ensured on Indian roads. By integrating automated detection systems, AI-enabled violation analytics, and data interoperability with national platforms such as **Vahan, Sarathi, and e-Challan**, electronic enforcement promotes transparency, consistency, and deterrence—helping build safer roads and restoring citizen confidence in law enforcement.

As we move forward, the creation of a truly **intelligent transport infrastructure**—integrated with other national systems such as **Smart Cities, logistics networks, vehicle telematics, and emergency response platforms**—will be central to building a connected and resilient India. This transformation requires **deep collaboration**: between the **Central and State Governments** to harmonize policy and implementation, and between **industry and government** to leverage the collective expertise of the **automotive, telecom, digital infrastructure, logistics, and energy sectors**.

Equally important are **robust policy frameworks, unified standards, interoperable data platforms, and ethical AI deployment**. These, coupled with **capacity building and inclusive access**, will ensure that technology benefits every region—from metropolitan centres to rural India—with equal effectiveness.

Platforms such as the **ITS India Congress** play a pivotal role in uniting **government, industry, academia, and innovators**, fostering dialogue, partnerships, and actionable outcomes. I am confident that the deliberations at this Congress will chart a bold and coordinated roadmap for **AI-driven intelligent mobility and electronic enforcement, aligning with India's vision of safe, smart, and sustainable transport for all**.

I extend my best wishes for the success of the Congress and for its contribution to building a **smarter, safer, and connected India**.





Akhilesh Srivastava

President, ITS India Forum & IRF India Chapter

It gives me immense pleasure to welcome you to the 1st ITS India Congress 2025, being held on 6–7 November at IIT Hyderabad. Supported by the Ministry of Road Transport & Highways (MoRTH) and the Ministry of Electronics and Information Technology (MeitY), this first-of-its-kind event brings together government, industry, academia, and multilateral organisations to co-create India's roadmap toward a safe, sustainable, and AI-driven mobility ecosystem. The Congress has also been recognised as the Pre-Summit of the AI India Impact Summit 2026, underscoring its national and global significance.

The two-day Congress will feature six Technical Sessions, two Plenary Sessions, and a major ITS Exhibition, showcasing next-generation innovations in connected, automated, and sustainable mobility. A special plenary session, chaired by Hon'ble Justice Abhay Manohar Sapre and Shri Sanjay Bandyopadhyay, Secretary, Supreme Court Committee on Road Safety, will deliberate on the latest SOP on Electronic Enforcement—a landmark policy framework integrating AI, IoT, and analytics for data-driven enforcement and Vision Zero implementation.

Key highlights include the release of two national reports — the “ITS Roadmap for India” and the “AI in Mobility Roadmap” — prepared jointly by IITs, industry experts, and policy leaders, alongside six AI in Mobility Study Reports that chart India’s digital transformation in transportation. The Congress will conclude with the ITS India Industry Excellence Awards, honouring organisations pioneering intelligent and sustainable transport solutions.

As India advances toward Viksit Bharat 2047, intelligent transportation is emerging as the backbone of our nation’s digital transformation. The ITS India Congress 2025 marks the beginning of a new era — where technology, governance, and citizens come together to shape a predictive, proactive, and people-centric mobility ecosystem. Together, we are laying the foundation for Road Safety 2.0 and positioning India as a global leader in Intelligent Transportation Systems.





On behalf of ITS America, I extend my heartfelt congratulations to the ITS India Forum on hosting the First ITS India Congress 2025, a landmark event that signifies a defining moment in the modernization of transportation systems across the globe.

With the theme “AI in Mobility: For Safer, Sustainable, and Connected Roads,” this forum is poised to be an impactful and timely gathering to align policy and industry interests at the convergence of artificial intelligence and transportation technology.

As India is home to the world’s second-largest road network supported by one of the most extensive digital infrastructure systems, this inaugural Congress promises invaluable insight for years to come.

The conversations, demonstrations, and connections made at ITS Congresses is what drives progress and partnerships in intelligent transportation. We commend ITS India Forum for bringing together government, industry, and academia to pave the way for ITS across the nation and enhance safety and innovation in the region as a whole.

We wish the Congress success and look forward to continuing collaborative efforts to advance safer, smarter, and more connected transportation worldwide.

Ms. Laura D. Chace

President & CEO

Intelligent Transportation Society of America (ITS America)



On behalf of ITS Asia Pacific and ITS Japan, I extend my heartfelt congratulations to ITS India Forum on hosting the First ITS India Congress 2025 — a landmark event that marks a defining moment in India’s mobility evolution.

With the theme “AI in Mobility: For Safer, Sustainable, and Connected Roads,” this Congress arrives at a pivotal time when India — home to the world’s second-largest road network and the third-largest vehicle market, supported by one of the most extensive and affordable digital infrastructures — is poised to lead the global ITS transformation.

Its recognition as the Pre-Summit of the Government of India’s AI Impact Summit 2026 underscores its strategic significance in uniting policy, technology, and innovation to shape the future of intelligent, inclusive, and sustainable mobility.

We commend ITS India Forum for bringing together government, industry, and academia to define India’s ITS roadmap and wish the Congress grand success. We look forward to continued collaboration to advance safer, smarter, and more connected transportation worldwide.

Akio Yamamoto

*Secretary General of ITS Asia Pacific
and President of ITS Japan (Intelligent Transportation Systems of Japan)*



Following the signing of the Memorandum of Understanding between TTS Italia and ITS India in October 2024, we are truly happy to have launched a close and fruitful collaboration between the two Associations and their respective members!

India's transportation sector has grown rapidly over the past two decades, with technology making transport a key driver of economic growth.

TTS Italia therefore believes international cooperation is essential to ensure the growth of the ITS market and ensure the opening of mutual growth opportunities, and that the role of ITS India, the premier think tank advancing Intelligent Transport Systems (ITS) for safer, sustainable, and connected mobility in the country, is crucial!

We recently saw concrete proof of this with the organization of a bilateral Italy-India workshop in New Delhi, which allowed the exchange of knowledge and best practices between the members of TTS Italia and those of ITS India, giving rise to new synergies and collaborations!

Leonardo Domanico

Ingegnere Trasporti

TTS Italia



It is my great honor to extend my warmest congratulations and best wishes to the organisers of the ITS India Congress 2025. This important gathering embodies the shared vision of our region—to harness innovation, collaboration, and technology for smarter, safer, and more sustainable mobility.

As India continues to advance its Intelligent Transport Systems (ITS) ecosystem, its progress serves as an inspiration to the entire Asia-Pacific community. The integration of Artificial Intelligence, data-driven mobility solutions, and human-centred design demonstrates how innovation can transform not only transport efficiency, but also safety, inclusivity, and environmental responsibility.

Through platforms such as this Congress, we reaffirm our collective commitment to building an interconnected mobility future—one that bridges nations, accelerates digital transformation, and uplifts the quality of life for our people. ITS Thailand is proud to stand alongside ITS India and our regional partners under the ITS Asia-Pacific umbrella, fostering cross-border collaboration, shared research, and sustainable innovation.

May the discussions and outcomes of ITS India Congress 2025 continue to inspire new pathways toward intelligent and resilient transport systems for all.

With sincere respect and warm regards,

Lt. Col. Dr. Tongkarn Kaewchalermtong

President, ITS Thailand



On behalf of ITS Singapore, I extend my heartfelt congratulations to ITS India Forum on hosting the First ITS India Congress 2025 — a landmark event that marks a defining moment in India’s mobility evolution.

With the theme “AI in Mobility: For Safer, Sustainable, and Connected Roads,” this Congress arrives at a pivotal time when India — home to the world’s second-largest road network and the third-largest vehicle market, supported by one of the most extensive and affordable digital infrastructures — is poised to lead the global ITS transformation.

Its recognition as the Pre-Summit of the Government of India’s AI Impact Summit 2026 underscores its strategic significance in uniting policy, technology, and innovation to shape the future of intelligent, inclusive, and sustainable mobility.

We commend ITS India Forum for bringing together government, industry, and academia to define India’s ITS roadmap and wish the Congress grand success. We look forward to continuing collaboration to advance safer, smarter, and more connected transportation worldwide.

Howie Sim

President, ITS Singapore

Intelligent Transport Systems New Zealand Inc (ITSNZ)

Antony Dixon

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www.ITSNZ.org



31 October 2025

Message from Mr. Antony Dixon,

Chair, Intelligent Transportation Systems New Zealand (ITS NZ)

On behalf of ITS NZ, I wish to congratulate ITS India on hosting the First ITS India Congress 2025. I also wish to acknowledge ITS India as the newest member of ITS Asia Pacific.

We are disappointed that we are unable to attend the Congress and see first-hand the contribution that India is making to policy, technology, and innovation to shape the future of intelligent, inclusive, and sustainable mobility.

Understanding the role that AI can play in mobility, while also ensuring security and privacy, is essential to delivering improved road safety outcomes, network efficiencies, emissions reduction and inclusive access across the Asia-Pacific region, and globally.

We look forward to continued collaboration to advance safer, smarter, and more connected transportation worldwide and identifying opportunities for ITS India and ITS NZ to collaborate and partner in future events and in the lead up to, and during, the ITS Asia Pacific Forum that is being held in Auckland in May 5th-7th, 2027.

We commend ITS India Forum for bringing together government, industry, and academia to define India's ITS roadmap and wish the Congress every success.

Yours sincerely,

Antony Dixon

Antony Dixon

Chair

**Intelligent Transportation Systems New
Zealand Inc (ITSNZ)**

Intelligent Transport Systems New Zealand Inc.

Email: info@itsnz.org

Web: www.ITSNZ.org

MESSAGE

I am glad to learn about the **ITS India Congress 2025**, jointly organised by **ITS India Forum, OMI Foundation, and IIT Hyderabad** on 6–7 November in New Delhi. As India moves towards **Viksit Bharat@2047**, the convergence of sustainability and technology is transforming mobility through **digitalisation, electrification, and clean energy infrastructure**, building a transport ecosystem that is **efficient, inclusive, and globally competitive**.

Hon'ble Prime Minister Shri Narendra Modi has envisaged a **National Ambition** to establish a central **Transport Planning Authority** through his office, aimed at aligning infrastructure projects, reducing inefficiencies, and transforming the sector through coordinated, technology-driven oversight. This initiative, modeled after successful international bodies, will streamline development across **aviation, shipping, rail, and urban mobility**, supporting the nation's goal to become a **developed economy** by 2047.

ITS India Congress 2025 aligns seamlessly with the vision of a coordinated, AI-enabled, and sustainable transport sector. By convening innovators, policymakers, and industry leaders under the theme "**AI in Mobility: For Safer, Sustainable, and Connected Roads**," the Congress supports the government's drive for efficiency and high-impact national missions such as **PM Gati Shakti**, National Green Hydrogen Mission, and **Viksit Bharat@2047**.

On behalf of **Ease of Doing Business**, I extend my sincere congratulations to ITS India Forum for fostering collaboration among government, industry, and academia, paving the way for a comprehensive **ITS roadmap** that aligns with India's broader vision of efficient, safe, and climate-resilient **transport infrastructure**.



(Abhijeet Sinha)



I am honoured that OMI Foundation, in collaboration with the ITS India Forum and IIT Hyderabad, is convening the inaugural ITS India Congress 2025 on Artificial Intelligence in Mobility. This Congress has also been accorded the distinction of being the official pre-summit event of the India AI Impact Summit 2026, under the IndiaAI Mission, of the Ministry of Electronics and Information Technology. In this spirit, the Congress is envisioned as a collaborative platform to explore how AI can reshape India's mobility systems to be safer, smarter, and more inclusive.

At OMI Foundation, our mission has always been to advance responsible adoption of frontier technologies. Artificial Intelligence offers transformative potential to reimagine road safety, logistics competitiveness, public transport efficiency, and inclusive access. Yet, harnessing this potential requires dialogue that is deeply collaborative, bringing together government, industry, academia, and civil society to chart pathways that are not only technologically advanced but also equitable, sustainable, and citizen-centric.

I acknowledge with gratitude the role of ITS India Forum, IIT Hyderabad and our partners for shaping this platform that unites diverse stakeholders around the common vision. The significance of this gathering lies in its ability to move beyond discussion and set a direction for India's mobility transformation.

I look forward to the discussions at the Congress and to the partnerships it will inspire. I wish the event resounding success as we take collective steps toward safer and smarter mobility for the nation.

Ms. Aishwarya Raman

Executive Director, OMI Foundation (Mobile: +91 8297994567)

Crashfree India

Reimagining mobility where safety isn't a feature, it's the foundation



Crashfree India is a **youth-led technology and research institution** on a mission to achieve **zero road crash fatalities by 2040**. Backed by the co-founders of the **Indian Road Safety Council** and **CARS24**, CFI harnesses the power of **data, technology, and strategic partnerships** to drive measurable change on India's roads. Our work spans the full spectrum of road safety, from **crash prevention and behavioral change** to **post-crash care**.

90+

Active members across India

50+

Expert across infra, tech, policy

18+

Cities with ongoing interventions

15+

Partners (Govt., Corporate, NGO)

1M+

People engaged through campaigns

Major Initiatives



Project Rakshak: Enabling civil undergrads to solve localized road infra. issues (**Live at 30+ locations across India**)



Post Emergency Care: Legal Helpdesk and Portal, **Crash Claim Compensation Study, Primer on pre-hospital care in India**



Tech Enablement: App for Community action for road safety, **Centralized data hub for road safety, AI chatbot for crash victims**



Awareness and Accountability: **AI Billboard with Bangalore Traffic Police**, Campaigns for Good Samaritan, Safety standard



Currently, Crashfree India is advancing two urgent, high-impact missions - **Gig Rider Safety and Crash Claim Compensation**. With India's gig workforce projected to cross 23 million by 2030, we're partnering with governments and platforms to curb road safety risks for and by riders through data-led interventions. In parallel, we're improving crash compensation systems to ensure **swift, fair settlements via greater awareness and streamlined e-DAR and cashless claim processes**

Join us in turning these priorities into real, measurable impact:
aastha.shreeharsh@crashfreeindia.org





Prof. P.K. Sikdar

Advisor

International Road Federation – India Chapter

Intelligent Transport System for Transforming Modern Mobility

By the turn of the century it was clear that data and intelligent handling of transport can bring in huge advantage. It is Information and Communication Technology (ICT) applied to transport for safety and efficiency as well as more coordinated and smarter use of transport networks. Among the Asian countries, Japan and South Korea are quite advanced now in ITS deployments for their road network and traffic system.

The Roadmap and the Master Plan for ITS developments in India should aim for countrywide common ITS architecture, standards and specifications for ensuring interoperability, which will provide the win-win situation for associated industrial development and growth as well as excellence. The roadmap gives a clear overview of strategic tasks and milestones to define a long-term plan to achieve the goals, and ITS roadmap will have to provide the Strategy – Initiatives – Goals – Plans – Performance related chain actions required to achieve the objective development in ITS. Thus, the standards, regulatory frameworks, market opportunities, financing models, and cross-sectoral collaborations will be absolutely needed to scale the ITS solutions.

ITS does not mean only the cameras by which we can monitor the traffic/incidents/activities in an area and provide surveillance using computer.

There are a wide range of ITS applications, which can assist in every aspect of road transport and other sectors of transport seamlessly. I would like to talk only about the traffic management using ITS, which can change the perilous road safety scenario in India through a very direct and transparent system of operations. ITS was first mooted (or originated) with the objectives of road safety and later it has proliferated to every other requirements of traffic management. The transparent and indiscriminating unlimited capability of ITS is required to manage traffic in India, where the numbers are very high and the variety of users in traffic stream is extreme, which need a automated system of enforcement. While ADAS, CAS and many other technologies are also relevant in such cases, its affordability is a question, as these are available for private cost. The publicly funded common facilities like ATMS for the highways and similar system in urban areas can be the game-changer for road safety in India. Behavioural traits leading to violations and crashes are to be eliminated by 24x7 enforcement with real-time surveillance for incident detection of all such violations, like

- Over speeding
- Unsafe overtaking
- Overloading (of passenger and goods vehicles)
- Contraflow movements
- Pedestrian or vehicles not permitted on expressways
- Disabled vehicle (any unduly stopped/stationary vehicle)
- Animals on the road
- Illegal/wrong parking on road
- Dynamic speed reporting (feed-back sign)
- Compliance to seat-belt & helmet wearing
- Use of mobile phone while driving/riding

No doubt, to have this highly effective 100% enforcement system for complete change in safety scenario, there are associated other actions required to be taken for updating of the road users' contact database, which can be done very easily. The Road Authorities have been avoiding the implementation of such ATMS even for the expressways being developed in the country in view of their high cost. However, there are alternative implementation modes like 5-10 years of PPP mode with appropriate financial arrangements. The ultimate objective of all such ITS implementation is to relieve India from its dubious distinction of having the worst road safety record in the world.



AI-Driven Security, Safety, Trust, and Privacy for the Connected Vehicle Ecosystem

The rapid evolution of Intelligent Transportation Systems (ITS) and the emergence of Connected and Autonomous Vehicles (CAVs) are transforming modern mobility. These systems integrate vehicles, roadside infrastructure, communication networks, and cloud analytics into complex cyber-physical ecosystems. As connectivity expands, so do the risks - necessitating a shift from reactive to AI-driven proactive cybersecurity to ensure **Security, Safety, Trust, and Privacy (SSTP)** across the entire lifecycle of connected mobility. Artificial Intelligence (AI) serves as both an enabler and a challenge in this environment. On one hand, AI enhances defense capabilities through intelligent intrusion detection, anomaly monitoring, and predictive threat analytics. Machine learning models continuously assess vehicle telemetry, network traffic, and driver behavior to identify deviations that may signal cyberattacks or faults. In vehicular networks (V2V, V2I, V2X), AI-based systems can autonomously prioritize secure communication paths, isolate compromised nodes, and maintain operational safety even under attack conditions.

Conversely, AI introduces new vulnerabilities. Adversarial manipulation, model poisoning, and spoofing can mislead perception systems, disrupting navigation and control functions. Such threats expose ethical and safety challenges while raising concerns about privacy due to extensive data dependence.

To address these issues, an **AI-enabled SSTP Framework** for connected vehicles with the following four layers is explained:

- **Security Layer:** Protects vehicular and V2X communications using encryption, trusted hardware, and secure OTA updates.
- **Safety Layer:** Uses AI for situational awareness, anomaly detection, and predictive safety assurance.
- **Trust Layer:** Builds verifiable confidence through blockchain-based identities, zero-trust architectures, and integrity management.
- **Privacy Layer:** Embeds data protection through federated learning, differential privacy, and privacy-preserving sharing.

Together, these layers create an adaptive ecosystem that maintains performance, safety, and user confidence. These frameworks must ensure compliance with emerging regulations such as India's Digital Personal Data Protection (DPDP) Act, 2023.

In conclusion, AI will profoundly redefine cybersecurity in the connected vehicle ecosystem. The convergence of AI, cybersecurity, safety engineering, and privacy-preserving technologies will shape the success of next-generation ITS deployments.

Dr N. Sarat Chandra Babu

Former Executive Director, SETS, Chennai





INDIA CHAPTER



OUR MISSION

BETTER & SAFER ROADS: SAFER TRANSPORT & SAFER INDIA

We are India Chapter of International Road Federation, Geneva. Formally set up in 2011, IRF-IC undertakes activities to promote the cause of Road Safety in the country based on 5Es of safe road system.

Comprehensive Safe System Program to improve road safety through 5Es



E1 : Engineering of Roads and Vehicles



E2 : Education and Mass Awareness



E3 : Enforcement



E4 : Emergency Care



E5 : Evaluation

For more information :

Email : india@irf.org.in, Website : www.indiairf.com



CDAC role in nation building on ITS fronts

Centre for Development of Advanced Computing (C-DAC) is the premier R&D organization of the Ministry of Electronics and Information Technology (MeitY) for carrying out R&D in IT, Electronics and associated areas. The Ministry's foresight in fostering innovation and Research & Development in critical sectors like Transportation has equipped CDAC to contribute to Atmanirbhar Bharat by developing home grown solutions to reduce dependencies on imported technologies. Indigenous ITS technology development in Adaptive Traffic signalling, Transit signal Priority (TSP), Automated Enforcement & Prosecution System, Public Transit solutions, Parking Guidance systems, sensor hardware development for traffic analysis, Driver Assistance and Warning System and oneM2M based framework for IoT communication standards are some of the initiative that were undertaken by CDAC in collaboration with leading academic institutes like IITs & IISc. CDAC is part of the BIS, TSDSI & IRCstandardisation committees contributing towards National ITS Architecture and Standards Framework addressing interoperability, scalability, and data security. CDAC is also working on Co-operative ITS (C-ITS) in developing products & standards for V2X communications. CDAC's primarily role is to undertake R&D in niche areas, develop prototypes, carry out pilot deployments, capacity building & skill development, Transfer of Technology (TOT) and support for technology obsolescence. Adaptive Traffic Control System (CUTE, TraMM & CoSiCoSt), Transit Signal Priority (TSP) system for Emergency vehicles, WVIPs & Bus transit, Fleet Management System (Flexifleet) are some of the successfully implemented technologies in various Smart city initiatives.

CDAC envisions advancing India's ITS landscape through cutting-edge R&D and AI-powered innovations to create **safe, efficient, and sustainable mobility systems** for all. CDAC in its recent R&D initiative has focussed on the following domains:

● **AI-Driven Predictive Traffic Management:**

Enhance Adaptive Traffic Control Systems (ATCS) with advanced AI, rich data analytics, and Decision Support Systems to proactively manage congestion, reduce pollution, and make cities more liveable.

● Road Safety & Vision Zero:

Strengthen data-driven enforcement and safety analytics to support **MoRTH's Vision Zero** initiative — aiming for zero road fatalities through intelligent monitoring and response systems.

● Digital Infrastructure & AI Research Ecosystem:

Empower cities with **AI-ready datasets**, interoperable digital platforms, and open APIs to foster innovation and support India's **AI-in-ITS R&D ecosystem**.

● Sensor Integration & Multimodal Data Fusion:

Improve the accuracy and reliability of traffic intelligence by integrating heterogeneous sensors (camera, radar, LiDAR, IoT) and applying **multimodal fusion techniques**.

● Data-Driven Planning & Digital Twins:

Develop **Digital Twin platforms** with appropriate simulation models to support infrastructure planning, impact assessment, and evidence-based decision-making before implementation.

● Next-Gen Mobility Solutions:

Innovate in **Connected and Autonomous Vehicle (CAV) ecosystems**, **Mobility-as-a-Service (MaaS)**, **Mobility on Demand**, and **Demand-based Public Transit** for user-centric mobility.

● Inclusive and Equitable Mobility:

Strengthen **R&D in Rural and Highway ITS**, ensuring technology benefits extend beyond urban centers to promote **mobility equity across India**.

oneM2M standard framework

Strengthen and expand India's indigenous oneM2M framework as the national standard for IoT interoperability, enabling seamless communication across diverse domains such as smart mobility, smart cities, and others. This AI driven framework with data-centric architectures is aimed to intelligently process, share, and act upon sensor data from millions of connected devices in real time.

Satheesh G

*Scientist-G & Head, Intelligent
Transportation & Networking Group,
CDAC-Thiruvananthapuram*



Sparsh Torch Camera: Smart Surveillance in Your Hands

As India's infrastructure grows, the demand for agile and intelligent security solutions has never been higher. The **Torch Camera (SC-IT2450-HB-V2)** from **Sparsh CCTV** answers that call - an innovative, fully self-contained **4G/LTE-enabled** portable surveillance device, designed specifically for mobile patrolling and real-time facial recognition.

Equipped with a **1/2.8" progressive scan ultra-low illumination CMOS sensor and 2MP resolution (1920x1080)**, the Torch Camera delivers superior image quality even in low-light environments. It supports **day and night color view** powered by white LEDs, and comes with **WDR** and **3D digital noise reduction** for enhanced clarity. Designed for rugged field use, it can enroll and detect up to **3,000 faces**, sending an instant alert with a snapshot to the control room and vibrating in-hand to notify on-ground personnel.

Key Features

- Built-in face recognition algorithms
- 4G/LTE-enabled real-time streaming and alerts
- Micro SD card support (up to 512GB) for local storage
- H.265/H.264 video compression
- Day/night auto switch, corridor mode, and image mirroring
- Adjustable image settings (brightness, contrast, saturation)
- Durable, lightweight, weather-resistant housing
- Battery backup up to 8 hours

From **aviation** and **border security** to **transport hubs**, **construction sites**, **critical infrastructure**, and **disaster response**, the Torch Camera is built for areas where fixed systems fall short.

About Sparsh CCTV

Sparsh CCTV is a leading Indian manufacturer of advanced video surveillance solutions. Since 2002, Sparsh has championed the Make in India movement, offering high-resolution IP/Analog cameras, AI-driven systems, and mobile surveillance units with real-time analytics, facial recognition, and thermal detection.

Sparsh is among the few Indian brands with broad **STQC certification** and **OWASP V4.0 L2 cybersecurity compliance**, underscoring its commitment to quality and security. With a presence in **10+ countries** and a network of **2,000+ partners**, Sparsh provides scalable, intelligent solutions across industries.

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Senturan Karthikeyan

*Director – Innovations
Datacorp Traffic Private Limited*

From Close Calls to Proactive Safety: Computer Vision-Based Near-Miss Analytics

Traditional road safety approaches rely on collision data for risk assessment. However, near-miss incidents, where an accident is narrowly avoided, provide vital early warnings of systemic issues. Leveraging these events for predictive safety measures enables authorities to address hazards before they result in harm.

Near-miss events serve as leading indicators of potential road safety hazards, offering actionable data for preventive intervention. The use of computer vision-based techniques to detect, analyze, and mitigate near-miss incidents represents a shift from reactive to proactive safety management.

Computer Vision for Near-Miss Detection

Recent advances in computer vision and machine learning allow for scalable, automated analysis of traffic camera footage to objectively identify near-miss events. Unlike human reporting, computer vision systems ensure comprehensive and consistent incident detection.

● 24/7 Continuous Monitoring:

Automated systems monitor roadways round the clock, capturing incidents that may go unreported by witnesses.

● Privacy and Anonymization:

Data processing techniques prioritize behavioral insights and environmental factors, ensuring compliance with privacy considerations.

● Real-Time Alerts:

For severe near-miss events, immediate notifications facilitate rapid intervention by safety teams, especially at high-risk industrial or urban crossings.



Descriptive Analytics

● Frequency and Rate:

Quantifies events per unit period (e.g., monthly, per 10,000 vehicles), providing a baseline for intervention prioritization.

● Spatial Analytics:

Identifies high-risk "hotspots" to target engineering or enforcement resources.

● Typology:

Classifies incidents by type (e.g., speeding, improper maneuvers, mechanical faults) and involved parties (e.g., vehicle-to-vehicle, vehicle-to-pedestrian).

● Temporal Patterns:

Assesses peak times for hazardous occurrences, informing scheduling of preventive measures.



Advanced Conflict Analysis

● Time-to-Collision (TTC):

Measures the remaining time to potential collision at constant speeds; lower values imply more critical risks.

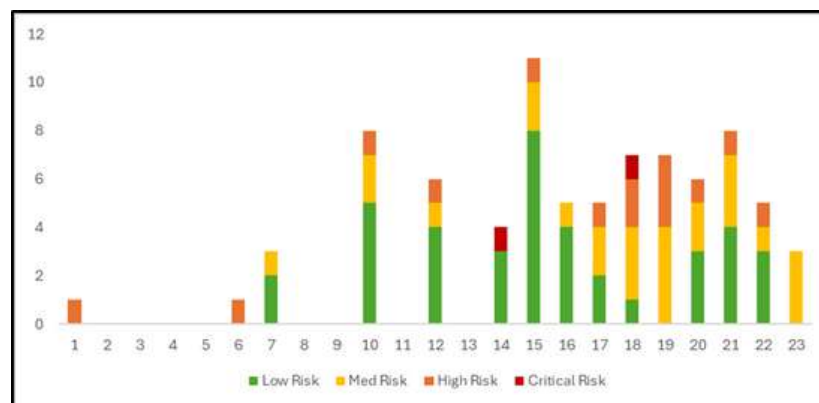
● Post-Encroachment Time (PET):

Calculates the gap between road users at conflict points, with smaller values indicating higher severity.

● Trajectory and Speed Overlap:

Analytics can identify risky behaviors like sudden braking, swerving, or illegal movements by analyzing vehicle speed and path.

Diagnostic and Predictive Analytics



● Root Cause Analysis (RCA):

Probes systemic, human, or environmental factors, identifying actionable root causes.

● Correlation Analysis:

Examines relationships between near-miss frequency and contextual factors like weather, signage, or road conditions.

● Predictive Modeling:

Utilizes historical trends to forecast risk, allowing proactive deployment of safety interventions.

The integration of computer vision in near-miss detection offers objectivity and scalability, bridging the gap between traditional incident-based reporting and data-driven safety management. Interdisciplinary collaboration between ITS Enablers, Traffic Engineers, and policymakers is essential for maximizing the impact of these innovations.

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Anil Chikkara

Ex Transport Commissioner, Delhi

New age Vehicle Emission enforcement using thermal image IR ANPR Camera (IRCAM) system

IIRCAM a new dimension in Vehicle emission checking systems using a combination of **Automatic Number-Plate Recognition (ANPR) cameras, physical/laser-based emission sensors, and IR thermal cameras** for comprehensive monitoring. Thermal cameras do not directly measure the chemical composition of the exhaust plume, but are used for related purposes like detecting the thermal signature of the exhaust system or engine to measure **"hot body"** thus higher emitting due to VOC or SOOT) vehicles.

System Components and Function

The system integrates several technologies at a roadside location:

Thermal IR Camera: The thermal camera is used to capture the heat signatures of the vehicle's components, particularly the exhaust system and engine area. This helps determine if the vehicle is fully warmed up (**"hot body"**) and release un burnt soot and VOC at tail pipe exhaust in case of Diesel / Petrol / CNG fuelled engine. Every mass of exhaust which ranges between a temperature 200 degree to 900 degree or more emit various color pattern infra red rays which is directly proportional to emission concentration of the vehicle. This pattern creates a thermal image to the camera variable with respect to hotness pattern. The concentration of such hot body is real smoke density.

This phenomena differentiate between polluted vehicle or non polluted vehicle. This instant information will alert the enforcement agencies so the later smoke meter or gas analyzer can measure the actual values of exhaust pollutants.

The image in case of cold exhaust will also indicate the high concentration of **cold body** where after treatment of tail pipe emission not treated and unbrunt.

ANPR Camera: A high-resolution camera with IR capabilities captures an image of the vehicle's license plate as it passes. This image is processed using Optical Character Recognition (OCR) software to identify the plate number. The ANPR camera typically uses built-in infrared illumination for reliable performance in all lighting and weather conditions.

Data Integration and Analysis

1. **Data Capture:** As a vehicle drives past the monitoring station, all sensors are triggered simultaneously. The ANPR camera captures the plate number, the emission sensors analyze the exhaust plume, and the thermal camera records heat signatures.
2. **Data Linkage:** The collected data (emission readings, plate number, speed, temperature data) are linked together into a single record for that specific vehicle.
3. **Database Matching:** The ANPR data (license plate number) is cross-referenced with a central vehicle registration database to retrieve details like vehicle make, model, fuel type, engine size, and official emission standard (e.g., Euro class).
4. **Anomaly Detection:** The real-world emission data is compared against expected values for that specific type of vehicle and operating condition. Vehicles with abnormally high emissions for their type and condition are flagged as potential "high emitters," which may have a fault that needs repair. Also prosecution based upon these indicators may also get in sequence where the vehicle travel further.
5. **Futuristic ITS incorporation:** In case an elaborative studies are carried out and a substantial data is generated the AI may report the amount of emission based upon the data of smoke meters or gas analyzers. The OBD sensors tagged with GPS will be able share the emission , location , speed in real time which will make the self governed regime.

Purpose

This combined system provides a non-intrusive, real-world method for monitoring large fleets of vehicles, identifying specific high-polluters, and enforcing low-emission zones (LEZs) without stopping traffic. It allows authorities to target vehicles that genuinely need inspection or repair, rather than relying solely on periodic mandatory inspections that may not reflect real-world performance.

New-Age Vehicle Emission Enforcement using Thermal IR ANPR (IRCAM) System

IRCAM introduces an advanced emission enforcement approach integrating Infrared (IR) thermal cameras, Automatic Number Plate Recognition (ANPR), and emission sensors for real-time monitoring. While thermal cameras don't measure exhaust composition directly, they detect heat patterns around the exhaust and engine to identify high-emitting ("hot body") vehicles producing excess VOCs or soot.

System Components

- **Thermal IR Camera:** Captures heat signatures of the exhaust and engine. The thermal image pattern, varying between 200°C–900°C, indicates emission levels, helping differentiate clean and polluting vehicles. Abnormal heat density or cold exhaust zones signal inefficient combustion or emission treatment failure.
- **ANPR Camera:** High-resolution IR-enabled camera recognizes vehicle license plates using OCR for identification under all lighting and weather conditions.

Data Integration and Analysis

1. **Data Capture:** Sensors record exhaust, plate number, and temperature as the vehicle passes.
2. **Data Linkage:** All sensor readings are combined into one vehicle record.
3. **Database Matching:** ANPR data links to the registration database to retrieve vehicle and emission standard details.
4. **Anomaly Detection:** Actual emissions are compared with standard values to flag potential high emitters.
5. **ITS Integration:** With further AI analysis and OBD–GPS data fusion, real-time emission, speed, and location tracking can support automated enforcement.

Purpose

The IRCAM system offers continuous, contactless monitoring of vehicle emissions, identifying high polluters and supporting targeted enforcement for cleaner, smarter, and more compliant urban mobility.





AI in Mobility

Advancing Intelligent Transport Systems for Connected E-Highways in India

A modern city pulses with traffic flow, efficiency in transit, and the safekeeping of citizens.

The increases in the density of metropolitan centers and complexities in transport networks testify to a growing challenge: how do we identify, manage, and harness the possibilities of intelligent ecosystems that are better, safer, and sustainable?

The answer echoes in all the hollows of the Intelligent Transport (ITS) this year: it's called Artificial Intelligence.

At Norden, we aren't just watching these changes; we're working rigorously to shape them. The road to real intelligent mobility actually starts with vision: not only human vision, but a constant, analytical, and scalable digital vision. It is in this spirit that we announce our futuristic innovation: Lenexa, the AI-Powered Surveillance Software, built towards being the brain system for the future of transport.

The Data Flood: See the Larger Picture

Today's transport networks are literally overwhelmed with data, monitored virtually by thousands of cameras covering motorways, intersections, bus lanes, and railway platforms.

For many years, this extensive visual resource has been mostly reactive, deployed primarily for forensic analysis after an incident. Its potential as proactive intelligence is trapped under petabytes of unanalyzed video footage.

This is the critical gap that Lenexa is meant to fill. Our core philosophy is to empower cities and transport operators to See the Bigger Picture.

Lenexa isn't just a video repository; it is an intelligent video intelligence platform, one which converts raw data into actionable security and operational insights.

The Pillars of Lenexa: Set to Power the Future of Mobility

Built from the ground up for the requirements of modern metropolitan infrastructure, Lenexa is based on three pillars:

1 - Scalability for Boundless Deployment

Lenexa can handle unlimited cameras, servers, and users to allow easy management from a single unified platform.

It can scale from a single bus depot to national highways — ensuring efficiency at any level.

2 - Advanced AI Analytics: The Brain of the Operation

Lenexa's machine learning and computer vision capabilities mean it can:

- Detect near-miss incidents at intersections
- Identify and mitigate traffic jams in real time
- Monitor public transport occupancy for better scheduling
- Trigger alerts on unauthorized or stopped vehicles in restricted zones

This transforms transport management from reactive to predictive and proactive.

3 - Unyielding Software Security and Privacy

All video data is encrypted and accessible only to authorized users. Configurable multi-level permissions protect data integrity and citizen privacy.

Unique Features for a Sustainable Transport Ecosystem

- 1. Optimized Resource Usage-** Automation frees human operators for critical tasks.
- 2. Computing Power by AI-** High performance without hardware overload.
- 3. Easy, Learnable Interface-** Simple design ensures minimal training time.
- 4. Reduced Total Cost of Ownership-** Smart data handling minimizes storage costs.
- 5. Integration with Third-Party Systems-** Works seamlessly with existing traffic control and IoT systems.

A Collaborative Journey Ahead

The mission of smarter, safer, and more sustainable transport is a collective one — requiring policy, infrastructure, and cutting-edge technology.

At Norden, we believe intelligent vision is the foundation of this new era.

Lenexa represents our commitment: a powerful, scalable, and secure platform built for future cities.

We invite you to join us — to see the bigger picture and co-create the intelligent mobility ecosystems our world needs.

Together, let's leverage AI to build a truly intelligent, safe, and resilient mobility future for all.





Crashfree India

Towards a Crashfree India: Smart Solutions for Safer Roads

With only 1% of the world's vehicles yet 11% of global road crash fatalities, India faces a road safety crisis of epidemic proportions. Conceived in response to this urgent challenge and guided by the belief that every crash is preventable, Crashfree India (CFI) is a youth-led technology and research institution committed to achieving zero road crash fatalities by 2040. Backed by the co-founders of the Indian Road Safety Council and Cars24, CFI currently has 90+ active members and 50+ experts across 18+ cities, working to translate rigorous research and policy insights into actionable, scalable solutions to make India's roads safer for all.

Envisioned as the start of a nationwide movement for policy transformation, CFI launched the NextMile: Road Safety Policy Ideathon in June. The initiative engaged youth in co-creating solutions to a public health challenge that disproportionately affects them, connecting participants with expert mentors across urban planning, engineering, law, policy, and governance. From the 250+ concept notes received to the top ten finalists' proposals, technology featured heavily in the most effective solutions. Far from coincidental, this trend illustrates why technology lies at the heart of CFI's interventions.

Grounded in this insight, CFI is developing two flagship technological interventions to start with. The first—a multilingual AI chatbot—bridges critical information and process gaps in crash compensation by translating government frameworks (Hit-and-Run Scheme 2022, Cashless Treatment Scheme 2025, e-DAR workflows) into clear, step-by-step guidance for victims, police, lawyers, and claims officers via WhatsApp and web widgets. The second—a Safety SDK for platforms—addresses the behavioural risks that cause several gig riders' crashes, such as fatigue and pressures to speed. Designed as a plug-and-play module, it integrates features like AI helmet selfies, fatigue detection, overspeed alerts, weather-based notifications, and SOS prompts. By standardizing safety tech across platforms, the SDK would enable measurable risk reduction for gig riders and protect all road users.

Prioritized for their feasibility and potential for immediate impact, these two interventions are just the starting point in CFI's broader efforts to harness technology for safer mobility. Together, these initiatives represent a new paradigm in India's road safety ecosystem—one where tech-enabled tools, research-backed solutions, and cross-sector collaboration converge to realize the vision of a Crashfree India.

Aastha Shreeharsh

Strategy & Operations Fellow





N. Sankar Narayanan

N. Sankar Narayanan is a distinguished IT and infrastructure technology leader known for revolutionizing India's transportation sector. With over a decade of experience, he specializes in driving digital transformation across the country's tolling and transport systems.

His most notable achievement is pioneering India's 1st Interoperable Electronic Toll Collection system on the Mumbai-Surat Corridor in 2013. This groundbreaking work established the fundamental technology and blueprint for the current nationwide success of FASTag.

Sankar remains a critical force in shaping the industry's future. He actively contributes to key technical working groups under IHMCL and NPCI, setting national standards for:

- Electronic Toll Collection (ETC)
- Multi-lane Free Flow (MLFF)
- GNSS-enabled ETC implementation

He is a key driver in making India's road network smarter, faster, and more efficient.



SECURE ELEMENTS
INTEGRATING SECURE MOBILITY SOLUTIONS



From Chip to Cloud — Securing India's Software-Defined Vehicle Future with AI-Driven Cybersecurity

Abstract for ITS India Congress 2025 — Theme: AI in Mobility: For Safer, Sustainable, and Connected Roads

The automotive landscape is rapidly evolving toward Software-Defined Vehicles (SDVs), where vehicles are no longer defined by hardware but by dynamic, updateable software ecosystems. This paradigm brings enormous potential for innovation in connected, electric, and autonomous mobility - but it also introduces unprecedented cybersecurity challenges.

Secure Elements' talk, titled **"From Chip to Cloud - Securing India's Software-Defined Vehicle Future"** explores how India can build a trusted, resilient, and secure SDV ecosystem by integrating protection at every layer of the mobility stack - from embedded hardware and in-vehicle networks to cloud and charging infrastructure.

The session emphasizes the critical role of Artificial Intelligence in staying ahead of evolving cyber threats. AI-powered tools can continuously monitor vehicular data, detect anomalies, and perform predictive threat analysis, ensuring that vehicles remain safe, compliant, and operational across their lifecycle. By combining AI-driven Threat Analysis and Risk Assessment (TARA), AI powered embedded Intrusion Detection and Prevention Systems (IDPS), a centralized Mobility Security Operations Centre (MSOC) and Digital Twins, India can create a proactive defense posture for SDVs, aligning with India's AIS 189/90, UNECE R155/R156, ISO/SAE 21434 and EU Cyber Resilience Act (CRA).

As India advances toward its electric and connected future, the talk highlights how AI-enabled cybersecurity will be the cornerstone of enabling safer, smarter, and more sustainable mobility — truly securing every element, from chip to cloud.

Saket Mohan

Founder and CEO, Secure Elements Limited



Sego Automobile Solutions – Building a Safer, Smarter Road Future

Every year, over 150,000 people lose their lives on Indian roads—one every three minutes. Most of these accidents are not inevitable; they arise from brief lapses in attention, delayed braking, and the absence of timely awareness. At Sego Automobile Solutions, we believe that no one should lose their life because of a preventable road accident.

Sego is reimagining road safety by blending intelligent technology with human responsibility. The company is developing an ecosystem that connects vehicle-mounted intelligence, real-time sensors, and cloud analytics to create safer driving environments, responsible fleets, and data-driven mobility systems.

Traditional safety models react after accidents occur. Sego aims to change that by making safety predictive. Its flagship platform, iBrake, is an AI-powered system designed to prevent rear-end collisions, one of the most frequent and avoidable types of crashes. iBrake continuously monitors vehicle dynamics, driver behavior, and surrounding traffic to predict potential collisions and issue timely alerts or assisted braking.

Pilot deployments have shown a significant improvement in Time-to-Collision (TTC) — extending driver reaction windows and reducing both accident probability and severity. This validates Sego’s approach to proactive, data-driven intervention that helps save lives in real-world driving conditions. Sego’s goal is to make intelligent safety accessible at scale. Its solutions are designed not only for high-end vehicles but also for fleets, commercial vehicles, and everyday road users. By keeping the systems modular and affordable, Sego ensures that safety is not a premium feature—it’s a standard expectation.

Beyond reducing accidents, Sego’s ecosystem promotes smoother driving, improved operational efficiency, and greater accountability through anonymized safety data. Every near miss becomes a learning opportunity, contributing to the long-term vision of zero fatalities on roads.

At its core, Sego stands for purposeful innovation—where technology serves humanity. The company’s mission is to bridge data and compassion, awareness and action, to create intelligent systems that protect lives and inspire trust.

Sego is not just building safety devices; it is building confidence in motion—the foundation of intelligent mobility and the promise of a safer, smarter road future.

Chaitanya Bavaraju

*CEO & Founder,
Sego Automobile Solutions Private Limited*

“Take up one idea. Make that one idea your life—think of it, dream of it, live on that idea. Let the brain, muscles, nerves, every part of your body, be full of that idea, and just leave every other idea alone. This is the way to success.”

— Swami Vivekananda



BITS Pilani
Hyderabad Campus



Making Urban Roads Safer A Systematic Approach: A Case study of Hyderabad, India

This study presents a comprehensive methodological approach for the identification and segmentation of the key risk factors associated with fatal road crashes. Hyderabad, an Indian metropolis with significant annual fatal crashes, is selected as the case study city. Data containing the date, time, and location of the crash, number of injuries and fatalities, accused and victim vehicle details are collected from Hyderabad Traffic Police, and a comprehensive registry-based crash database is developed. Based on the database, a Cross-sectional study is conducted, and risk ratio (RR) is used as a measure to test the association between the risk factors and fatal outcomes. Logistic regression, log-binomial regression, and robust Poisson regression models were also used to understand the association of fatal crash outcomes with different attributes. RR and associated confidence intervals are further used to classify the factors into three groups: significant, insignificant, and non-risk factors. Subsequently, the Apriori algorithm is used to determine the interrelationship / association between the risk factors leading to a fatal crash outcome. Using the Apriori algorithm, a set of association rules involving three factors leading to a significant number of fatal crashes are identified. Finally, the derived results are combined to segment the factors associated with fatal crashes into six specific segments: Very high, High, Moderate, Low, Very low, and Extremely Low-risk factors. Such identification and segmentation of potential risk factors associated with fatal crashes would help the planning agencies to formulate mitigation measures for a low and medium-income country (LMIC) like India.

Prof. Bandhan Bandhu Mazumdar

*Associate Professor, BITS Pilani
(Hyderabad Campus)*



Dr. Agnivesh Pani

*Assistant Professor,
Department of Civil Engineering, IIT (BHU), Varanasi*

AI in Mobility: Harnessing Intelligent Systems for Integrated and Resilient Urban Transport

Artificial Intelligence (AI) is transforming the way cities perceive, plan, and manage mobility. Beyond personal transport, the integration of AI across passenger and freight systems is reshaping how we design sustainable, inclusive, and resilient urban transport networks. Intelligent systems now enable planners and operators to coordinate multiple modes - public transit, shared mobility, and freight logistics - on unified digital platforms that respond dynamically to real-world conditions. This talk presents an evolving view of “AI in Mobility” that bridges behavioural analytics, multimodal coordination, and system optimisation. It explores how intelligent sensing, predictive modelling, and data fusion can support informed decisions across the entire urban transport ecosystem - from last-mile passenger flows to urban freight distribution. The discussion draws upon recent field applications involving AI-assisted travel behaviour modelling, dynamic route allocation, crowd management in high-density nodes, and freight scheduling under multimodal constraints. Three thematic areas frame the presentation:



Behavioural and Operational Intelligence -

Applying AI-based models to understand how travellers and operators adapt to changing network conditions, supporting adaptive transit and freight strategies.

Integrated System Planning -

Using real-time data from connected infrastructures to harmonise passenger and freight movements, ensuring efficiency, reliability, and safety across modes.

Implementation and System Resilience -

Focusing on interoperability among platforms, scalability of AI applications, and institutional readiness to integrate intelligent tools into city operations and freight management.

The presentation highlights ongoing experiences from Indian cities where AI-enabled tools are being piloted for multimodal coordination and demand forecasting, offering valuable insights for scalable national deployment. By combining human-centred design with computational intelligence, the talk envisions a pathway toward next-generation mobility systems - resilient, data-driven, and capable of supporting both people and goods in the complex rhythm of urban life.





**REFORM
PERFORM
TRANSFORM**



Advancing Intelligent Transport Systems for Connected E-Highways in India

Intelligent Transport Systems (ITS) India represents a transformative movement towards building a safer, more efficient, and sustainable transport network through the integration of advanced technologies, data intelligence, and roadside assistance automation. By including many emerging tech pilots like NHEV, this movement is converging innovations in Artificial Intelligence (AI), Internet of Things (IoT), connectivity, and electrification. ITS India aims to redefine how India plans, manages, and operates its transportation systems—creating the foundation for smart corridors and connected mobility infrastructure across the nation. As one of the flagship programs aligned with India's Viksit Bharat @2047 vision and the Government of India's push for AI-driven sustainable transport, the National Highways for Electric Vehicles (NHEV) plays a pivotal role in realising the objectives of ITS India. NHEV contributes significantly by enabling a technologically advanced, interoperable, and sustainable highway ecosystem that seamlessly integrates electric mobility with intelligent transport infrastructure.

Within this transformative landscape, the **National Highways for Electric Vehicles (NHEV)** initiative plays a defining role as one of the key contributors to the growth and advancement of ITS in India. NHEV's work goes beyond electrifying highways; it establishes a technologically advanced, interoperable, and sustainable ecosystem that supports the larger objectives of ITS India.

NHEV corridors are being developed with integrated smart technologies such as IoT-enabled sensors, cameras, and Vehicle-to-Everything (V2X) communication systems. These technologies enable real-time monitoring, traffic management, law enforcement, and emergency response. The resulting data-driven ecosystem enhances highway safety, efficiency, and connectivity, aligning perfectly with ITS India's mission of creating intelligent and responsive transport networks.

Spanning approximately 5,500 kilometres along major national routes such as Delhi-Mumbai and Delhi-Kolkata, NHEV is upgrading traditional highways from Delhi to Kanyakumari into fully functional "e-highways" equipped with predictive maintenance systems, remote diagnostics, freight telematics, and high-uptime charging hubs. These corridors not only support passenger electric mobility and freight mobility but also strengthen logistics efficiency, reduce downtime, cost and optimise traffic flow through intelligent automation in tolling, charging and parking.

Implemented through a hybrid Public-Private Partnership model, NHEV's approach standardises design, procurement, and deployment of ITS hardware and software infrastructure. This creates a scalable framework that reduces entry barriers for technology vendors, promotes interoperability, and builds a commercially viable market for ITS solutions along India's national corridors. Through this model, NHEV ensures that the evolution of ITS in India remains sustainable, cost-efficient, and adaptable to future innovations.

NHEV's focus on sustainability aligns deeply with India's commitment to achieving net-zero emissions. By embedding ITS technologies within charging infrastructure and traffic management systems, NHEV contributes directly to reducing carbon footprints and fuel consumption.



Smarter route planning, reduced congestion, and data-led decision-making make India's transport corridors not only cleaner but also more reliable and efficient.

Beyond infrastructure, NHEV's ITS-enabled ecosystem drives tangible economic and social benefits. The project's roadside hubs serve as logistics and circular economy centres, creating employment opportunities in semi-urban and rural regions. These hubs generate new roles for EV technicians, charge-point operators, fleet coordinators, and other service professionals, helping bridge economic divides and fostering inclusive growth.

Through its close integration with the Ease of Doing Business (EoDB) framework, NHEV also provides regulatory sandboxes and pilot authorisation pathways that de-risk innovation and facilitate faster market entry for ITS and e-mobility technologies. This policy-backed environment accelerates nationwide adoption of connected transport systems and supports India's transition toward a digital and sustainable mobility future.

In essence, NHEV serves as a strategic catalyst within the ITS India framework, providing the infrastructural and technological foundation for intelligent, electric, and sustainable highways. Its comprehensive approach—spanning technology integration, regulatory facilitation, and inclusive development—positions it as a cornerstone in India's intelligent transport revolution. By linking green mobility with smart infrastructure, NHEV is transforming national highways into future-ready corridors that are safe, efficient, and environmentally responsible—paving the way for India's leadership in global ITS innovation.

Bhumica Kohli

*Communications Lead,
Ease of Doing Business*





Integrating SDG 11.2 in India's Intelligent Transport Systems (ITS)

ITS Solutions for achieving Sustainable Development Goals (SDGs)

Context

SDG 11.2 aims for safe, affordable, accessible, and sustainable transport systems for all by 2030. Global case studies (Bogotá, Curitiba, Guangzhou) show that the goal is achieved when transport, land-use, accessibility, and equity are planned together—not as isolated infrastructure projects.

Key Global Insights

- Bogotá (TransMilenio): Achieved 45% mode share via trunk-feeder integration, off-board payment, and strong governance. → India needs empowered corridor-level authorities.
- Curitiba (Brazil): Zoning + Transit-Oriented Development (TOD) reinforced BRT success. → Pair corridor development with land-use incentives.
- Guangzhou (China): BRT serves 850,000 passengers daily; high-frequency multimodal design reduced emissions. → Fix BRT implementation, don't abandon it.
- Accessibility Metrics (Netherlands, UITP): Shift from proximity-to-stop to access-to-opportunity indicators using open tools like PtAC.

Challenges in the Indian Context

- Fragmented governance across multiple agencies.
- Weak enforcement and lack of real-time data systems.
- Inconsistent corridor design and mixed-traffic BRT lanes.
- Equity gaps affecting women, elderly, and PwD users.
- Operational funding shortfalls post-capital investment.

Recommendations & Action Pathway

- Develop ten regional pilot corridors with feeder systems, Electric Road System (ERS) lanes, and hydrogen-fuelled buses made in India.
- Empower Unified City Transport Authorities (UCTAs) for integrated planning, fares, and enforcement.
- Adopt open SDG 11.2 dashboards (PtAC + NIUA) for accessibility-based evaluation.
- Mandate accessibility audits and gender-sensitive design in all ITS and BRT DPRs.
- Link finance with performance outcomes using TOD, congestion pricing, and carbon credits.
- Leverage Make-in-India tech (ERS, AI fleet management, dynamic routing).

Core Message for the Panel

India must rethink ITS as an ecosystem, not a hardware project. Integrating SDG 11.2 principles—accessibility, inclusion, data, and governance coherence—will make urban mobility equitable and climate-aligned. The future of ITS lies in fixing, not forsaking, our BRT foundations—making them smarter, cleaner, and people-centric.

Sainath Gurav

*Founder and Managing Director,
Sthaar Consulting Private Limited*





CRUISE an AI-based Next Generation Traffic Control System

As cities worldwide face escalating congestion and increasingly complex traffic dynamics, many legacy adaptive signal systems are struggling to keep pace. While these traditional systems have served cities well for decades, they remain constrained by the need for manual configuration, hardware dependencies, and limited responsiveness to real-time conditions such as incidents or special events. These challenges motivated our team at A*STAR's Institute for Infocomm Research, together with Singapore's Land Transport Authority, to develop CRUISE, the Cooperative and Unified Smart Traffic System, an AI-powered, fully automated traffic management platform designed to redefine urban traffic control.

CRUISE was conceived as a next-generation solution that overcomes the rigidity and operational overheads of existing systems. Unlike conventional platforms that rely on pre-set coordination plans and periodic manual tuning, CRUISE dynamically optimizes signal timings using live sensor data, including loops, radars, cameras, and even floating car information. Its controller-agnostic design enables seamless integration with both legacy and modern junction controllers, reducing costs and avoiding vendor lock-in, a key advantage for large-scale deployment in built-up urban networks.

At its core, CRUISE applies advanced prediction and optimization algorithms to coordinate intersections in a self-organizing, distributed manner. It automatically detects and responds to traffic incidents such as accidents or blockages, re-routing flows and restoring balance in real time. Key capabilities, such as bus and emergency-vehicle priority, accident-adaptive control, and opportunistic peer-to-peer coordination, will be illustrated through short video demonstrations during the talk.

Live trials on a seven-junction corridor in Singapore demonstrated 9–18 % reductions in peak-hour travel times compared to current operational system. The results validate CRUISE’s ability to achieve significant performance gains with minimal configuration effort. The system has also operated continuously for over a year, proving its robustness and reliability. Ultimately, CRUISE represents a paradigm shift from manually tuned, reactive adaptive traffic systems to intelligent, proactive, and sustainable urban traffic management, a key step toward realizing the vision of self-optimizing smart cities.

Dr. Jaya Shankar P.

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Secretary, IEEE ITSS Standards Committee*

Intelligent Transportation Systems in Unstructured Environments: A Journey

In today's world, mobility is undergoing a huge transformation, especially in the Global South. With the rise in urbanisation and rapid increase in the number of vehicles and complex road-use patterns, especially in countries like India, the new challenge is not just expanding the road infrastructure but making roads and vehicles smarter, safer and more sustainable. This rapid growth is complemented with the advancements in Artificial Intelligence (AI), which is the key enabler for this shift. The traffic in countries such as India, present a unique yet demanding test-bed, owing to its highly unstructured nature. This unstructuredness comes from various sources such as, presence of mixed and nonstandard vehicles (two-wheelers, three-wheelers, cars, trucks), absence of lane discipline, presence of pedestrians and animals on the road and their cross-movement, as well as dynamically changing road conditions due to constructions, weather and continuous upgradation of infrastructure to meet the demands of urbanisation and volume of traffic. In this article, we not only explore the role of AI in mobility, but also showcase the initiatives that we have taken to draw the attention of the global research community to the novel problems of smart mobility in unstructured environments.

Most of the AI enabled smart road and vehicle systems have been developed for the structured environments. In these road environments, clear lane markings, uniform signage, and predictable driving behavior along with disciplined lane use, well-marked roads, provide ideal conditions for development and deployment of reliable AI systems such as Advanced Driver Assistance Systems (ADAS) and Autonomous vehicles. The AI based camera and radar systems for collision avoidance, such as Tesla Autopilot, GM Super Cruise, etc., detect nearby vehicles, pedestrians, or cyclists and automatically apply brakes or adjust steering to prevent collisions. Adaptive cruise control (ACC) systems are based on AI that dynamically adjusts vehicle speed based on traffic flow, reducing rear-end collisions. Similarly, Computer vision, machine learning and deep learning play an important role in lane departure warning, blind-spot monitoring and predictive path planning. Vehicles equipped with automatic emergency braking (AEB) systems have shown a 50% reduction in rear-end crashes compared to those without AEB.

In structured environments, various aspects of AI are also deployed for smart traffic management, such as intelligent traffic signal control, incident detection and response where live camera feeds are analysed for accident detection and predictive analytics for crash hotspots, enabling targeted interventions to reduce accidents and make roads safer. AI plays a crucial role in communication especially, in interpreting and managing exchange of data between Vehicle - to X (V2X), where X could be infrastructure (V2I) or vehicles (V2V). AI also plays an important role for driver behaviour prediction, detection of violation of rules and traffic monitoring analytics. A combination of all of these AI systems ultimately aim at reducing road accidents and increasing road safety for all types of vehicles and road users.

Although AI plays an important role in making roads safer, most AI systems are developed and fine-tuned on the data that is fed into these systems. As mentioned earlier, these systems are mostly developed and deployed in structured environments and therefore, are fine-tuned on the data collected in those environments. Due to the large variation in these environments, the systems trained on data from structured environments may not perform as effectively when deployed in unstructured environments. Moreover, there are various socio-economic reasons for the chaotic and unstructured nature of traffic in countries such as India, and the environment cannot be converted

to a structured environment at a rapid pace. However, these environments provide novel challenges for the AI research community and industry to develop and deploy AI enabled systems that take into consideration the complexities of such environments. Ongoing research [1] has also shown that the cultural context plays an important role in developing solutions that are fine-tuned to take into consideration the socio-economic situations and local specificities.

At the same time, it is important to create social awareness, educate young drivers and bring stricter policies to ensure that the traffic rules and regulations are followed. Various initiatives [2], [3], [4] are being put in place to ensure safer roads. In the next paragraph, I discuss the various initiatives we have undertaken in this field to create awareness and drive outcome based research in the area of ITS in unstructured environments.

“With the aim of raising awareness of the global intelligent transportation research community, we first organised an industry-academia meet-up in March 2019 that acted as a precursor to establishing the first IEEE Intelligent Transportation Systems Society Chapter in India under the IEEE Delhi Section in November 2019. We also initiated a series of workshops titled “Workshop on Intelligent Transportation Systems. Intelligent Vehicles and Advanced Driver Assistant Systems” that have taken place along with the conference IEEE Intelligent Vehicles Symposium (IEEE IV) since 2020 [5], [6], [7], [8], [9]. We are hosting the 5th version of the workshop in the IEEE International Conference on Intelligent Transportation Systems (ITSC) to be held in Gold Coast in November 2025. Each of these workshops have speakers of International repute who bring together various aspects of development and deployment of AI solutions with respect to unstructured environments. In 2022, we also organised the conference, IEEE SOLI, and had a very interesting and fruitful industry session with a panel discussion from industry on “Digitization trends in Logistics and Supply Chain Optimization”, with stalwarts in the field discussing on the pertinent topic. Along with the 35th International Conference on Pattern Recognition, ICPR2024, we organised the workshop “Intelligent Mobility in Unstructured Environments”, bringing in awareness and engaging the AI community to understand the huge gamut of research initiatives required for making our roads safer and travel easier.

In Delhi, we organised a workshop titled “First International Workshop on Intelligent Data Analytics for Smart Mobility”. Each of these workshops has created interest in the global research community towards discovering AI based solutions for unstructured environments. It has also led to a PAR for creating an IEEE Standards on “Guide for Metadata on Road Accidents in Low- and MiddleIncome Countries (LMIC)” [10], with the aim to enable reliable and comparable accidentology studies across diverse LMIC contexts, to support the development and validation of ITS, ADAS, and AD systems under conditions that differ significantly from high-income countries and provide a foundation for new safety technologies, adaptive risk models, and data-driven regulatory frameworks. Research in my lab at the School of Computer and Systems Sciences, Jawaharlal Nehru University, New Delhi has focused on developing computer vision and machine/deep learning based frugal solutions for Advanced Driver Assistance Systems as well as Advanced Rider Assistance Systems for Powered Two-wheelers for unstructured environments.

It is heartening and very exciting that the ITS India Forum is organising the ITS India Congress 2025, bringing together stalwarts from policy, academia and industry to discuss on the various aspects of “AI in Mobility: For Safer, Sustainable, and Connected Roads.”. With the community coming together in such important forums, we look forward to contributing in the development of novel, inclusive and frugal solutions that are deployable in unstructured environments such as in India to create safer and smarter road environments for all.

References:

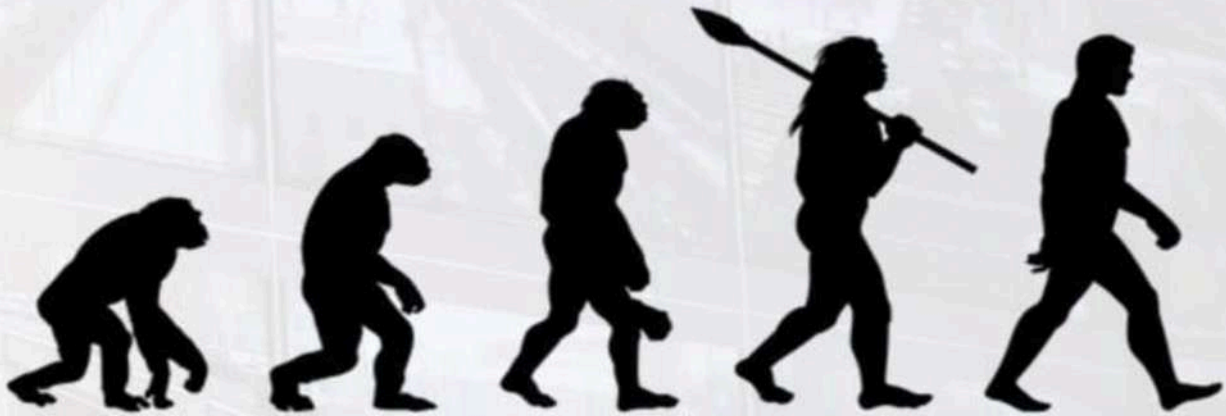
- “Cultural Contexts in AI Design: Addressing Cultural Biases in AI Models and Data”, Javier Ibanez-Guzman, Imane Taourarti, Arunkumar Ramaswamy (Renault Group) and Ayesha Choudhary (Jawaharlal Nehru University), ERCIM News 141, Special theme: AI for Cultural Heritage, April 2025, https://ercim-news.ercim.eu/en141/special/cultural-contexts-in-ai-design-addressing-cultural-biases-in-ai-models-and-data#google_vignette
- https://www.martechai.com/ai-news/india-unveils-first-ai-powered-traffic-management-system-on-delhis-dwarkaexpressway-189.html?utm_source=chatgpt.com

- https://www.autocarpro.in/news/genesys-launches-indias-first-ai-navigation-map-for-auto-and-mobilityindustries-121148?utm_source=chatgpt.com
- https://telanganatoday.com/chennai-to-roll-out-ai-powered-adaptive-traffic-signals-at-165-junctions?utm_source=chatgpt.com
- 1st Workshop on Intelligent Transportation Systems, Intelligent Vehicles and Advanced Driver Assistant Systems for Unstructured Environments (ITSIVUE2020)
- 2nd Workshop on Intelligent Transportation Systems, Intelligent Vehicles and Advanced Driver Assistant Systems for Unstructured Environments (ITSIVUE2021)
- 3rd Workshop on Intelligent Transportation Systems, Intelligent Vehicles and Advanced Driver Assistant Systems for Unstructured Environments (ITSIVUE2022)
- 4th Workshop on Intelligent Transportation Systems, Intelligent Vehicles and Advanced Driver Assistant Systems for Unstructured Environments (ITSIVUE20244)
- 5th Workshop on Intelligent Transportation Systems, Intelligent Vehicles and Advanced Driver Assistant Systems for Unstructured Environments (ITSIVUE20255)
- 10. <https://standards.ieee.org/ieee/3538/11885/>

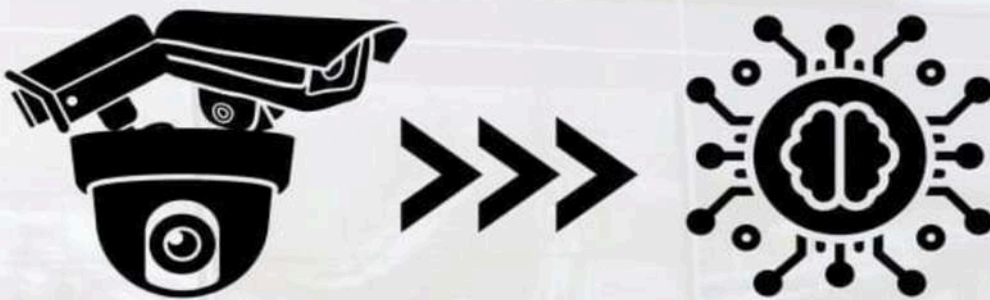




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Anish Michael

Lead Centre for Future Mobility



Madhumitha V

Lead Centre for Future Mobility

Building India's Future: Intelligent, Inclusive & AI-Powered Mobility

OMI Foundation is a new-age policy think tank working at the intersection of mobility innovation, governance, and public good. Established to strengthen India's leadership in sustainability and innovation, it focuses on areas such as artificial intelligence, future mobility, clean-tech, industrial transitions, and social inclusion. Recognised for advancing AI for public good, OMI combines rigorous research with policy advocacy ensuring that ideas translate into measurable impact. At the heart of its mission lies a clear goal: aligning technological progress with sustainable growth, so India's development is not only advanced but also resilient and equitable.

Championing Intelligent Transport Systems & AI-Driven Mobility

Intelligent Transport Systems (ITS) are central to India's mobility transformation and a critical enabler for the Viksit Bharat vision, national logistics efficiency goals, and citizen-centric smart governance. As India urbanises and motorisation grows, ITS technologies will power safer roads, efficient commutes, cleaner cities, and globally competitive supply chains.

From real-time traffic control and integrated public transport to connected vehicles and digital mobility services, ITS forms the backbone of future mobility ecosystems.

ITS is about improving everyday life, reducing accidents, easing congestion, cutting emissions, enhancing freight productivity, and ensuring every citizen has access to reliable and inclusive mobility. It underpins national missions such as Gati Shakti, PM e-Bus Sewa, the National Logistics Policy, and the National Urban Digital Mission, and aligns closely with the IndiaAI Mission, which is building a secure and equitable AI ecosystem through democratised compute access, trusted datasets, indigenous AI capabilities, talent development, industry collaboration, startup support, and ethical AI frameworks. In mobility, this mission will accelerate AI-enabled traffic management, safety systems, fleet optimisation, and intelligent public transport.

OMI is shaping India's ITS and future mobility landscape through rigorous research and policy leadership. It is building the foundation for a secure, interoperable, and future-ready transport ecosystem by developing national and state ITS strategies, advancing standards for cybersecurity and interoperability, and enabling resilient digital mobility infrastructure. Through technical studies and thought leadership, OMI is driving progress in connected mobility, including C-V2X communication, congestion reduction, road safety, and vehicle emissions management. It is also strengthening public transport through research focused on enhancing service throughput, integration, and passenger experience. Together, these efforts position OMI as a strategic knowledge catalyst, steering India's transition toward intelligent, inclusive, and globally competitive mobility systems.

Through these initiatives, OMI is championing a future where mobility is smart, seamless, and equitable supporting safer roads, de-congested cities, efficient logistics networks, electrified and connected public transport, and enhanced ease of living for all citizens.

ITS is not merely a technology transformation, it is a nation-building mission, powering India's journey toward sustainable growth, inclusive mobility access, and global leadership in advanced transport systems. OMI is proud to help build this future in partnership with government, industry, and innovation-ecosystem partners.

Driving National Impact through Policy, Innovation & Partnerships

OMI Foundation has emerged as one of India's leading think tanks on mobility, technology, and inclusion - trusted by governments,

national missions, and international partners alike. Its research and advisory work has directly shaped policy frameworks, programme designs, and implementation roadmaps across multiple states and ministries.

Nationally, OMI works with NITI Aayog, MeitY, DST, MoRTH, BEE, MoCA, MSDE, Ministry of Labour & Employment, and others providing strategic inputs on EV ecosystems, digital mobility, AI, just transition, circular economy, and frontier technologies. Across states, OMI anchors Program Management Units in Kerala, Telangana, and Jharkhand, and supports leaders in Tamil Nadu, Maharashtra, Delhi, Odisha, Haryana, West Bengal, and Madhya Pradesh. Landmark initiatives include EV-Ready Tamil Nadu, Skybound Tamil Nadu, Jharkhand's Sustainable Mobility Transition Roadmap, and Women in EV Manufacturing & inclusive skilling frameworks in Telangana, alongside support to EV policies, aggregator guidelines, urban mobility strategies, and ITS blueprints. Globally, OMI strengthened India's voice during the G20 Presidency, contributing to Think20, Urban20, and Civil20 tracks, with recommendations on battery circularity, equity, and future mobility pathways. Its insights are showcased at forums such as the World Economic Forum, International Transport Forum, Clean Energy Ministerial, and global EV summits.

OMI's flagship publications Ease of Moving Index, EV-Ready India, Skybound India, and Women-Led EV Transition are recognised for evidence-based policy design. Awards include Ambassador of Change (2023), Policy Innovator of the Year (2023), and UN-MoHUA Inclusive Cities Award, alongside global fellowships for its team.

Through partnerships with academia, startups, and industry, OMI enables capacity-building programmes, and standard-setting efforts that accelerate innovation and institutional capability. Through this integrated approach linking research, policy design, technology pilots, and talent development, OMI is building the knowledge and institutional capacity powering India's journey towards smart, safe, inclusive, and future-ready mobility systems.

Shaping India's Mobility Future

Guided by a commitment to innovation with purpose, OMI Foundation is helping position India as a global leader in intelligent transportation and AI-driven mobility. By combining research excellence, policy leadership, and inclusive development principles, OMI is enabling a mobility ecosystem that is smart, secure, sustainable and built for every Indian.



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), Darby (USA, India), Danlaw Electronics Assembly Limited (India), Cohda Wireless (Australia), Akteena(USA, India) and Rapita Systems (UK) 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 ECUs, 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.

Nagaraj Sham Bhat

Technical Director, Danlaw





DestroSolutions

Sumit Chouhan

*CISO & SVP Cybersecurity – APAC,
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Securing the Future: Why India Must Prioritise Cybersecurity in Connected Autonomous Vehicles

Introduction

India is on the cusp of a mobility revolution. With its ambitious push toward electric vehicles (EVs), smart cities, and intelligent transport systems, the evolution toward Connected Autonomous Vehicles (CAVs) is not a matter of if, but when. As global automotive giants, startups, and policymakers converge on making CAVs a reality, a critical element threatens to undermine this progress: cybersecurity.

The fusion of vehicular autonomy with real-time connectivity introduces a vast surface of cyber vulnerabilities. From data breaches to remote hijacking of vehicle controls, the risks are real and growing. India, with its vast population, expanding digital infrastructure, and complex traffic ecosystems, cannot afford to overlook this strategic domain.

CAVs and Cyber Risk: A Global Wake-Up Call

Modern vehicles can have over 100 million lines of code and multiple connectivity modules (Bluetooth, Wi-Fi, 4G/5G, V2X). Each represents a potential entry point for cyberattacks. In 2015, ethical hackers remotely took control of a Jeep Cherokee in the US, leading to a recall of 1.4 million vehicles. In 2020, Tesla's Model X was hacked using vulnerabilities in its keyless entry system. These are not hypothetical scenarios; they serve as stark reminders that vehicle cybersecurity is a national security concern.

According to McKinsey (2023), global cybersecurity spending in the automotive sector is expected to reach \$9.7 billion by 2030. The UNECE WP.29 regulation (R155) has already made cybersecurity compliance mandatory for new vehicle types in the European Union. India, with increasing exports and integration into global supply chains, must not fall behind.

The Indian Context: A Complex Opportunity

India's urbanisation is projected to reach 600 million urban residents by 2031 (NITI Aayog), with vehicular traffic expected to increase exponentially. As India embraces CAVs in sectors such as logistics, defence, public transit, and private mobility, the attack surface for adversaries multiplies. The convergence of IT and OT (Operational Technology) in CAVs also raises new national security challenges; foreign state actors could potentially disable fleets, manipulate data, or breach infrastructure through vehicular systems.

Moreover, the lack of standardised protocols and the fragmented regulatory environment make Indian CAV ecosystems particularly vulnerable. With over 1.4 billion people and a growing middle class, India presents one of the largest potential CAV markets globally. This scale demands a world-class cybersecurity strategy.

Why India Must Act Now

- 1. Digital Infrastructure Is Expanding Rapidly:** India has over 1.2 billion mobile connections and is among the largest internet markets. With the rollout of 5G and IoT, vehicular communication (V2V, V2I, V2X) will become the norm, introducing new vectors for attack.
- 2. Strategic Importance of Mobility:** The mobility sector contributes nearly 7.1% to India's GDP and employs over 37 million people. A cyberattack on this sector could result in economic paralysis.
- 3. Military and Emergency Use Cases:** India's armed forces and paramilitary are actively exploring autonomous ground vehicles and UAVs. These require hardened security architectures to prevent sabotage.
- 4. Absence of Indigenous Standards and Testing Infrastructure:** While AIS 189/190 are steps in the right direction, India needs a comprehensive framework aligned with international best practices such as ISO/SAE 21434 and UN R155.

5. **Startup and Tech Ecosystem Synergy:** India hosts one of the world's largest startup ecosystems. With the proper regulatory support, cybersecurity for CAVs could emerge as a high-value export capability.

Recommendations for India's CAV Cybersecurity Strategy

- **National CAV Cybersecurity Framework:** Establish a dedicated regulatory and compliance framework integrating global standards (UN R155, ISO 21434) under the Ministry of Road Transport and Highways (MoRTH) and the Ministry of Electronics and IT (MeitY).
- **Testbeds and Simulation Labs:** Create secure mobility testing labs under NATRiP and TiHAN (IIT-H) for real-world validation of CAV security.
- **Public-Private Collaboration:** Encourage joint R&D between OEMs, Tier 1 suppliers, startups, and defence PSUs focused on CAV security architecture.
- **Capacity Building and Talent Development:** Launch specialised programs under institutions like IISc, IITs, and IIITs to build next-gen automotive cybersecurity professionals.
- **Cybersecurity Certification for CAV Startups:** Develop fast-track audit and compliance programs to mitigate risks associated with early-stage innovations in the CAV domain.

Conclusion

As India steps into the autonomous era, the need to embed cybersecurity from the design stage is no longer optional; it is imperative. The cost of inaction is not just measured in economic losses, but in human lives and national sovereignty. Cybersecurity is the seatbelt of the connected mobility age. It's time India buckled up.

About the Author:

Sumit Chouhan is a seasoned technology and mobility strategist, specialising in enterprise, automotive cybersecurity and intelligent transport solutions. He currently serves as the Chief Information Security Officer (CISO) at an automotive cybersecurity firm. With over two decades of experience advising enterprises and government institutions on securing critical digital infrastructure, he is deeply committed to advancing a secure and resilient future for India's connected mobility landscape.

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**REFORM
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Building Smarter Journeys for Bharat: How Intelligent Transport Systems Are Shaping the Future of Mobility

Intelligent Transport Systems, or ITS for short, offer far more than technology upgrades on our roads. They represent a shift in how India moves, experiences travel, and connects its people. Imagine driving on a national highway and receiving a live alert about an accident ahead. Instead of waiting helplessly in a traffic jam, you take a smart detour, avoid the congestion, and reach your destination on time. This is no longer futuristic, it's already happening across India's growing network of smart highways.

At their core, ITS relies on an ecosystem of sensors, cameras, data networks, and analytics that work together to manage traffic efficiently and improve safety. In Telangana, for example, 200 state transport buses were equipped with AI-based driver alert systems that could detect potential collisions, unsafe distances, and speeding. Within a year, accidents on these routes dropped by nearly 40 percent. This kind of responsiveness demonstrates that ITS is more than just efficiency; it is also about safety, predictability, and peace of mind. It's technology quietly working in the background to make every journey smoother and more secure. The impact of ITS, however, extends well beyond road safety. Smarter and smoother highways speed up the movement of goods, which lowers logistics costs, boosts market access, and increases productivity. The Ease of Living framework imagines a Bharat system that can be monitored, fixed, and learned from. For a growing democracy, this kind of open, data-driven accountability builds trust between citizens and institutions.

India is moving from measuring development through limited welfare indicators to measuring it through real-time evidence of how people live, move, and interact with their environment. ITS generates that evidence. It provides a living dataset of how cities breathe and highways flow, allowing policymakers to prioritise spending and improve citizen welfare with accuracy rather than assumption. In this sense, ITS becomes a key pillar of Ease of Living—ensuring that the everyday act of moving from one place to another reflects the efficiency and dignity of a modern Bharat.

The economic effects are equally profound. Smarter highways reduce travel time, cut logistics costs, and boost reliability for supply chains. When goods reach markets faster and transport is more predictable, businesses grow, jobs multiply, and opportunities expand along the corridor. This is the foundation of Ease of Doing Business: a seamless movement of people, goods, and ideas that keeps the economy dynamic.

Reliable transport also strengthens India's Cultural Economy. When highways are safe and connected, more people visit festivals, heritage towns, and rural markets. Tourism expands, artisans find buyers, and regional traditions stay alive through interaction. The road stops being just a strip of asphalt—it becomes a cultural thread that stitches together the stories of people and places. In a country where civilisation and commerce have always moved together, ITS reclaims that legacy in a modern form.

It's easy to underestimate how deeply technology can influence culture, but mobility has always shaped identity. Ancient trade routes created entire art forms and communities; modern digital highways can do the same. When travel becomes more accessible, Indians rediscover their own country—its languages, cuisines, crafts, and rituals. That discovery feeds pride, belonging, and economic resilience. This is the heart of the Cultural Economy that today's Bharat must rebuild: not imitation, but innovation rooted in its own heritage.

Urban India, too, is witnessing how ITS enhances both convenience and citizenship. Adaptive traffic lights and smart parking systems in pilot cities are reducing congestion by up to 40 percent. On the Dwarka Expressway, India's first AI-powered traffic management system can identify 14 types of violations in real time. These aren't abstract numbers; they mean ambulances reaching hospitals faster, delivery trucks avoiding bottlenecks, and parents reaching home in time for dinner. Such efficiencies contribute directly to the ease of living that citizens experience every day.

There's also an environmental dividend. The National Highways Authority of India recently reported a decline in carbon emission intensity despite ongoing highway expansion, thanks in part to better traffic management and reduced idling. Each avoided jam or optimised route saves fuel and cuts emissions. When multiplied across thousands of vehicles, these small efficiencies translate into cleaner air and a more sustainable future.

Challenges, of course, remain. Building smart transport networks requires coordination among multiple agencies, consistent standards, and long-term investment. But the direction is set. With every kilometre of E-Highway, every new data-driven corridor, India is transforming mobility into a service that's intelligent, inclusive, and inherently Indian.

For planners, policymakers, and businesses, the lesson is clear: investing in intelligent transport isn't just about smart roads; it's about smarter living. It's about giving people back their time, supporting the economy's backbone through better logistics, protecting the environment, and creating infrastructure that supports the rhythms of everyday life.

ITS is more than wires, sensors, or software. It's a bridge between governance and daily life—a demonstration of how data, technology, and design can together improve the human experience. It supports the Ease of Doing Business by improving economic efficiency, the Ease of Living by enhancing comfort and safety, and the Cultural Economy by keeping Bharat's diverse traditions connected and thriving.

India's ITS journey is still in its early chapters, but its direction is unmistakable. With every connected signal, monitored corridor, and data-driven upgrade, the country is moving closer to a future where travel is less a chore and more a connection to people, to places, and to possibilities. As the country moves into its next phase of growth, these systems will quietly define what progress feels like, not just in metrics, but in moments. When your morning commute is shorter, your city's air cleaner, your holiday safer, and your local market busier, that's when you know intelligent transport is working—not just for vehicles, but for the people and the culture that travel with them.

Abhijeet Sinha

*Program Director- NHEV,
Principal Advisor - SEPC, Ministry of
Commerce & Industry, Government of India.*



DETAILED AGENDA

AND MINUTE-TO-MINUTE PROGRAM

Day 1: 06 November 2025		
Time	Sessions	
0900-0945	Registration	
0945-1115	Inaugural Session	
	Welcome Address	Dr. Digvijay Pawar , Associate Professor, Dept. of Civil Engg., IIT Hyderabad
	Conference Overview	Mr. Akhilesh Srivastava , President, ITS India Forum
	Presentation of Key Reports and Roadmaps	Ms. Aishwarya Raman , Executive Director, OMI Foundation
	Inaugural Address	Prof. B.S. Murty , Director, IIT Hyderabad
	Industry Address	Mr. Sanjeev Sehgal , Convenor - Video Surveillance Committee on Indian Standards, BIS and Founder & CEO, Sparsh CCTV
	Sectoral Perspective	Mr. Sunil , President, Institution of Electronics and Telecommunication Engineers (IETE)

	ITS World Congress 2026 Announcement	Ms. Na-yun Heo Director, Ministry of Land, Infrastructure & Transport, South Korea
	Special Address	Shri B.N. Puri Director, Asian Institute of Transport Development Former Principal Advisor, NITI Aayog, Co-Chair, ITS India Forum
	Special Address	<i>Guest of Honour</i> Prof K.K. Agarwal President, South Asian University
	Special Address	<i>Guest of Honour</i> Shri Vikas Raj, IAS Special Chief Secretary to Government, (Transport, Roads & Buildings Dept.), Government of Telangana
	Distinguished Guest Address	<i>Distinguished Guest</i> Shri S. Krishnan, IAS* Secretary, Ministry of Electronics and Information Technology (MeitY), Government of India
	Keynote Address	<i>Chief Guest</i> Shri Nitin Gadkari Hon'ble Minister of Road Transport and Highways (MoRTH), Government of India
	Release of Reports and Mission Documents: All Dignitaries	
1115-1130	Inauguration of the Exhibition	
1130-1200	Tea Break	
1200-1330	<p>Plenary Session 1 Roadmap for Electronic Enforcement in India</p> <p>Aligned with MoRTH's Electronic Enforcement SOP (October 2025) issued under the guidance of the Supreme Court Committee on Road Safety (SCCoRS), this session charts the national roadmap for technology-driven enforcement. It will discuss policy frameworks, standards, and data integration across platforms such as <i>Vahan</i>, <i>Sarathi</i>, and <i>e-Challan</i>. The session seeks inputs and feedback from industry, academia, and enforcement agencies to ensure seamless, transparent, and deterrence-based implementation of the policy for safer, smarter, and more efficient road transport systems across India.</p>	
	Opening Address by the Chair	<i>Chief Guest</i> Honorable Justice Abhay Manohar Sapre Chairman, Supreme Court Committee on Road Safety
	Special Address	<i>Guest of Honour</i> Shri M. Raghunandan Rao, IAS , Secretary; Transport Commissioner; Commissioner of Commercial Tax, Government of Telangana
	Keynote address On latest SOP of Electronic Enforcement in India	Shri Sanjay Bandyopadhyay, IAS (Retd) Member Secretary Supreme Court Committee on Road Safety

	Inputs on the SOP of Electronic Enforcement in India	<p><i>Moderator:</i> Shri B.N. Puri, Director, Asian Institute of Transport Development Former Principal Advisor, NITI Aayog, Co-Chair, ITS India Forum</p> <p><i>Panelist:</i> Dr. P.K. Sikdar, International Road Federation (India Chapter) Prof. Lelitha Devi Vanajakshi, MoRTH Chair, Professor, Dept. of Civil Engg., IIT Madras Mr Akhilesh Srivastava, President ITS India Forum Mr. Venkata Subbarao Chunduru, Director, Arcadis IBI Group Mr Rakesh Verma, Chairman & Managing Director, Map my India Dr. S. Velmurugan, Chief Scientist, HoD, Traffic Engineering and Safety, CSIR - Central Road Research Institute Mr. Tushar Chhabra, Founder & CEO at CRON AI -Sparsh CCTV Mr. Sonal Ahuja, Executive Director AI, Innovation & Mobility Kapsch AG Advisor and Co-Founder VRAcademi Ai and Metaverse Education Labs</p>
	Q&A	<p>Launch of India's Smart Mobility Blueprint: ITS India Roadmap and Felicitation of the drafting members</p> <p>Launch of ITS Roadmap 2030 prepared by ITS India Forum and Felicited of drafting members by: Justice Abhay Manohar Sapre</p> <p>Brief Presentation by Prof. Digvijay, IITH & Mr. Titas Roy, GW</p> <p>Drafting Committee: Mr. Akhilesh Srivastava, Dr. Digvijay Pawar, Mr. Titas Roy, Mr. Sankar Narayanan, Mr. Sainath Gurav, Mr. Rajesh Krishnan, Mr. V Rangarajan, Prof. Amit Agarwal, Mr. Ankur, Mr. Abhishek</p>
1330-1430	Lunch	
1430-1600	Opening Remarks by Session Chairpersons	<p>Focused Parallel Session 1 Barrier-less Tolling and Way Forward</p> <p>Discover the next generation of tolling technologies reshaping road infrastructure and mobility. This session explores the transition to barrierless tolling through MLFF, the potential of congestion pricing using advanced systems, and the roadmap toward GNSS-based tolling in India. Experts will also highlight the importance of interoperability, standards, and certification frameworks to ensure seamless, efficient, and future-ready tolling solutions.</p> <p><i>Chair</i> Shri Giridhar Aramane IAS (Retd.), Former Secretary, Ministry of Road Transport and Highways (MoRTH) & Ministry of Defence</p> <p><i>Co-Chair</i> Shri Mudit Agarwal CEO, Indian Highways Management Company Ltd. (IHMCL)</p>

	Guest of Honour	Shri M. Suresh Chandra Dy Director General, Standardisation Testing and Quality Certification Directorate, Ministry of Electronics and Information Technology
	Stakeholder Perspectives	<i>Moderator</i> Dr. Manish Jaiswal , Director, NATRAX <i>Speakers</i> Mr. Rick Wang , Far Eastern Electronic Toll Collection Co.,Ltd (FETC) Mr. Akash Sinha , CEO, Tecsidel India Mr. Debasish Debsikdar , Sr VP & Head-M&D, Jio Platforms Mr. Sachin Bhatia , CEO, Metro InfrasyS Mr. Rahul Sawardekar , Ador Powertron Limited Mr. Vijay Kumar T.A , CEO-India, Norden Communication
	Q&A	
	Closing Remarks	Shri Mudit Agarwal , CEO, Indian Highways Management Company Ltd. (IHMCL) Dr. Manish Jaiswal , Director, NATRAX
1430-1600	<p>Focused Parallel Session 2 Emerging Technologies in Public Transportation Systems, Planning & Traffic Management and Humanistic Behavioural Studies</p> <p>Explore the future of connected and secure public transportation. This session dives into cuttingedge innovations in electric mobility systems, intelligent surveillance, and emerging technologies transforming urban transit planning driving safer, smarter, and more sustainable mobility ecosystems</p>	
	Opening Remarks by Session Chairperson	<i>Chair</i> Dr. Sriram Birudavolu , CEO, Cyber Security, Centre for Excellence, Data Security Council of India
	Stakeholder Perspectives	<i>Moderator</i> Mr. Venkata Subbarao Chunduru , Director, Arcadis IBI Group <i>Speakers</i> Dr. Amit Agarwal , Associate Professor, Dept. of Civil Engineering, IIT Roorkee Dr. Arkopal Goswami , Associate Professor, Chairman, Ranbir and Chitra Gupta School of Infrastructure Design and Mngt., IIT Kharagpur Mr. Tejpal Mahajan , HOD Testbed, NATRAX Dr. Tarun Rambha , Professor, CiSTUP, IISc Bangalore Dr. Rajesh Krishnan , CEO, ITS Planners and Engineers Pvt. Ltd. Dr. Gourab Sil , Assistant Professor, Dept. of Civil Engg., IIT Indore
	Q&A	
	Closing Remarks	Dr. Sriram Birudavolu , CEO, Cyber Security, Centre for Excellence, Data Security Council of India Mr. Venkata Subbarao Chunduru , Director, Arcadis IBI Group

1600-1630	Tea Break	
1630-1730	<h3>Technical Session 1 Connected Vehicle Ecosystem</h3> <p>Explore the future of connected and secure public transportation. This session dives into cutting-edge innovations in electric mobility systems, intelligent surveillance, and emerging technologies transforming urban transit planning driving safer, smarter, and more sustainable mobility ecosystems.</p>	
	Opening Remarks by Session Chairperson	<i>Chair</i> Shri R.S. Singh , DDG (IOT), Department of Telecommunication, Ministry of Communications, Government of India
	Stakeholder Perspectives	<i>Moderator</i> Dr. P. Rajalakshmi , Director, NMICPS TiHAN & Professor, IIT Hyderabad <i>Speakers</i> Mr. Jitendra Singh , Senior Director, Govt. Affairs (India & South Asia), Qualcomm Dr. Archak Mittal , Assistant Professor, Dept. of Civil Engg., IIT Bombay Mr. Satheesh G. , Senior Director, Centre for Development of Advanced Computing (C-DAC) Mr. Nagaraj Sham Bhat , Technical Director, Danlaw Dr. Sarat Chandra Babu , Former Executive Director, Society for Electronic Transactions and Security (SETS) Mr. Santosh Sam Koshy , Scientist F, C-DAC Hyderabad Mr. Saket Mohan , CEO, Secure Elements
	Q&A	
	Closing Remarks	Shri R.S. Singh , DDG, Department of Telecommunication, Government of India Dr. P. Rajalakshmi , Project Director, NMICPS TiHAN-IITH
1730-1830	Technical Visit to TiHAN Autonomous Vehicle Test Bed	
1930-2130	Gala Dinner	
Day 2: 07 November 2025		
Time	Sessions	
0915-0930	Special Address	Sri Swami Bodhamayananda Ji Ramakrishna Mission, Hyderabad & Director, Vivekananda Institute of Human Excellence
0930-1100	<h3>Technical Session 2 ITS Solutions for Achieving Sustainable Development Goals (SDGs)</h3> <p>How can technology redefine mobility for a sustainable future? This session brings together pioneering ITS solutions that are driving measurable impact towards the SDGs. This session will spotlight breakthrough innovations, including Electric Road Systems (ERS), ADAS-driven road safety solutions, digital tools enhancing construction zone safety, and smart traffic management systems</p>	

	that cut congestion and emissions. Discover how ITS is reshaping mobility, making it safer, smarter, and future-ready while accelerating the transition to electric and sustainable transport.
Opening Remarks by Session Chairperson	Chair: Shri B.N. Puri Director, Asian Institute of Transport Development Former Principal Advisor, NITI Aayog, Co-Chair, ITS India Forum
Panel Discussion	Moderator: Mr. Gopalakrishnan VC , Director, Automotive and EV, Dept. of Industries and Commerce, Government of Telangana Speakers: Mr. Krishna Chaitanya Reddy , Head - Advanced Technology Department, AISIN Mr. Amit Kumar , Senior Director, Netradyne Mr. Chaitanya Bavaraju , CEO & Founder, Segoauto Mr. Sainath Gurav , Founder, STHAAR Consulting Mr. Rameesh Kailasam , President & CEO, IndiaTech
Q&A	
Closing Remarks	Shri B.N. Puri Director, Asian Institute of Transport Development Former Principal Advisor, NITI Aayog Co-Chair, ITS India Forum Mr. Gopalakrishnan VC , Director, Automotive and EV, Dept. of Industries and Commerce, Government of Telangana
Launch of ERS Report and Team Felicitations	
1100-1130	Tea Break
1130-1300	<p>Plenary Session 2 AI in Mobility: How Hyderabad is Leading the Way and Setting New Benchmarks</p> <p>Hyderabad is redefining what the future of mobility looks like by harnessing the power of AI to build smarter, safer, and more efficient transport systems. This plenary will showcase cutting-edge AI applications, from intelligent traffic and transit solutions to data-driven urban mobility planning, that are putting Hyderabad at the forefront of innovation. Learn how the city is setting a benchmark for India and inspiring global cities to follow.</p>
Keynote Address	<i>Chief Guest</i> Shri Sanjay Kumar, IAS Special Chief Secretary, Departments of ITE&C and Industries & Commerce, Government of Telangana

	Special Address	<i>Guest of Honour</i> Shri V.C. Sajjanar, IPS Commissioner of Police, Hyderabad City
	Stakeholder Perspectives	<i>Moderator</i> Ms. Aishwarya Raman , Executive Director, OMI Foundation <i>Speakers</i> Shri Anil Chhikara , Ex. Deputy Transport Commissioner, Government of NCT Delhi Shri Joel Davis , IPS, Joint Commissioner of Police (Traffic), Hyderabad Dr. Agnivesh Pani , Assistant Professor, IIT BHU Mr. Senturan Karthikeyan , Director-Innovations, Datacorp Traffic Mr. Vikas Narwal , Deputy Transport Controller, Govt of Haryana
	Special Address	Mr. Navendu Agarwal , Senior Vice President and Head of Business, Krutrim
	Q&A	
	Facilitation of the AI in Mobility: Mission and Roadmap Reports , and Facilitation of Drafting Team	<i>Felicitated by</i> Shri Sanjay Kumar, IAS Special Chief Secretary, Departments of ITE&C and Industries & Commerce, Government of Telangana Drafting Team: Mr. Akhilesh Srivastava, Ms. Aishwarya Raman, Prof. Archak Mittal, Mr. Anish Michael, Ms. Madhumitha V., Ms. Aishwarya Agarwal, Ms. Jagriti Arora, Ms. Arunima KT, Mr. Rakshith Mukkatira Chengappa, Mr. Chirantan Prahlad Hegde, Mr. Arjoon Pandey
1300-1400	Lunch	
1400-1500	Focused Parallel Session 3 Emerging ITS Technologies, and policy push This session will spotlight cutting-edge developments in ITS, emerging research trends, and the evolving policy landscape shaping smart mobility. It will bring together experts from academia, industry, and government to share the latest innovations, research insights, and policy directions, accelerating ITS adoption. The session aims to bridge knowledge, technology, and regulatory frameworks to drive future-ready mobility solutions.	
	Opening Remarks by Session Chairperson	<i>Chair</i> Mr. B.D. Paulson , IPS, ADGP, Government of Uttar Pradesh
	Stakeholder Perspectives	<i>Moderator</i> Mr. Jitendra Kaushik , Founder & CEO, Onnyx Traffic Systems <i>Speakers</i> Mr. Nitin Kashyap , Product Head, Krutrim Mr. Keshav Kulkarni , VP, Head KPIT Academy Mr. Anand Shankar , Director - Planning & Advisory, Datacorp Traffic Dr. Jaya Shankar P , Head of Division for Intelligent Transportation Systems, Institute for Infocomm Research, A*STAR- ITS Singapore

	Q&A	
	Closing Remarks	Dr. B.D. Paulson , IPS, ADGP, Government of Uttar Pradesh Mr. Jitendra Kaushik , Founder & CEO, Onnyx Traffic Systems
	Focused Parallel Session 4 Emerging ITS Technologies for Highway Design	
	This session will spotlight cutting-edge developments in ITS, emerging research trends, and the evolving policy landscape shaping smart mobility. It will bring together experts from academia, industry, and government to share the latest innovations, research insights, and policy directions, accelerating ITS adoption. The session aims to bridge knowledge, technology, and regulatory frameworks to drive future-ready mobility solutions.	
	Opening Remarks by Session Chairperson	<i>Chair</i> Dr. N. Subramanian , Executive Director, Society for Electronic Transactions and Security (SETS)
1400-1500	Stakeholder Perspectives	<i>Moderator</i> Prof. K. Ramachandra Rao , Professor Department of Civil Engineering, IIT Delhi <i>Speakers</i> Prof. Bandhan Bandhu Mazumdar , Associate Professor, BITS Pilani (Hyderabad Campus) Dr. HimaBindu Maripini , Assistant Professor, BITS Pilani Dr. Ramesh Chandramajhi , Senior Scientist, CRRl Mr. Kamal Pandey , VP Sales, Sparsh CCTV
	Q&A	
	Closing Remarks	Dr. N. Subramanian , Executive Director, Society for Electronic Transactions and Security (SETS) Prof. K. Ramachandra Rao , Professor Department of Civil Engineering , IIT Delhi
1500-1530	Poster Presentations and Networking Session	
1530-1600	Policy Impact Session By Crashfree India	
	Stakeholder Perspectives & Presentations	<i>Chair</i> Mr. Vaibhav Dange , Public Policy Expert on Infrastructure, Green Fuels and Sustainable Mobility, Build Infra <i>Moderator</i> Mr. Titas Roy , Industry Manager - Infrastructure, Geospatial World Presentations by - Ms. Aastha Shreeharsh , Strategy & Operations Fellow, Crashfree India - Policy Ideathon Teams

	Valedictory Session and Award Ceremony	
1600-1700	Welcome of Chief Guest	Prof. B.S. Murty Director, IIT Hyderabad
	Overview of the Congress Proceedings	Mr. Akhilesh Srivastava President, ITS India Forum
	Special Address	Shri B.N. Puri Director, Asian Institute of Transport Development Former Principal Advisor, NITI Aayog Co-Chair, ITS India Forum
	Key Remarks	Dr. Thota Surya Kiran Executive Director, Transportation & Urban Mobility Former Director, Central Institute of Road Transport, CIRT
	Award Ceremony	Jury Presentation and Announcement of Winners Presentation of Awards to Top 3 Teams by the Hon'ble Chief Minister, Government of Telangana
	Launch of ITS Industry Excellence Awards	Mr. Vaibhav Dange , Public Policy Expert on Infrastructure, Green Fuels and Sustainable Mobility, Build Infra
	Chief Guest Address	<i>Chief Guest</i> Shri A. Revanth Reddy , Hon'ble Chief Minister, Government of Telangana
	Vote of Thanks and Concluding Remarks	Dr. Shiv Kumar , Director General, ITS India Forum

*To be confirmed



SPEAKERS



Shri Nitin Gadkari
Honorable Minister of Road
Transport and Highways (MoRTH)
Government of India



Shri A. Revanth Reddy
Hon'ble Chief Minister,
Government of Telangana



Hon'ble Justice Abhay Manohar Sapre
Chairman, Supreme Court Committee on
Road Safety, Supreme Court of India



**Dr Tripuraneni Hanuman
Chowdary, Padmashri**
Founding CMD, VSNN,
Advisor to TCS, IT Advisor to the
Government of Andhra Pradesh



Shri Sanjay Bandyopadhyay, IAS (Retd)
Member Secretary
Supreme Court Committee on Road Safety



Shri S. Krishnan, IAS
Secretary, MeitY
Government of India



Shri Vikas Raj
Additional Chief Secretary
Government of Telangana



Shri Sanjay Kumar, IAS
Special Chief Secretary,
ITE&C, and Dept. of Industries
& Commerce, Govt. of Telangana



Shri Giridhar Aramane
IAS (Retd.)



Dr. R. S. Sharma
IAS (Retd.)



Shri RohitKumarSingh
IAS (Retd.)

SPEAKERS



Shri M. Raghunandan Rao, IAS
Secretary, Transport Commissioner,
Commissioner of Commercial Tax,
Government of Telangana



Shri V. C. Sajjanar, IPS
Commissioner of Police,
Hyderabad



Prof. B. S. Murty
Director
IIT Hyderabad



Prof. K.K. Aggarwal
President,
South Asian University (SAU)



Dr. Manish Jaiswal
Director, NATRAX,
Ministry of Heavy Industries
(MHI)



Dr. S. Velmurugan
Chief Scientist,
HoD, Traffic Engineering
& Safety, CSIR - CTRI



Shri R. S. Singh
DDG, Department of
Telecommunications (DoT),
Government of India



Shri Joel Davis, IPS
Joint Commissioner of Police
(Traffic), Hyderabad



Shri Sunil
President, IETE



Mr. B.N. Puri
Director, Asian Institute of
Transport Development (AITD)



Shri Vaibhav Dange
Public Policy Expert on Infrastructure,
Green Fuels and Sustainable Mobility,
Build Infra



Mr. Heo Na-yoon
Director, Ministry of Land,
Infrastructure & Transport, Korea

SPEAKERS



Prof. Lelitha Devi Vanajakshi
Professor,
Dept. of Civil Engineering,
IIT Madras



Shri Anil Chikara
Ex Deputy Transport Commissioner,
Government of NCT Delhi



Dr. Thota Surya Kiran
Executive Director, Association of State
Road Transport Undertakings (ASTRU)



Shri Mudit Agarwal
CEO, Indian Highways Management
Company Ltd. (IHMCL)



Shri Gopalakrishnan VC
Director, Automotive & Electric
Mobility, Dept. of Industries & Commerce,
Govt. of Telangana



Dr. Jaya Shankar P.
Head of Division for ITS,
Institute for Infocomm Research,
A*Star - ITSSingapore



Prof. P.K. Sikdar
Former Director
CSIR-CRRI



Prof. P. Rajalakshmi
Project Director
NMICPS TIHAN-IITH



Richard WU
Vice President & CTO
FETC



Shri Narendra Nath Gangavarapu
Joint Secretary,
National Security Council
Secretariat, Government of India



Mr. Satheesh G.
Senior Director,
Centre for Development of
Advanced Computing (C-DAC)



Mr Debasish Debsikdar
Sr. VP & Enterprise Head - M&D,
JIO Platforms Limited

SPEAKERS



Mr. Venkata Subbarao Chunduru
Director
Arcadis IBI Group



Mr. Sanjeev Sehgal
Convenor - Video Surveillance
Committee on Indian Standards
at BIS and Founder & CEO, Sparsh CCTV



Mr. Senturan Karthikeyan
Director - Innovations
Datacorp Traffic Pvt. Ltd.



Mr. Rameesh Kailasam
President & CEO,
IndiaTech



Dr. Tarun Rambha
CiSTUP,
IISC Bangalore



Prof. Ganesh Ramakrishnan
Professor, IIT Bombay



Mr. Vijay Kumar T.A.
CEO - India
Norden Communication



Mr. Krishna Chaitanya Reddy
Head, Advanced Technology Dept.
AISIN



Mr. Nagaraj Sham Bhat
Technical Director,
Danlaw



Anand Shankar
Director - Planning & Advisory,
Datacorp Traffic



Mr. Keshav Karunakar
VP, Head, KPIT Academy



Saket Mohan
CEO, Secure Elements

SPEAKERS



Dr. Sarat Chandra Babu
Former Executive Director,
Society for Electronic Transactions
and Security (SETS)



Sachin Bhatia
CEO, Metro Infrasys



Mr. Akash Sinha
CEO, Tecsidel



Dr. Rajesh Krishnan
CEO, ITSPE



Mr. Jitendra Singh
Senior Director,
Govt. Affairs (India & South Asia),
Qualcomm



Mr. Santosh Sam Koshy
Scientist F,
Centre for Development of Advanced
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IIT Kharagpur



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Associate Professor,
BIT Pilani



Prof. Agnivesh Pani
Assistant Professor
IIT BHU



Prof. Gourab Sil
Assistant Professor,
Dept. of Civil Engineering,
IIT Indore



Prof. K Ramachandra Rao
Professor, Department of
Civil Engineering, IIT Delhi

SPEAKERS



Dr. N. Subramanian
Executive Director,
Society for Electronic Transactions
and Security (SETS)



Mr. Chaitanya Bavaraaju
CEO & Founder,
Segoauto



Dr. Ramesh Chandramajhi
Senior Scientist,
CSIR - CRI



Mr Rakesh Verma
Chairman & Managing Director,
Map my India



Shri Suresh Chandra
Sr. Director & Scientist 'G',
STQC Directorate, MeitY



Tajpal Mahajan
HoD Testbed, NATRAX



Dr. B.D. Paulson, IPS
ADGP,
Government of Uttar Pradesh



Mr. Jitendra Kaushik
Founder & CEO,
Onnyx Traffic Systems



Mr. Navendu Agarwal
Senior Vice President and
Head of Business, Krutrim



Mr. Vikas Narwal
Deputy Transport Controller,
Government of Haryana



Mr. Sainath Gurav
Founder, STHAAR Consulting



Nitin Kashyap
Product Head, Krutrim

SPEAKERS



Aastha Shreeharsh
Strategy & Operations Fellow,
Crashfree India



Dr. HimaBindu Maripini
Assistant Professor,
BITS Pilani



Mr. Rahul Sawardekar
Business Head,
Ador Powertron Ltd.



Er Kamal Pandey
VP - Sales & Projects,
Sparsh CCTV



Tushar Chhabra
Founder & CEO, CRON AI



Amit Kumar
Senior Director, Netradyne



Prof. Archak Mittal
Assistant Professor
IIT Bombay



Mr. Titas Roy
Industry Manager-Infrastructure
Geospatial World



Dr. Shiv Kumar
Director General,
ITS India



Mr. Akhilesh Srivastava
President
ITS India Forum



Prof. Digvijay Pawar
Associate Professor
IIT Hyderabad



Ms. Aishwarya Raman
Executive Director
OMI Foundation

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