ITS INDIA

DIGEST
APRIL & MAY 2025

SHAPING THE FUTURE OF MOBILITY IN INDIA

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EDITORS PEN

As India accelerates toward its vision of smart and sustainable mobility, one truth is becoming increasingly clear: the future of transport will be defined not by what we build, but by how we operate it. In a country that adds nearly 30 kilometres of highways daily and yet loses over 400 lives to road crashes every 24 hours, mobility must shift from an infrastructural ambition to an operational science.

Over the past few years, we've seen an explosion of technologies—and yet, the deployment of these tools has often remained fragmented or pilot-bound. The time has come to pivot decisively from experimentation to outcome-based ITS operations. That means integrating domain expertise into our daily traffic decisions, empowering cities to move from reactive fixes to predictive management.

India must champion this shift. We need to move beyond the conventional "build-first, manage-later" mindset. The reality is: a well-operated junction, powered by adaptive signal control and calibrated by real-time analytics, can be more effective than an overdesigned flyover. What we need now is a new cadre of mobility operators, traffic data scientists, and ITS engineers—people trained not to pour cement, but to decode patterns, manage signals, and optimize networks. Operations & Maintenance (O&M) must no longer be a postscript in infrastructure planning—it must be the script.

This edition of our Digest reflects that momentum. From the expansion of C-V2X green corridors to the rise of Safe Driving Scores and Road User Charging pilots, India's ITS ecosystem is maturing. But to scale these initiatives meaningfully, we must mainstream two essentials: domain-centric ITS operations and cross-sector collaboration.

Encouragingly, signs of this shift abound. The ITS India Forum's strategic engagements over April–May 2025 reflect this evolving maturity. India's induction into the ITS Asia-Pacific Forum, upcoming showcase at the ITS World Congress 2025 in Atlanta, and domestic breakthroughs in AI-driven traffic systems, Green Corridors, and Safe Driving Scores all point toward a bolder, more data-centric future. Collaborations with institutions like TiHAN–IIT Hyderabad and the OMI Foundation further signal a growing consensus that domain expertise, digital infrastructure, and cross-sector stewardship must anchor India's intelligent mobility ambitions.
We envision a future where every state has a live mobility command center, where public transport systems are optimized using digital twins, and where road safety is not a campaign but a quantifiable, accountable mission. That's not a distant dream—it's a responsibility we must embrace now.

Let's move from systems that simply exist, to systems that perform. Let's make mobility intelligence the true hallmark of modern India.
Srinivas Ganji

— Editor, ITS India Forum Digest

PRESIDENT'S MESSAGE

Dear Members, Partners, and Industry Leaders,

The months of April and May 2025 have been pivotal in accelerating India's transformation into an intelligent, inclusive, and globally connected mobility leader. As the ITS India Forum continues to lead from the front, this period has marked strategic progress across innovation, policy, partnerships, and deployment.

A historic milestone was achieved at the 20th ITS Asia-Pacific Forum in Suwon, South Korea, where ITS India was formally included in the prestigious **ITS Asia-Pacific Board of Members**. This inclusion is not merely symbolic—it empowers India to co-lead global dialogues, compete for international ITS projects, and collaborate with the global leaders in smart mobility innovation and policy harmonization.

Our global alliances have deepened further with the formation of the **Road Under Charging Alliance (RUC)**, and the ITS India Forum joining it alongside ITS Taiwan, Thailand, and ITS New Zealand. RUC is a visionary and forward-looking alliance that will enhance the development of next-generation road user charging mechanisms through policy recommendations.

Simultaneously, our academic partnership with TiHAN–IIT Hyderabad continues to thrive. From research on autonomous navigation and connected vehicles to collaborative efforts on Road User Charging (RUC) and AI-driven traffic platforms, this alliance is helping translate innovation into practical implementations. Our shared focus on developing technical standards, pilot frameworks, and executive education programs is connecting academic rigor with industry preparedness.

Domestically, the ITS India Forum played a crucial role in shaping discourse at major national events such as the International Conference on Smart Mobility Systems (ICSMS 2025) and the Ride Asia EV Expo 2025. Our contributions encompass C-V2X, V2X communication, and the integration of electric mobility, reaffirming our commitment to sustainable, digital-first transportation transformation.

At the policy level, we maintained thought leadership through initiatives such as the national ADAS-focused webinar, policy recommendations and our live demonstration of the Green Corridor powered by C-V2X at Mobility Expo 2025 and GRIS-2025. Meanwhile, the Dhaula Kuan Decongestion Project launch in Delhi NCR demonstrated our field-level focus on addressing critical urban mobility challenges using AI, simulation, and stakeholder-driven design.

Key Highlights – April–May 2025:

- The ITS India Forum induction into the ITS Asia-Pacific Board Members.
- Formation of the **Road Under Charging Alliance (RUC),** and the ITS India Forum joining it alongside ITS Taiwan, Thailand, and ITS New Zealand.
- Expansion of TiHAN–IIT Hyderabad partnership across autonomous and connected mobility.
- ADAS-focused policy recommendations on road safety and regulatory frameworks
- ITS India Forum actively supported and participated in International Conference on Smart Mobility 2025 organised by IETE.
- **The ITS India Forum family continues to expand with purpose and pride, underscoring the growing relevance of our mission to transform mobility in India**. We are delighted to welcome **Kataline** as the newest member.
- Two major industry leaders—**Reliance Jio and T-Systems** are also in the process of completing membership formalities. Their participation will further enrich our ecosystem of forward-thinking stakeholders driving the future of intelligent transportation in India and beyond.
- The ITS India Forum extends **membership selectively** to organisations that share our commitment to innovation, sustainability, and nation-building. We believe in building a **high-impact, collaborative community**, not recklessly expanding numbers, ensuring that every member adds strategic value to our shared vision.
- In the past two months, we have established four key Working Groups that include our industry members, academic members from IITs, and government-nominated members. These WGs focus on AI in Mobility, the National Architecture of ATMS, Blockchain in Mobility, and the Mobility Index of Cities.

Looking forward, our agenda stays focused on scaling India-specific ITS solutions, expanding policy advocacy, and leading globally. The upcoming 5th National Round Table on ATMS, Smart Traffic Dialogue, WG on Mobility for Women, and our participation in the ITS World Congress 2025 in Atlanta and the ITS India Congress in Kochi will be milestones on this journey.

Together, let us continue to lead with purpose, innovate with impact, and build a mobility ecosystem that is smart, safe, inclusive, and globally future-ready.

Warm regards,

Akhilesh Srivastava
President, ITS India Forum

POLICY UPDATES

1. National ITS Standards Framework Draft Released

The Ministry of Road Transport and Highways (MoRTH), in collaboration with NITI Aayog and the Bureau of Indian Standards (BIS), has released a draft framework outlining unified national standards for ITS components. This includes protocols for vehicle-to-infrastructure (V2I) communication, adaptive signal systems, AI-based surveillance, and interoperable traffic management technologies. The framework aims to standardize ITS implementations across the country, enhancing efficiency and safety in transportation.

2. Road User Charging (RUC) Policy Development

India is exploring Road User Charging mechanisms, including distance-based tolling and congestion pricing. The Ministry of Road Transport and Highways (MoRTH) and the Ministry of Finance have initiated consultations on a national policy framework for RUC. This approach aims to serve as an equitable model for infrastructure funding, congestion mitigation, and behavioral change.

3. Guidelines Proposed for Safe Urban Mobility Zones (SUMZ)

The Ministry of Housing and Urban Affairs (MoHUA) has issued draft guidelines encouraging the creation of Safe Urban Mobility Zones in major cities. These zones are designed to prioritize pedestrian movement, low-emission transport, and AI-enabled enforcement tools. The guidelines promote the deployment of ITS solutions such as adaptive signal controls, dynamic speed regulation, and geofenced safety alerts.

4. ITS Integration into National Logistics Portal (NLP-M)

To improve end-to-end freight movement and multimodal coordination, the Department for Promotion of Industry and Internal Trade (DPIIT) announced plans to integrate ITS capabilities—such as real-time vehicle tracking, route optimization, and predictive congestion analytics—into the National Logistics Portal – Multi Modal (NLP-M). This integration aims to enhance logistics efficiency and reduce costs.

5. AICTE Endorses Executive Education in Smart Mobility

In alignment with the National Education Policy (NEP) 2020, the All India Council for Technical Education (AICTE) has introduced new guidelines to support executive education programs in Intelligent Transport Systems, smart mobility, and transport analytics. These one-year postgraduate programs are expected to be launched in partnership with institutions like IIT Hyderabad and global universities, aiming to build future-ready talent for India's digital transport transition.

FEATURE ARTICLE

CP PLUS: Two Years of Indigenized Innovation, Trusted Security & National Impact (2023–2025)

In a time when safety is not just a need but an expectation, CP PLUS has emerged as the trusted sentinel of India's streets, temples, schools, homes, and borders. Over the past two years, the company has not merely grown, it has transformed the surveillance landscape with technology that is indigenized, intuitive, and impactful.

From remote Himalayan villages to the dense metros of India, from bustling pilgrimage routes to sensitive government sites, CP PLUS cameras watch not only with clarity but with purpose. And behind each lens is a story of innovation, leadership, and relentless commitment to a safer tomorrow.

A Decorated Journey: Award-Winning Leadership

CP PLUS's excellence has not gone unnoticed. In the past two years, the company has been honored with a constellation of prestigious awards that celebrate its contributions across technology, marketing, customer experience, and industry leadership.

In 2024, CP PLUS was crowned with the **Brand of the Decade** Award by BARD and Herald Global - an acknowledgment not merely of a brand's longevity, but of its unmatched relevance and resilience. That same year, the company bagged the **Product of the Year Award** at the FIST Awards by FSAI, recognizing CP PLUS as the gold standard in video surveillance systems.

From industry to channel, CP PLUS's strategic brilliance shone through. At SME Channel's 14th Channel Accelerator Awards, CP PLUS earned the titles of **Channel Marketer of the Year and Channel Favorite Product Award**. At the **ELETS India Brand Awards 2024**, CP PLUS took home both the **Long-Term Marketing Strategy Award** and the coveted **Brand of the Year Award**. Adding to the laurels, Outlook Business bestowed CP PLUS with the **Surveillance Brand of the Year Award 2024**, highlighting its leadership in shaping the future of smart surveillance.

The narrative of leadership reached a personal pinnacle when **Mr. Aditya Khemka**, the visionary behind the brand's meteoric rise, was honored with the **CX Leader of the Year Award 2025** by Exchange4Media, followed by the **Pioneer in Surveillance Industry Award** at the Viksit Delhi Summit 2025.

Further reaffirming CP PLUS's commitment to customer-first innovation, the brand was felicitated with the **CX Best Customer Experience Award 2025**, while inclusivity and gender equity earned a spotlight through the **Women Leadership Excellence Award 2025** by NCN. Most recently, NDTV Gadgets360 recognized CP PLUS as the **Best Smart Security Solutions Brand.**

Innovation Made in Bharat: The Rise of Indigenized Technology

Bharat is not merely a market for CP PLUS - it is the heartbeat of its innovation. Over the last two years, CP PLUS has accelerated its journey toward building a truly self-reliant surveillance ecosystem. This spirit of **Atmanirbharta** (self-reliance) is evident in its development of indigenized technologies like EVMS Pro, Smart Home Security Solutions, and AI-**InstaStream**.

The company further made headlines by being one of the first Indian brands to develop **Made-in-Bharat IP SoCs (System on Chips)**, placing India on the global semiconductor map for surveillance technology. CP PLUS's relentless pursuit of quality was validated with **STQC** and **BIS certifications**, and the company was proudly recognized as a **Great Place to Work**, proof that culture and innovation go hand-in-hand.

2025 also saw CP PLUS introducing **CTC (Content Trust Chain)** Technology, a revolutionary standard in surveillance data authentication that reinforces the integrity of video feeds across storage, transmission, and playback.

Product Leadership & Portfolio Expansion

CP PLUS continues to prove that its innovation pipeline is as diverse as the needs of its customers. Over the last two years, the company has rolled out products that stretch the boundaries of performance, accessibility, and sustainability.

The **Z44R Solar-Powered 4MP 4G Camera** became a landmark success story, winning over the rural market and channel community alike. With zero wiring, solar autonomy, and 4G connectivity, it enables surveillance where traditional infrastructure can't reach. The launch of the **CP PLUS IlluMax Series** added a new dimension to night-time security with **dual light technology**, delivering vivid full-color imagery in pitch darkness.

To meet the rising demand in mobility and automotive safety, CP PLUS ventured into **Dashcams** with its indigenous range of **CP PLUS CarKams**, offering real-time vehicular surveillance for both commercial and personal vehicles. The product lineup was further expanded to include **routers, monitors, interactive displays, and networking devices**, making CP PLUS a holistic provider of connected solutions.

The **STQC-certified portfolio** also expanded to cater to the growing requirements of government and institutional clients, while ensuring alignment with digital public infrastructure goals.

Strategic Deployments: Building the Backbone of Safe India

CP PLUS's presence in national security projects underscores the trust it commands at the highest levels of governance. Its deployments over the last two years span religious sites, transport terminals, smart cities, government institutions, and educational campuses, each a testament to the brand's engineering excellence and operational scale.

Among its most prestigious projects, the **Maha Kumbh 2025** stands tall. Managing surveillance for one of the world's largest human gatherings required a system that was not only intelligent but resilient and CP PLUS delivered. In **Ayodhya**, a city revered and renewed, CP PLUS was entrusted with the city-wide surveillance infrastructure, ensuring the safety of pilgrims and preserving the sanctity of the spiritual experience. Similar trust was echoed in the **Jagannath Temple, Puri**, where heritage sensitivity was balanced with high-end technology.

Delhi State Assembly Elections saw CP PLUS powering the surveillance backbone for secure and fair voting. And in Tamil Nadu, the **Kilambakkam Bus Terminal**, one of the largest in Asia, is now guarded by an extensive CP PLUS setup. In addition, CP PLUS solutions are actively protecting **thousands of government schools, police stations, smart classrooms, and housing societies**, from Bhutani to DLF, from metro hubs to remote zones.

Industry Presence: The Brand Everyone's Watching

The last two years witnessed CP PLUS making headline appearances at **every major exhibition and summit** in India's security and fire safety space. From **IFSEC India** to the **Smart Home Expo**, from the **Rail Infra Summit** to **Fire & Security India Expo (FSIE)**, CP PLUS has led conversations and showcased solutions that redefine surveillance excellence.

Its presence wasn't confined to booths and stages, CP PLUS has also been an active participant and voice in key industry bodies like **FICCI, ASSOCHAM, CII, ELCINA, FSAI**, and others - contributing to policy development, standard-setting, and future-ready technology discussions.

The Road Ahead: A Safer, Smarter Bharat

As India's digital infrastructure grows and the lines between physical and digital security blur, CP PLUS is poised to play an even greater role. Whether it's securing national borders or neighborhood homes, CP PLUS solutions are built to adapt, scale, and evolve. Backed by visionary leadership, a dedicated workforce, indigenized manufacturing, and a rich channel ecosystem, CP PLUS stands not just as a brand but as a mission.

A mission to secure lives.
A mission to empower law enforcement.
A mission to build the surveillance backbone of Viksit Bharat.

CP PLUS is not just watching over India, it is helping shape its future.

COLUMN BY VENKATA SUBBA RAO CHUNDURU

“Mission Zero: A National Dharma for Safer Roads”

By Venkata Subba Rao Chunduru
India’s roads are in crisis. Over 180,000 people perish every year on our highways, city streets, and rural roads. We cannot normalize these numbers any longer. We need to act—and act urgently, boldly, and collectively.
The time has come for a renewed National Road Safety Mission, not as a fragmented programme, but as a unified and structured National Movement for Zero Fatalities—anchored in Domain Expertise, powered by Technology, and scaled through strategic Collaboration.

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“India must build a dedicated Road Safety Force—a national cadre of professionals trained in traffic engineering, crash investigation, trauma analysis, human behaviour, and enforcement strategy and operations”

Safety must be treated as a science, not a slogan. Keeping in view the long term perspective of the mission and also to create a definitive employment prospect, India must build a dedicated Road Safety Force—a national cadre of professionals trained in traffic engineering, crash investigation, trauma analysis, human behaviour, and enforcement strategy and operations.

This cadre should be created through strategic partnerships with academic institutions IIT’s Local/ Regional Colleges, ITI’s, and centers of excellence. These institutions can serve as regional hubs for knowledge, helping build localized expertise, conduct periodic audits, and offer technical support to states and urban local bodies.

Infrastructure projects must also integrate safety as a core parameter—through mandatory risk assessments, life-cycle safety planning, and crash prediction analytics.

2. Technology: A Digital Public Infrastructure for Road Safety

Technology must become the central nervous system of the Road Safety Mission. We need to build a National Digital Public Infrastructure (DPI) Stack for Road Safety, in collaboration with the Ministry of Electronics and Information Technology, modeled on India’s success with UPI and CoWIN.

This stack should integrate all systems associated with

- Vehicles (VAHAN),
- Drivers (SARATHI),
- Travellers Information Systems
- Highway Operators & associated systems
- Mobility service providers
- ITS Solution Providers

> "Technology must become the central nervous system of the Road Safety Mission. We need to build a National Digital Public Infrastructure (DPI) Stack for Road Safety"

This unified framework must serve as the backbone for:

- Real-time performance tracking,
- Stakeholder accountability, and
- Data-driven decision support at all levels

ITS applications must now shift from pilot projects to systemic deployments—AI-based enforcement, adaptive signals, blackspot analytics, geo-fencing of high-risk zones, and predictive alerting must become standard elements in every state and city safety plan.

India's National Road Safety Command Centre, supported by interoperable city- and state-level hubs, should serve as the live dashboard for monitoring mission progress, enforcement outcomes, and emergency responsiveness.

3. Collaboration: The Architecture of a Unified National Effort

The Road Safety Mission must bring together a wide coalition of actors under a central guiding framework, with shared responsibilities and co-created strategies.

- The Ministry of Road Transport and Highways (MoRTH) must lead the mission with policy, funding, and national coordination.

- The Ministry of Health must co-anchor the initiative with a dual focus on prevention and post-crash trauma care, expanding the Golden Hour response network.

- The Ministry of Electronics and IT (MeitY) must drive the digital safety infrastructure, ensuring integration with India Stack and DPI frameworks.

- NGOs and civil society organisations play a vital role in community-level awareness, behavior change, and victim support.

- Global institutions like the International Road Federation (IRF) and UN Road Safety Fund can provide continued guidance, knowledge transfer, and peer benchmarking.

- Academic institutions must serve as technical mentors to local governments—supporting audits, simulations, training, and evaluation.

- The private sector should be empowered to bring in financial innovation, fleet modernization, telematics, and operational efficiency.

All stakeholders must be tied together by a Mission Operating Framework, with performance-based incentives, transparent KPIs, and a system of regular public reporting to ensure trust and accountability.

Zero Fatalities is a Moral Imperative and a Civilizational Commitment

India, the land of Dharma, must reaffirm its commitment to the sanctity of life. Road safety must reflect this principle in word, will, and action.

Let us commit to Mission Zero not as a campaign, but as a National Dharma.

Let us build it on the three unwavering pillars—Sound Work Force, Technology, and Collaboration.

Let every citizen, agency, and government feel the moral urgency to act. Because in a truly civil society, no life should be lost on the road to progress.

ITS INDIA FORUM RECENT NEWS

ITS India Forum Signs Landmark MoU with OMI Foundation to Drive Inclusive and Sustainable Mobility

On April 11, 2025, the ITS India Forum entered into a landmark strategic partnership with the OMI Foundation Trust through a formal Memorandum of Understanding (MoU) signed in Delhi. The collaboration aims to advance India's leadership in sustainable, inclusive, and technology-driven mobility transitions.

OMI Foundation is a prominent non-profit think tank focused on developing public-good frameworks at the intersection of innovation, clean mobility, and social equity. This collaboration reflects a shared commitment to support the Government of India's Viksit Bharat@2047 vision through cutting-edge research, policy development, and real-world deployments.

Under the scope of the MoU, the two organizations will jointly pursue initiatives across key thematic pillars:

- **Future-Ready Mobility Systems:** Including advanced air mobility (AAM), drone corridors, Mobility as a Service (MaaS), AI- and IoT-enabled platforms, and blockchain-based mobility governance.

- **Clean Energy and EV Ecosystem Development:** Facilitating national and state-level roadmaps for EV adoption, wireless and pantograph charging systems, energy storage integration, and bidirectional charging infrastructure for grid resilience.

- **Circular Economy and Battery Lifecycle Management:** Promoting policy innovation in battery recycling, second-life applications, and extended producer responsibility frameworks to ensure sustainable value chains.

- **Gender and Accessibility Inclusion:** Designing inclusive infrastructure and policies to increase women's participation across the mobility value chain, while ensuring accessibility for elderly citizens, people with disabilities, and other underserved groups.

- **AI-Powered Decision Support Systems:** Developing AI-based frameworks for sustainable logistics, decongestion strategies, road safety, and mobility resilience planning.

In addition to research and advocacy, the partnership will focus on co-developing technical standards, hosting national roundtables, creating capacity-building programs, and providing technical advisory support to government agencies.
Speaking on the occasion, **Dr. Shiv Kumar**, Director General of ITS India Forum, said:

"This partnership is an important step toward mainstreaming innovation and inclusivity in India's mobility systems. Together with OMI Foundation, we aim to design forward-looking frameworks that shape smarter, cleaner, and more equitable transport futures."

This MoU further cements ITS India Forum's role as a national convener in shaping India's intelligent transport landscape and brings an added focus on intersectional, people-centric mobility transformation.

INDIA'S ITS MARKET

India's ITS Market: Accelerating Toward an Intelligent, Connected Future

India's Intelligent Transportation System (ITS) market is entering a phase of exponential growth—fuelled by policy alignment, digital infrastructure rollout, and high-impact deployments across key urban corridors. According to the 2023–24 industry estimates, India's ITS market was valued at ₹1,793.75 crore (USD 215 million), with projections to surpass ₹18,000 crore (USD 2.2 billion) by 2030. The market is expected to grow at a CAGR of 14.79% from 2024 to 2047, with Advanced Traffic Management Systems (ATMS) remaining the dominant segment, accounting for over 36% of total market share.

This growth is underpinned by India's urgent need to modernize mobility systems in over 100 Smart Cities and manage traffic across 63 million registered commercial vehicles and over 300 million registered private vehicles as of 2023.

Key Growth Drivers:

- Nationwide deployment of AI-powered adaptive traffic signal systems across over 100 urban centers, aiming to reduce travel time by up to 25% and signal waiting time by 40%.
- Expansion of Cellular Vehicle-to-Everything (C-V2X) pilot programs in more than 10 cities, with Green Corridors and ambulance prioritization trials showing a 35% reduction in emergency response times.
- Integration of ITS solutions into public EV fleets and Bus Rapid Transit Systems (BRTS), targeting a modal shift toward cleaner, data-driven urban transit.
- Public-Private Partnerships (PPP) contributing to over 42% of new ITS installations, involving Indian OEMs, global tech firms, and startup-led innovation hubs.

Core Technologies Reshaping the Market

1. Advanced Traffic Management Systems (ATMS):

- Real-time traffic signal control, automatic incident detection, congestion heat-mapping, and adaptive flow modeling are operational in over 30 tier-1 cities.

- Cities like Pune, Chennai, and Bengaluru have integrated ATMS with public transport and ICCCs (Integrated Command & Control Centers).

2. Cellular Vehicle-to-Everything (C-V2X):

- C-V2X enables vehicle-to-infrastructure (V2I) and vehicle-to-vehicle (V2V) communications.

- Green Corridor demonstrations in Delhi NCR and Hyderabad have shown a 20–40% improvement in corridor efficiency for emergency vehicles.

3. Cloud + AI-Driven Control Centers:

- ICCCs in cities like Bhopal, Surat, and Chandigarh use AI and cloud platforms to manage urban mobility in real time.

- Predictive analytics now enable authorities to forecast peak traffic loads, manage diversions, and issue automated violation notices using integrated camera networks.

4. IoT Sensors, Surveillance & Enforcement:

- Over 150,000 high-resolution traffic and surveillance cameras are deployed across India's metro areas.

- Use cases include ANPR (Automatic Number Plate Recognition), red-light jumping detection, vehicle classification, weigh-in-motion, and pavement monitoring

India ITS Market Snapshot (2023–2047 Projection)

Metric	Value / Status
Market Size (2023)	₹1,793.75 crore
Dominant Segment	Advanced Traffic Management Systems (ATMS)
Fastest Growing Segment	Vehicle-to-Everything (V2X) Systems
CAGR (2024–2047)	14.79%
Forecasted Market Size (2047)	₹50,000+ crore (projected)

Top ITS States in India

India's vision for smart, safe, and sustainable mobility is being shaped by states that have embraced Intelligent Transportation Systems (ITS) not just as a policy objective but as an operational priority. These top states— Delhi, Maharashtra and Tamil Nadu — stand out for their scale of deployment, use of emerging technologies, integrated command systems, and commitment to ITS innovation.

Delhi

Delhi stands among the top Intelligent Transportation System (ITS) adopters in India, recognized for its **comprehensive, AI-integrated urban mobility infrastructure**. As of 2023, Delhi leads in **automated enforcement, multimodal transit digitization, and expressway ITS,** positioning itself as a **national benchmark** for smart urban mobility.

The city's ITS success is rooted in large-scale deployments such as **AI-based ITMS at 500+ junctions, real-time public transport tracking**, and **NCMC-based fare systems** integrated across Metro and bus networks. Delhi's strategic location within the NCR and its administrative importance have accelerated multi-agency collaboration on ITS planning and execution.

Key Highlights:

- **Delhi Traffic Police** and **Transport Department** operate **AI-powered ITMS** with integrated ANPR, RLVD, and speed enforcement, generating automated e-challans via a central control system.
- **Delhi Metro Rail Corporation (DMRC)** has deployed **CBTC, PIDS**, and **NCMC-enabled ticketing**, making it one of the most ITS-equipped metro systems in India.
- **Eastern Peripheral Expressway (EPE)** features **ATMS**, real-time monitoring, and **C-V2X-based emergency vehicle prioritization**, enhancing highway safety and flow.
- **NDMC's Smart Parking Zones** in Connaught Place and other areas leverage **IoT sensors**, digital signboards, and app-based payments for demand-responsive parking.
- The **"One Delhi" App** integrates bus tracking, route planning, and NCMC recharge tools, improving commuter convenience across transport modes.

Snapshot Analysis Table – Delhi (2023)

Metric	Value/Status
Major Cities with ITS	New Delhi, South Delhi, West Delhi, Dwarka, Rohini
Dominant ITS Technologies	AI-based ITMS, NCMC, CBTC, ATMS, ANPR, RLVD
Key Agencies Involved	Delhi Traffic Police, Delhi Transport Dept., DMRC, NDMC, NCRTC
ITS Segments Covered	Traffic enforcement, multimodal fare integration, expressway ITS, smart parking
Flagship Corridors	Ring Road, Eastern Peripheral Expressway, Delhi–Meerut RRTS
Smart City ITS Integration	Yes – ICCCs operational under Delhi Police & NDMC with full transport linkage

Maharashtra

Maharashtra holds the top position in India's ITS landscape, commanding the highest market share of 16.22% as of 2023. This leadership is the result of robust investments in ATMS, V2X trials, toll automation, and cloud-based surveillance systems implemented across metropolitan cities and expressways.

The state's two major cities—Mumbai and Pune—have emerged as live laboratories for AI-driven traffic control, integrated command centers, and highway ITS innovation.

Key Highlights:

- Mumbai has deployed over 5,000 CCTV cameras integrated with AI for red light, speed, and lane violation detection, linked to a central Integrated Traffic Management System (ITMS).

- The Mumbai–Pune Expressway has implemented real-time highway surveillance, variable message signs (VMS), and C-V2X-based ambulance prioritization pilots.

- Pune Smart City uses an ATMS platform for traffic signal optimization, supported by live feeds from public transport GPS and CCTV networks.

- Maharashtra State Road Development Corporation (MSRDC) and MMRDA have collaborated on large-scale electronic toll collection, road user charging pilots, and camera-based enforcement platforms.

Snapshot Analysis Table – Maharashtra (2023)

Metric	Value/Status
National ITS Market Share	16.22%
Major Cities with ITS	Mumbai, Pune, Nagpur
Dominant ITS Technologies	ATMS, C-V2X, e-Toll, AI Surveillance
Key Agencies Involved	MSRDC, MMRDA, Pune Smart City Ltd.
ITS Segments Covered	Traffic enforcement, expressway surveillance, urban ATMS
Flagship Corridors	Mumbai–Pune Expressway, Eastern Express Highway, Metro links
Smart City ITS Integration	Yes – multiple ICCCs and command centers across cities

Tamil Nadu

Tamil Nadu has emerged as a national leader in urban ITS innovation, particularly through its capital city, Chennai. The state's strategic focus on artificial intelligence, public transport integration, and real-time traffic analytics has positioned it at the forefront of intelligent urban mobility.

With strong policy backing and smart city investments, Tamil Nadu has built a robust digital infrastructure that supports not only traffic regulation and enforcement but also integrated emergency response, transport operations, and citizen services.

Key Highlights:

- Chennai operates one of India's most advanced adaptive traffic signal systems, covering over 200 junctions and powered by AI to adjust real-time flow and congestion levels.

- The Greater Chennai Traffic Police and Corporation jointly manage an Integrated Command & Control Centre (ICCC) that oversees traffic surveillance, red-light violation detection, and disaster response coordination.

- ITS components in Chennai Metro and MTC buses include GPS-enabled vehicle tracking, smart ticketing, and multimodal journey planning tools.

- Coimbatore, Madurai, and Trichy have implemented smart traffic junctions, vehicle classification systems, and pilot AVLS (Automatic Vehicle Location System) in city buses.

Snapshot Analysis Table – Tamil Nadu (2023)

Metric	Value/Status
Major Cities with ITS	Chennai, Coimbatore, Madurai, Trichy
Dominant ITS Technologies	AI-based ATMS, AVLS, ICCC, V2X Pilots
Key Agencies Involved	Greater Chennai Corporation, CUMTA, TN Smart City Mission
ITS Segments Covered	Urban mobility, public transport, traffic enforcement
Smart City ITS Integration	Yes – ICCC + AI traffic + transport data fusion
Public Transit Integration	MTC, Metro Rail, EVs via GPS & smart ticketing

LATEST ITS PROJECTS WATCH

Green Corridor Expansion Initiative Launched in Bengaluru to Strengthen Emergency Response Infrastructure

Bengaluru, April 2025 — Building on the successful demonstration of the Green Corridor for Emergency Vehicles at GRIS 2025, the ITS India Forum has launched a major city-level expansion of the project in Bengaluru. The initiative aims to deploy real-time signal prioritization technology across critical emergency routes in the city to significantly reduce ambulance response time and improve public safety.

The Green Corridor system, based on Cellular Vehicle-to-Everything (C-V2X) technology, enables dynamic communication between emergency vehicles and traffic signal infrastructure. When an ambulance equipped with an onboard unit (OBU) approaches an intersection, it transmits a signal to the nearest roadside unit (RSU), prompting the traffic light to switch to green and allow uninterrupted passage. This process is centrally coordinated through an integrated command center that tracks vehicle movement and manages signal behavior in real time.

Bengaluru was selected as the first full-scale deployment site due to its high population density, complex road networks, and critical need for emergency response optimization. The initial phase will cover 30 high-priority intersections along key arterial corridors including Bannerghatta Road, Old Airport Road, and the Outer Ring Road. Over the next 12 months, the system is expected to be scaled to more than 100 intersections in collaboration with the city's traffic police, BBMP, and the state health department.

Key features of the Bengaluru expansion include:

- End-to-end C-V2X integration between ambulances, RSUs, and the city's traffic management center
- Real-time tracking of emergency vehicles with ETA prediction and route optimization
- Adaptive signal control algorithms for minimal disruption to regular traffic
- Integration with the city's Urban Transport Management System (UTMS) and Disaster Response Framework

The project is being implemented with support from leading technology partners and civic authorities. It is also aligned with Karnataka's Smart Mobility and Urban Health Mission, and contributes to India's broader Vision Zero goals for road safety.

Commenting on the launch, Mr. Akhilesh Srivastava, President of ITS India Forum, said:
"The Green Corridor expansion in Bengaluru is a transformational step toward intelligent emergency mobility. Our aim is to create a replicable and scalable model that can save lives and bring digital precision to traffic governance in Indian cities."

With this rollout, Bengaluru becomes the first Indian city to integrate AI-powered signal preemption and C-V2X-based emergency management into its urban infrastructure. ITS India Forum plans to replicate the model in other Tier-1 cities including Pune, Hyderabad, and Chennai later this year.

Road User Charging (RUC) Pilot Framework Developed to Support Sustainable Mobility & Infrastructure Financing

New Delhi, April 2025 — In a pioneering move to modernize transport financing and promote equitable road usage, the ITS India Forum has developed a national-level pilot framework for Road User Charging (RUC). This initiative marks a major step forward in India's efforts to transition from traditional tolling models toward a smarter, usage-based mobility pricing system.

The RUC framework is designed to support efficient, transparent, and technology-driven road charging mechanisms that can replace or complement fixed toll infrastructure. It allows authorities to charge vehicle users based on distance traveled, time of day, road category, vehicle class, and emission levels — paving the way for a dynamic pricing model that aligns with principles of fairness, sustainability, and congestion management.

Key Features of the RUC Pilot Framework:

- Distance-based pricing using GPS and telematics devices
- Tiered pricing by vehicle category, fuel type, and emission compliance (e.g., BS-VI, EVs)
- Integration with national FASTag infrastructure and V2X systems
- AI-based fraud detection and enforcement via digital license plate recognition
- Real-time billing and user notifications through mobile apps and connected dashboards

The pilot framework has been developed in collaboration with global ITS experts, transport economists, and technology providers, and aligns with global best practices from Europe, New Zealand, and the Asia-Pacific Road User Charging Alliance (APRuCA), of which India is now an active member.

Strategic Objectives

The RUC framework is designed not only to improve road revenue models but also to reduce traffic congestion, encourage off-peak travel, and promote the adoption of cleaner vehicles. It is expected to play a vital role in funding the maintenance of India's rapidly expanding road infrastructure while supporting goals under the National Logistics Policy, Vision Zero, and the Net Zero Emissions Target.

Next Steps

The pilot framework will be presented to key government stakeholders including NITI Aayog, MoRTH, and state transport departments in mid-2025. Field trials in selected urban and interurban corridors are being planned for Q4 2025, starting with high-density freight and urban congestion zones in Delhi NCR, Pune, and Bengaluru.

The ITS India Forum will also release a technical whitepaper outlining policy recommendations, pricing models, privacy safeguards, and user feedback mechanisms to support national implementation of RUC systems in the years ahead.

Dhaula Kuan Decongestion Project Initiated by ITS India Forum to Alleviate Traffic Gridlock in Delhi NCR

New Delhi, April 2025 — The ITS India Forum has launched the Dhaula Kuan Decongestion Project, a flagship urban mobility initiative aimed at resolving one of the most persistent traffic bottlenecks in the National Capital Region (NCR). This strategic project is part of the Forum's broader mission to transform India's high-density corridors into smarter, safer, and more efficient transport ecosystems using intelligent transport systems (ITS).

Dhaula Kuan, a key interchange point connecting Central Delhi to South Delhi and Gurgaon via NH-48, experiences peak-hour congestion with traffic volumes exceeding 400,000 vehicles daily. Despite multiple infrastructure enhancements over the years, the corridor continues to face long queues, erratic travel times, and critical safety hazards due to uncontrolled merging, uneven lane distribution, and insufficient pedestrian management.

Project Overview

The decongestion project, initiated in March 2025, focuses on developing a data-driven, multi-layered traffic management strategy that leverages artificial intelligence, digital twin simulation, and stakeholder coordination. The goal is to design implementable short-, medium-, and long-term interventions that can optimize traffic flow, enhance commuter safety, and improve road capacity without large-scale structural overhauls.

Key Objectives:

- Conduct real-time traffic mapping using AI-enabled camera networks and drone analytics
- Identify geometric and behavioral bottlenecks at intersections, merges, and exit ramps
- Simulate dynamic traffic scenarios using digital twin modeling to forecast interventions
- Recommend short-term actions such as adaptive signal timing, lane reallocation, and signage upgrades
- Propose long-term structural redesigns including pedestrian overpasses and corridor-wide flow separation

The project is being carried out in partnership with CRRI, IIT Delhi, and the Delhi Traffic Police, with technical support from global ITS solution providers. Public input is also being gathered through commuter surveys and on-ground observation teams.

Strategic Significance

This initiative marks a major shift in India's urban transport planning—moving away from reactive infrastructure expansion toward predictive and intelligent congestion management. It also supports the goals of the National Urban Mobility Policy (NUMP), Vision Zero for road safety, and the Delhi Master Plan 2041.

Next Steps

The initial findings and simulation models are expected to be presented by Q3 2025, followed by implementation of pilot interventions. The ITS India Forum also plans to publish a case study of the project to guide similar decongestion efforts in Tier-1 and Tier-2 cities across India.

Safe Driving Score Pilot Rolled Out for Fleet Operators to Improve Road Safety and Driving Standards

New Delhi, April 2025 — As part of its ongoing mission to enhance road safety through data-driven innovation, the ITS India Forum has launched a nationwide pilot of the Safe Driving Score (SDS) system, targeted specifically at fleet operators in the commercial transport sector. This initiative introduces a behavior-based driver rating system aimed at promoting responsible driving, reducing accidents, and supporting insurance, compliance, and fleet performance evaluation.

The Safe Driving Score is a dynamic metric calculated using real-time telematics and sensor data collected from vehicles. It analyzes parameters such as acceleration, braking patterns, speed compliance, cornering behavior, idling time, and adherence to traffic signals. The score is updated continuously and presented through a user-friendly dashboard accessible to both fleet managers and drivers.

Key Features of the SDS Pilot:

- AI-powered scoring algorithm based on over 20 behavioral parameters
- Telematics integration via on-board diagnostic (OBD) devices and fleet GPS trackers
- Individual and fleet-level performance reports for risk profiling
- In-app driver feedback, scoring history, and safety tips
- Data-sharing interface for insurers and regulatory authorities

Pilot Implementation

The SDS pilot has been rolled out across a select group of logistics companies, ride-hailing fleets, and public transport operators in Delhi NCR, Mumbai, and Bengaluru. Participating fleet operators receive access to the scoring platform and analytics tools, along with training modules to help drivers understand and improve their performance.

Strategic Objectives

The pilot aims to:

- Encourage safer, more fuel-efficient driving behavior across India's fleet ecosystem
- Create data-backed safety profiles to support fleet licensing and insurance underwriting
- Establish benchmarks and industry-wide standards for driver assessment
- Reduce accident rates, vehicle downtime, and operational costs

The SDS system is aligned with India's National Road Safety Strategy, Vision Zero, and the Digital Mobility Framework. It also supports the objectives of the Motor Vehicles (Amendment) Act, 2019 by promoting responsible driving through non-monetary incentives and accountability.

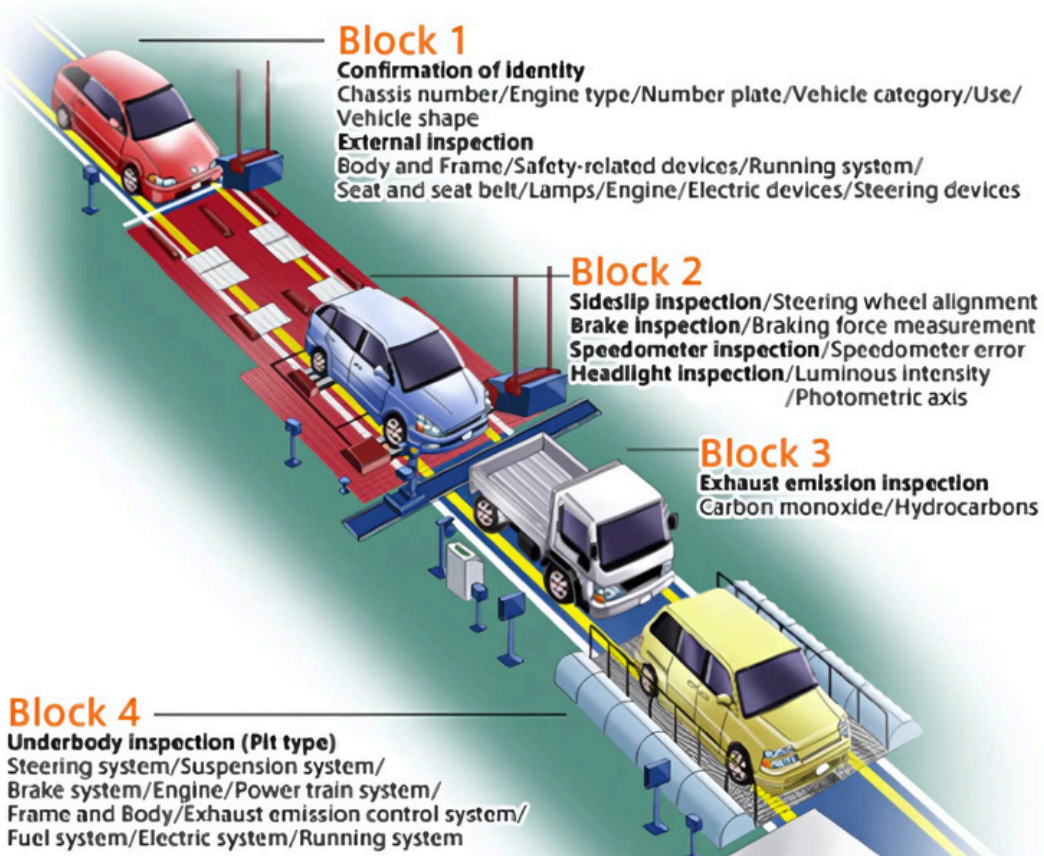
Future Roadmap

Based on results from the initial pilot phase, ITS India Forum plans to scale the program nationally by 2026. Plans are also underway to integrate the SDS with national driver databases, insurance portals, and vehicle compliance systems to establish a unified driver reputation index for the country.

COLUMN BY ANIL CHHIKARA JI

Indian Road Accidents: Background, Causes, and the Role of Automated Vehicle Testing

- **Introduction:** India's expanding road network and increasing motorization have brought with them an unintended consequence — a dramatic rise in road accidents. Despite a growing economy and infrastructure investments, the country continues to account for the highest number of road accident fatalities globally. The Government of India has recognized road safety as a major concern and introduced numerous interventions over the decades. Still, the sheer scale and complexity of the issue necessitate deeper structural reforms. This summary explores the background of road accidents in India, identifies key causes — particularly focusing on poor vehicle maintenance — and evaluates how automated vehicle testing (AVT) or ATS (Automated Testing Stations) could revolutionize safety standards

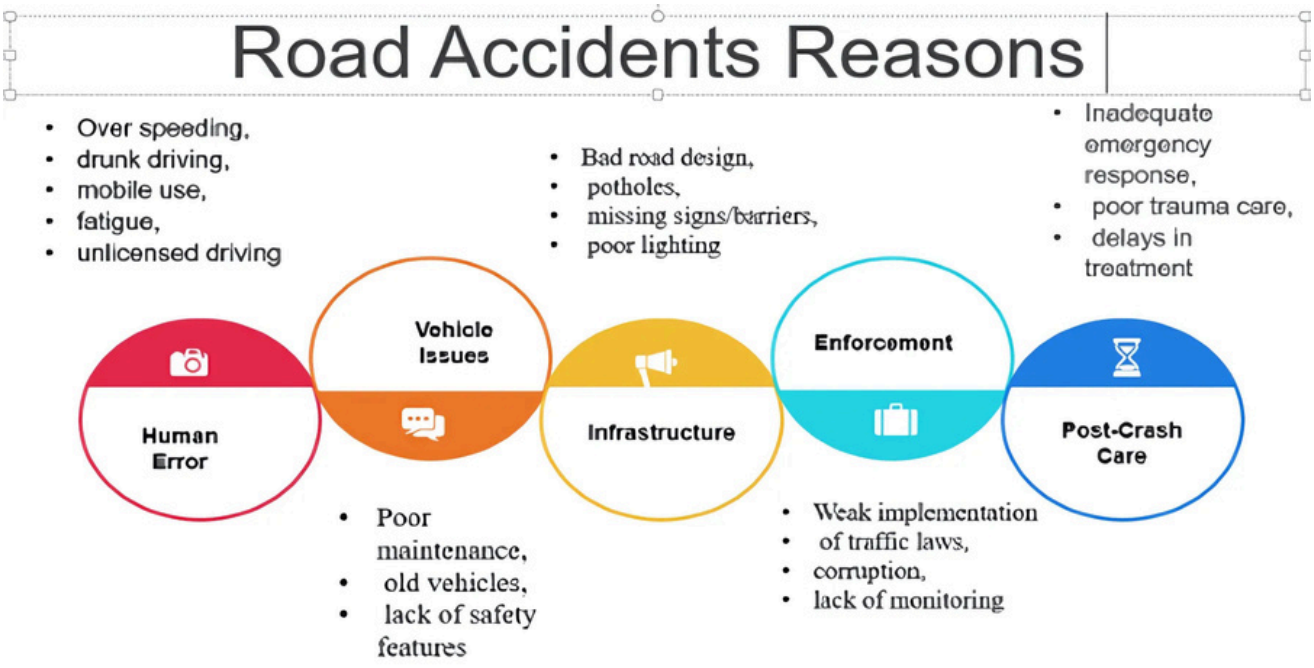


- **Background of Indian Road Accidents** India's motorization began accelerating in the post-liberalization era of the 1990s. As consumer incomes rose and vehicle finance became widely accessible, motor vehicle ownership surged. However, this boom outpaced the growth and modernization of road infrastructure, law enforcement, driver education, and vehicle inspection mechanisms. India now sees over 1.78 lakh (2023) fatalities every year due to road accidents, with more than 5.0 lakh people sustaining injuries annually.

  India's road network is vast, but not all of it is well-maintained or designed for high-speed motorized traffic. A significant portion of road crashes occur on National Highways and State Highways, which carry more than 60% of traffic but represent only around 5% of total road length. Despite the launch of the National Road Safety Policy and road safety audits, implementation on the ground remains patchy. In addition, insufficient coordination between multiple ministries such as transport, health, education, and law enforcement further dilutes the impact of road safety initiatives.

- **Human and Economic Cost of Accidents** Beyond the immediate physical harm, road accidents exert a tremendous socio-economic cost on India. The World Bank estimates that road crashes cost India roughly 3-5% of its GDP annually. A significant number of fatalities involve men aged 18–45, the most economically productive segment of the population. Many victims are pedestrians, cyclists, and motorcyclists, often from economically weaker sections. The economic burden extends to households, pushing families into poverty due to loss of livelihood and out-of-pocket medical expenses. Public healthcare systems bear the load of emergency trauma care, while insurance systems are stretched thin.

- **Causes of Road Accidents** in India The root causes of road accidents in India are multifactorial. These include human error, poor road design, inadequate enforcement, environmental conditions, and importantly, poor vehicle maintenance.



- Human Error: Driver behavior is a major cause of accidents. Speeding, distracted driving, aggressive overtaking, alcohol/drug impairment, and lack of formal driver education result in preventable crashes. In many regions, the licensing system remains weak, with reports of licenses being issued without rigorous testing.

- Road Infrastructure: Inadequate signage, potholes, blind curves, poorly lit roads, and lack of pedestrian crossings exacerbate risks. Intersections and median gaps often remain unprotected or unmarked, increasing collision potential.

- Vehicle Condition: Mechanical failures such as brake malfunction, tire bursts, steering issues, and light/wiper failure contribute significantly to road mishaps. Poor maintenance due to financial constraints, lack of awareness, or negligent practices, especially among commercial vehicle operators, puts road users at risk.

- Institutional Factors: A fragmented and under-regulated vehicle inspection system has allowed unfit vehicles to operate unchecked. Regional Transport Offices (RTOs) often lack modern testing facilities and are known to be vulnerable to corruption, undermining the fitness certification process.

- Poor Vehicle Maintenance: A Silent Killer While much emphasis is placed on behavioral and infrastructural causes, vehicle condition receives relatively little public attention. Poorly maintained vehicles often function as ticking time bombs on the roads. Faulty brakes, worn-out tires, defective steering systems, and suboptimal headlights can turn routine drives into fatal journeys.

  According to government data, nearly 8,500 accidents in 2022 were officially attributed to mechanical failures. However, experts believe this is an underestimation due to inadequate crash investigation practices in India.

  Commercial vehicles are especially vulnerable. To reduce operating costs, many fleet owners delay or skip maintenance routines. Overloaded trucks, aged buses, and poorly serviced autos form a large part of India's transport fleet. These vehicles frequently pass through fitness checks without proper inspection, either due to collusion or lack of technical capacity.

- **Global Comparison and Lessons for India:** In countries like Japan, Germany, the UK, and the US, vehicle maintenance is tightly regulated. Japan mandates a 'Shaken' test every two years. The UK's MOT system ensures all vehicles over three years old are annually inspected. Germany's TÜV certification process involves rigorous testing of vehicle roadworthiness.

  These countries emphasize mandatory periodic checks and integrate them with insurance and registration systems. Non-compliance leads to vehicle deregistration and heavy penalties. India, despite having similar rules under the CMVR, struggles with enforcement and lacks the infrastructure for widespread inspection.

- **The Concept of Automated Vehicle Testing (AVT):** Automated Vehicle Testing is a technology-driven approach to inspect vehicle fitness and driving proficiency. AVT facilities use sensors, AI, IoT devices, and digital systems to objectively assess a vehicle's mechanical condition and a driver's ability to safely operate a vehicle.

  AVT offers solutions to long-standing challenges in India's vehicle inspection and driver testing regime:

  - Eliminates human bias and corruption
  - Ensures transparency through audit trails
  - Offers consistent and replicable testing conditions
  - Generates digital records for future reference
  - Enhances testing capacity significantly

1	Brake Test	System checks the vehicle Brake pre loads, out of run , Brake force distribution and fail safe brake with software algorithm Important for safety to avoid collision and braking without skidding.
2	Noise Test	It will give an indication about the health of the engine and exhaust performance.
3	Speed Test	Will give a recording about maximum speed and speed limiter performance the vehicle noise , vibration and harshness at the maximum throttle .
4	Side slip test	It will provide the conditions of wheel stability and early tyre wear problem & steering geometry / wheel alignments.
5	Emission test	Compliance of Rule and unburned fuel in exhaust gases and engine rpm stability.
6	Joint Play	It provides the wear – tear indication of steering system as a whole. - Most important safety test for hilly condition.
7	Suspension Test	It gives an idea that how the surface contact remains with road top layer and damping at uneven roads which is most important for safety and comfort.
8	Head Lamp test	It gives an idea that how the Head Lamp Beam pattern spreaded on the road and not dazzle to on coming vehicles.
9	Visual checks	It gives an idea about the visual deterioration of vehicle for safety, CNG safety , appearance and compliance of regulation.

- **Significance of AVT in Indian Context:** Given India's high accident rate, improving the quality and reliability of vehicle fitness checks is vital. Automated testing helps identify unfit vehicles before they enter the roads. With digitized test results, authorities can track fitness compliance and link it to registration databases.

  Driver testing also benefits. Current manual driving tests are often symbolic and lack rigor. Automated test tracks evaluate acceleration, braking, lane-changing, reverse parking, and emergency maneuvering through controlled conditions, ensuring only competent drivers receive licenses.

- **Benefits of AVT**

    - Road Safety: AVT ensures unfit vehicles are removed from circulation, reducing mechanical-failure-related accidents. Better-trained drivers also contribute to safer roads.

    - Environmental Impact: AVT centers can be integrated with pollution checks, helping monitor and reduce vehicular emissions, especially in urban areas.

    - Administrative Efficiency: Digital platforms simplify recordkeeping and improve regulatory compliance. Real-time dashboards allow transport departments to monitor statewide testing outcomes.

    - Economic Advantages: Reduced accidents lead to lower insurance claims, less healthcare spending, and fewer disruptions in logistics and commuting.

- **Implementation Status in India:** India has started implementing AVT pilots in states like Delhi, Maharashtra, Karnataka, and Assam. The Ministry of Road Transport and Highways (MoRTH) has issued guidelines and financial support to set up centers.

  Delhi's automated driving test tracks show a 40% failure rate, indicating a more robust testing environment than traditional manual methods. Maharashtra has built over 10 AVT (ATS) tracks, with positive results in filtering unfit drivers.

  Assam, with technical support from NATRiP / ICAT and other stakeholders, is attempting to make AVT (ATS)central to its transport reform strategy.

- **Challenges and Recommendations**

    - Infrastructure: Building AVT (ATS) centers requires significant investment. States need support from the central government and private sector participation

    - Capacity Building: Technical staff must be trained to operate and maintain AVT (ATS) systems. Interdisciplinary teams involving IT, mechanical engineering, and transport planning are needed.

    - Public Awareness: Vehicle owners and drivers must understand the purpose and benefits of AVT. Awareness campaigns and incentive schemes can help improve compliance.

    - Regulatory Integration: VAHAN and SARATHI databases should be fully integrated with AVT centers to ensure seamless data flow and enforcement.

    - Legal Framework: AVT outcomes must be made legally binding. Fitness certificates should be issued only after successful AVT compliance.

- MORTH had recently provided the provisions of private entities to start vehicle inspection and issue certificate of fitness (COF) to commercial vehicles . Unfortunately in absence of prudent audit system these ATS have started issuing COF without vehicles visits or corrupt practice . therefore such liberalized ATS issue COF even without visiting the centres .

- MORTH has only mandated COF only for commercial vehicles which are not even 3% of total vehicles so its impact is negligible . It should cover all vehicles including private vehicles

- The telematics and ITS systems checking must be included in ATS protocols to ensure safety and electronic evaluations.

Conclusion

India stands at a critical juncture in its transport modernization journey. With one of the world's highest road accident fatality rates, reforms are not optional — they are essential. While behavioral change, education, and infrastructure improvements are crucial, systemic reforms like AVT offer a scalable, efficient, and transparent path to safer roads.

By enforcing vehicle and driver fitness through automation, India can reduce preventable deaths, enhance mobility, and reclaim public confidence in its transportation systems. AVT, if implemented widely and rigorously, can serve as a cornerstone of India's road safety strategy for the coming decades.

MEMBER'S PAGE

NEW MEMBER

Welcoming Our New Member – April 2025
Kataline Infraproducts Pvt. Ltd. (KIPL)

We are pleased to welcome Kataline Infraproducts Pvt. Ltd. as a new member of the ITS India Forum. With over two decades of experience in road marking systems, Kataline has established itself as a trusted name in the development, manufacturing, and application of durable and innovative traffic safety solutions

Kataline specializes in high-performance thermoplastic and cold plastic road marking products, offering end-to-end solutions tailored for highways, urban corridors, parking systems, and smart mobility zones. The company is known for its emphasis on quality, safety, and sustainability, and it has completed more than 1,200 projects across India and globally.

Headquartered in Nagpur, Kataline operates a state-of-the-art manufacturing facility with an annual production capacity exceeding 100,000 MT. Its global footprint spans over 20 countries, including Australia, Oman, Bhutan, and several African nations.

We look forward to Kataline's active contribution to the ITS ecosystem and its collaboration with fellow members in creating safer, smarter, and more sustainable transport infrastructure.

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- ITS Planners and Eng.
- Sparsh CCTV (Samriddhi Automations)
- Envoy Electronics Pvt Ltd
- Nayan India Science and Technologies
- Beltech AI
- Aditya Infotech (CP Plus)
- KSEDCLtd (Keltron)
- DANLAW Inc.
- Digital Assets and Transformation Solution (DATS)
- Deciphers IT Solutions Pvt Ltd
- Wheelseye Technology India Pvt Ltd
- Edgetensor Tech Pvt Ltd
- EFKON India Pvt Ltd
- Netradyne
- Road Vision AI
- Wizpro
- Sirab
- Luna
- Geospatial
- Kataline

FEATURE ARTICLE

Accelerating Smart Mobility in India: Insights from Euichul Kim of bitsensing

Euichul Kim
Vice President, Industrial Business Center, bitsensing Inc.

As cities around the world face mounting challenges related to traffic congestion, road safety, and aging infrastructure, Intelligent Transportation Systems (ITS) have emerged as a vital tool for enabling smarter, safer mobility. Among the leaders driving this transformation is Euichul Kim, Vice President of Industrial Business Center at bitsensing—a South Korea-based radar technology company advancing mobility, smart city, transportation, and healthcare innovation.

With deep expertise in industrial and mobility applications, Kim has spearheaded projects that bring together hardware innovation, data-driven insight, and AI-powered intelligence. His current focus is on expanding the global footprint of bitsensing's radar-based ITS solutions, and he sees strong potential for collaboration and impact in India.

Building on Global Trust: Lessons from Verona

A key milestone in bitsensing's international expansion is its project in Verona, Italy. In this vibrant European city, bitsensing deployed its advanced radar-based traffic solution—consisting of TIMOS™ (Traffic Insight Monitoring Sensor) and the software-based platform TraXight™—to address congestion and guide data-driven traffic strategies.

TIMOS™ is a multi-sensor system combining radar, camera, and edge computing to detect vehicles, monitor lane violations, track wrong-way driving, and capture traffic flow in real time. These sensors were installed across complex urban roads, enabling 24/7 monitoring with high precision—even in curved road sections and poor weather conditions.

To turn this rich sensor data into actionable insight, bitsensing integrated TraXight™, its AI-powered traffic management platform. TraXight™ aggregates and analyzes traffic data collected by TIMOS™, delivering real-time dashboards, statistical insights, and AI-based event analysis that empower city authorities to optimize signal timing, reduce bottlenecks, and plan smarter infrastructure.

“Verona was an important proof point,” says Kim. “It showed how the combination of our TIMOS™ sensors and TraXight™ platform can enable cities to not only observe traffic but actually understand it in a way that leads to measurable improvements. This system-level intelligence is exactly what growing cities need.”

Bringing Radar Intelligence to India's Roads

With rapid urbanization and an expanding population, India faces growing pressure to modernize its transportation systems. Cities are looking to upgrade traffic infrastructure with solutions that can improve flow, safety, and air quality. Kim believes bitsensing’s radar and AI technology can help meet this challenge.

Drawing from experience in Korea and Europe, Kim and his team aim to introduce scalable, cost-effective ITS solutions tailored for Indian cities. This means not just deploying hardware, but building ecosystems for real-time traffic analysis, predictive congestion modeling, and automated incident response.

“Our goal is not simply to introduce new tools, but to contribute to the evolution of India’s ITS landscape,” Kim explains. “Each city in India has different mobility patterns, road conditions, and stakeholder needs. That’s why we’re actively seeking opportunities to co-develop solutions with local partners.”

Contributing to the Future of India’s ITS

bitsensing’s radar solutions have been deployed in multiple environments—from Korea’s fog-prone expressways to Italy’s historic urban cores—and have consistently proven their reliability in enabling smarter, real-time traffic management. These successes now serve as a foundation for the company’s expansion into India.

Kim sees this as a natural next step in bitsensing’s mission to bring radar everywhere for a better life. “We believe India has the potential to lead the next wave of ITS innovation in Asia. By contributing our proven, future-ready technology, we hope to support that growth and help shape a smarter, safer mobility future.”

As Indian cities accelerate their transformation into intelligent urban ecosystems, collaboration with globally trusted partners like bitsensing offers a pathway to practical, high-impact change—powered by advanced sensing and guided by a commitment to innovation.

bitsensing | Radar Reimagined

FEATURE ARTICLE

Netradyne Powers AI-Driven Road Safety Solutions—Making Roads Safer For All

At a time when India is taking bold strides toward achieving its goal of reducing road fatalities, Netradyne stands at the intersection of purpose and innovation. As a deep-tech company specializing in AI-powered fleet safety solutions, Netradyne has transformed how commercial fleet operators think about road safety, risk management, and compliance.

At the heart of Netradyne's solution is Driver•i™, a vision-based edge computing platform that uses advanced AI to analyze every second of driving. With real-time in-cabin alerts, video evidence, and behavior-based driver coaching, Driver•i helps fleets not just observe, but actively improve driving behavior.

Deployment of Driver•i across Indian Fleets: Netradyne's vision-based Driver•i platform is now widely deployed across India's commercial fleet sectors – from employee transit and retail supply chains to oil & gas and logistics. For example, GreenLine Mobility (an Essar group company) integrated Driver•i in its LNG trucks to elevate road safety, and **IndianOilSkytanking** (airport fuel logistics) announced its fleet upgrade with Netradyne's AI cameras.

Similarly, Writer Safeguard (a Hitachi cash-management group) and leading logistics fleet providers like CJ Darcl have adopted Driver•i in hundreds of vehicles. Even FMCG giants like Nestle and HUL in India are on board – reflecting growing trust across sectors. Together, these deployments cover corporate buses, tankertrucks, car-carriers and supply fleets in dozens of cities.

Building a Safer Fleet Ecosystem

The impact that Netradyne's technology has brought to users has been both measurable and meaningful.

Fleets that have adopted Driver•i have seen up to:

- 50% reduction in road accidents
- 74% decrease in driver drowsiness events
- 38% reduction in distracted driving instances

These aren't just statistics — they reflect lives saved, property protected, and businesses made more resilient. For example, **Writer Safeguard**, which operates in the high-risk cash transit sector, reported a marked reduction in risky driving behaviors within six months of deployment.

This level of insight is only possible because of the platform's scale and intelligence. To date, **Netradyne has analyzed over 20 billion miles of driving data**, creating one of the largest structured safety datasets in the world. With over **444,000 Driver•i devices deployed globally, and more than 30 patents granted**, its systems continue to evolve and self-improve.

Key Partnerships and Operators: In May 2025, Eminent Transit – a pan-India corporate passenger transport provider – announced it will integrate Driver•i to "enhance and deliver world-class, top-tier safety" to its clients. In January 2025, Professional Automotives a leading car-transport company, signed on to "elevate safety standards and operational efficiency" using Driver•i. These alliances illustrate how Driver•i is being tailored for sectors from executive shuttles to high-value logistics.

Innovation That Earns Trust

Innovation is part of Netradyne's DNA. In 2024, NASSCOM recognized Netradyne as one of the **Top Patent Filers among Deep Tech Startups in India** — a testament to the ongoing commitment to solving safety challenges with cutting-edge technology.

What sets Driver•i apart is its proactive approach. While traditional dashcams react to incidents, Driver•i works in real-time: analyzing both the road and the driver, issuing alerts for drowsiness, phone usage, overspeeding, and more. The result? A "co-pilot" experience that's always on, always learning, and always helping.

This technical investment underpins an enormous learning dataset: Driver•i cameras have collected over 20 billion km worldwide, resulting in highly accurate AI models. The result is a massive, structured database (on the order of petabytes of query-able data) and a deployed base of more than **444,000 Driver•i units** in commercial fleets worldwide.

Driver Scoring and Positive Reinforcement: Central to Netradyne's solution is positive driver coaching, powered by the proprietary **GreenZone® Score**, which recognizes and rewards safe driving alongside identifying risks like distraction, speeding, and harsh braking. By evaluating both risky and safe behaviors—such as harsh braking, defensive maneuvers, or consistent speed compliance—Driver•i streamlines incident review, improves operational visibility, and empowers fleets to build safer, smarter, and more sustainable operations. Over 70% of all road accidents stem from driver error, so Driver•i's positive reinforcement combined with real-time alerts motivates drivers to improve their driving and brings about sustained behavioral change and measurable improvements in driver performance.

Aligned with India's Safety Vision

India's regulatory landscape is fast evolving, and Netradyne is already in sync with this progress. New mandates around *Driver Drowsiness and Attention Warning System* and upcoming standards around **Advanced Driver Assistance Systems (ADAS) and in-cabin monitoring**, are directly aligned with what Driver•i already offers today.

With real-time fatigue alerts, distraction detection, driver scorecards, and tamper-proof event recordings, Driver•i helps customers stay ahead of compliance while building a culture of accountability and safety.

Moreover, as fleet safety shifts from being a compliance checkbox to a strategic priority, Netradyne is helping operators manage claims, train drivers, and prevent incidents before they happen. By pairing real-time intelligence with long-term insights, fleet managers can make data-backed decisions, reward safe driving, and embed a culture of continuous improvement. Netradyne is committed to accelerating India's journey toward safer, smarter roads—because road safety is a shared responsibility.

GUEST COLUMN

Why Indian Must Prioritise Road Asset Management

India's road network spans over 6.3 million kilometres, making it the second largest in the world. This extensive infrastructure is vital for economic development, trade, connectivity, and social inclusion. However, maintaining the safety, reliability, and overall condition of such a large network is becoming increasingly difficult, particularly under conditions of limited public funding. In this situation, Road Asset Management, or RAM, must be viewed by road agencies as a core strategy. It is not a secondary concern or long-term aspiration but an urgent need to ensure that existing assets deliver value over time

RAM is a structured approach that involves planning, monitoring, and optimising the use and upkeep of road assets. It focuses on maintaining desired service levels while minimising total costs across the life of the infrastructure. For road agencies in India, where maintenance budgets are often insufficient, RAM offers a practical and cost-effective way to stretch resources and avoid expensive emergency repairs. Experience from other countries shows that the adoption of RAM leads to significant long-term savings. International studies indicate that RAM can reduce maintenance and rehabilitation costs by 25 to 45 percent.

Developed countries such as the United States, the United Kingdom, and Australia invest heavily in asset preservation. They typically allocate 35 to 40 percent of their road budgets to maintenance. In India, this figure is much lower. Only around 5 percent of the road budget is currently devoted to maintenance. In the 2022 to 2023 financial year, for instance, the Ministry of Road Transport and Highways allocated more than ₹2.7 lakh crore to the roads sector. However, less than ₹14,000 crore of that amount was designated for maintenance. This underinvestment leads to deferred repairs, faster pavement deterioration, rising life cycle costs, and increased risks to road users.

Given these constraints, the adoption of RAM becomes even more critical. Road agencies need to move beyond reactive maintenance and embrace a proactive approach based on performance data, forecasting, and prioritisation. However, several challenges must be addressed. Road agencies lack comprehensive data on pavement conditions and traffic volumes. Aging road segments demand regular attention, but timely interventions are often delayed due to inadequate planning. In addition, climate-related impacts such as floods and heatwaves are accelerating the rate of infrastructure degradation.

Despite these challenges, there are clear steps that road agencies can take. Increasing the allocation for maintenance to 10 to 15 percent of total road expenditure would be a crucial start. Adopting new technologies such as pavement sensors, drones, and artificial intelligence tools can enhance data collection and prediction capabilities. Developing deterioration models suited to Indian traffic and environmental conditions will allow for better targeting of interventions. Training staff and aligning internal practices with global standards such as ISO 55001 can build institutional capacity. Public-private partnerships also offer opportunities for improved efficiency and innovation in maintenance delivery.

Several Indian states have already begun to implement RAM frameworks, with support from national and international stakeholders. These early efforts show that systematic, data-informed road maintenance is possible and effective. Road agencies across the country are encouraged to scale up these initiatives. By embracing RAM, agencies can make better use of available funds, ensure safer and longer-lasting roads, and help build a more resilient and sustainable transport system for the future.

Prof Kranthi Kumar,
Associate Professor, IIT Kharagpur

EVENTS OF THE MONTHS – APRIL & MAY 2025

ITS India Forum Leads High-Level Roundtable on AI-Driven ATMS Advancements

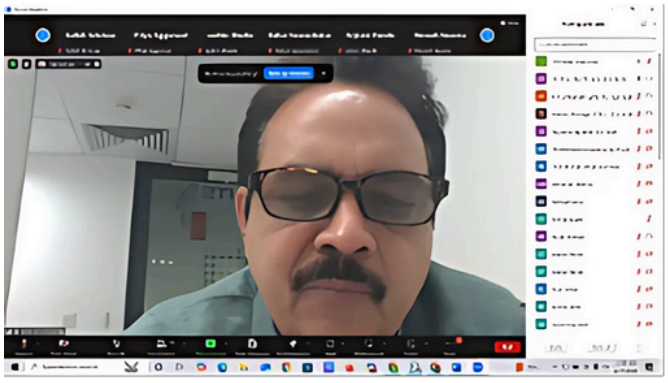
Date: April 17, 2025

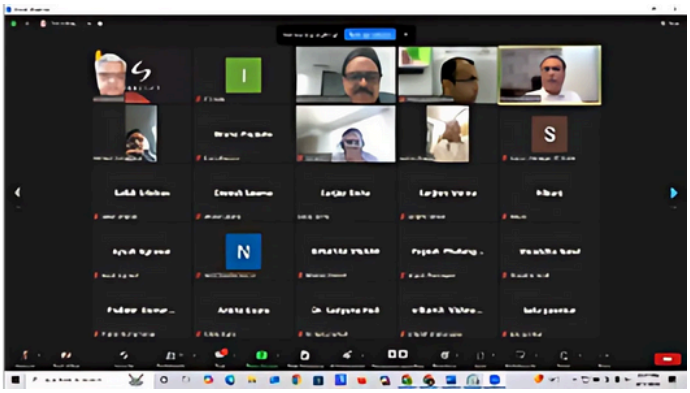
As part of its ongoing commitment to advancing India's digital mobility landscape, the ITS India Forum organized a high-level webinar on April 17, 2025, titled "Advanced ATMS: Ecosystem Readiness in the Era of AI and Connected Vehicles." Held in association with Ride Asia EV 2025, the webinar convened leading voices from government, academia, and the ITS industry to explore India's readiness to transition from traditional traffic control systems to AI-powered Advanced Traffic Management Systems (ATMS).

The session focused on the need to move away from hardware-centric procurement models toward functionality- and outcome-based approaches. Representatives from the Indian Highways Management Company Ltd. (IHMCL) outlined evolving national policies that emphasize flexible, software-driven ATMS frameworks aligned with international practices. Mnet showcased how artificial intelligence can be leveraged to process real-time sensor and video data, enabling faster and more accurate incident detection and response. IIT Bombay emphasized the urgent need to build India-specific datasets and develop skilled professionals capable of managing, analyzing, and operating next-generation traffic systems.

The discussion also benefited from international insights, with TTS Italia sharing global best practices in V2I (Vehicle-to-Infrastructure) communication and AI-based signal optimization. Startups and innovators presented emerging technologies, including smart helmets with integrated navigation and communication systems and incentive-based compliance platforms that reward safe driving behavior through data-backed verification.

A key takeaway from the dialogue was the consensus on the need for unified national ATMS standards, third-party certification frameworks, and public-private partnerships to enable scalable deployment across India. The ITS India Forum also announced its forthcoming collaboration with NATRAX to develop certification protocols for ATMS platforms, aiming to streamline procurement and promote innovation.





ITS India Forum Showcases Mobility Innovations at Ride Asia EV 2025

Date: April 18–20, 2025 | Pragati Maidan, New Delhi

ITS India Forum participated as a key exhibitor at the Ride Asia EV 2025 Expo, held from April 18 to 20 at Pragati Maidan, New Delhi. The event, which featured the International Conference on EV Industries, MSME Challenges, and Government Initiatives, provided an ideal platform for the Forum to demonstrate its leadership in shaping India's intelligent transport systems. The conference was chaired by Mr. Akhilesh Srivastava, President of ITS India Forum.

The Forum's exhibition stall served as an active engagement point for policymakers, industry stakeholders, innovators, and researchers. Designed to highlight the Forum's national role in mobility transformation, the stall showcased ITS India's core initiatives, pilot projects, and strategic collaborations. A key highlight was the display of the DANLAW Pilot Project, which illustrated real-time connected vehicle applications and the role of V2X technologies in improving road safety and operational efficiency. The demonstration drew interest from transport authorities, startups, and solution providers alike.

The ITS India team engaged with several major industry participants, including representatives from OMAHA, YAKUZA, AREL Electric Vehicles, and JIVA E-Bikes. These discussions explored opportunities for collaboration in areas such as telematics, safety monitoring, V2X integration, and smart EV fleet management. Visitors to the stall also received the ITS India Forum's latest Annual Report, providing a detailed overview of the organization's impact, milestones, and future plans.

In addition to facilitating knowledge exchange, the exhibition enabled valuable business networking. The Forum's representatives held discussions with dignitaries, exchanged business cards with corporate leaders, and laid the groundwork for future strategic partnerships. ITS India's presence at the event not only enhanced its visibility within the EV and ITS sectors but also reinforced its role in supporting MSMEs, promoting policy innovation, and enabling India's transition toward safer, smarter, and more connected mobility systems.

International Conference on Smart Mobility Systems ICSMS-2025

Date: April 26–27, 2025 | Venue: Ambedkar International Centre, New Delhi

The ITS India Forum participated as a lead contributor to policy and innovation discourse at the International Conference on Smart Mobility Systems (ICSMS 2025), held at the Ambedkar International Centre, New Delhi, on April 26–27. The conference served as a premier gathering of policymakers, researchers, industry leaders, and innovators focused on advancing the future of connected mobility, intelligent infrastructure, and transport digitization in India.

As a strategic stakeholder, the ITS India Forum brought its extensive national experience and international partnerships to the forefront—shaping discussions on intelligent transport systems (ITS), sustainable mobility frameworks, and the role of AI in public infrastructure. Senior leadership from the Forum, including Dr. Shiv Kumar (Director General, ITS India Forum) and Mr. Akhilesh Srivastava (President, ITS India Forum), joined the inaugural session alongside dignitaries such as Shri Sunil (President, IETE) and Lt Gen Ulhas Kirpekar (DG, Corps of Signals).

The two-day conference featured high-level plenary sessions, keynote addresses, and expert panels. On Day 1, the discussions focused on connected vehicle ecosystems, ITS standardization, and the integration of artificial intelligence in traffic management systems. Technical insights were shared by speakers from BIS, Qualcomm, C-DAC, Tata Motors, Maruti Suzuki, and CSIR-CRRI, among others.

Day 2 shifted focus to road safety, cybersecurity, human-centric mobility innovations, and urban transport resilience. Key stakeholders such as IIT Delhi, Ola Mobility Institute, Jio, and the Delhi Police contributed to the discourse. A key highlight of the event was the session on “Next-Gen Road Safety and AI in ITS,” chaired by Mr. Akhilesh Srivastava, where he underscored the importance of designing mobility solutions that are both technologically advanced and centered on human behavior, safety, and inclusivity.
ITS India Forum’s contribution also extended to supporting parallel technical paper sessions, which addressed emerging domains including EV integration, IoT-based mobility solutions, and advanced traffic analytics.

Through its meaningful engagement, the ITS India Forum reaffirmed its commitment to shaping India’s ITS roadmap by bridging research with policy, fostering cross-sector collaboration, and advancing scalable, future-ready transport systems. The Forum’s participation at ICSMS 2025 reflects its ongoing dedication to building a smart, safe, and sustainable mobility ecosystem for India.



ITS India Forum Hosts National Roundtable on Scaling ATMS in India

Date: May 20, 2025

As part of its national ITS policy and innovation dialogue series, ITS India Forum convened a high-level roundtable on “Challenges in Scaling ATMS and the Way Forward” on May 20, 2025. The session brought together thought leaders from government agencies, academia, the private sector, and standards bodies to address critical roadblocks and strategic solutions for the effective implementation of Advanced Traffic Management Systems (ATMS) in India.

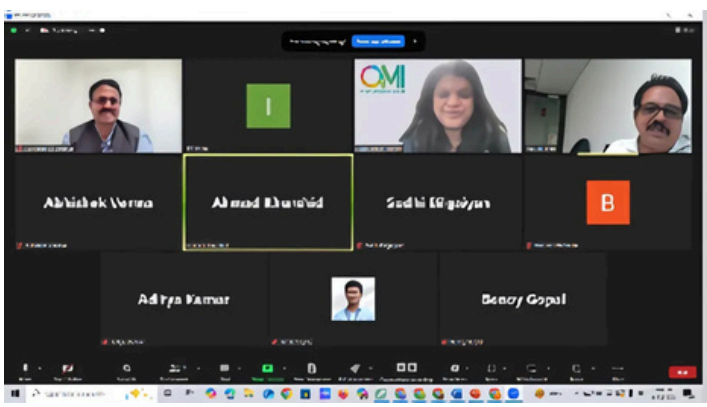
Opening the discussion, Mr. Akhilesh Srivastava, President of ITS India Forum, emphasized the importance of creating an ITS ecosystem that seamlessly integrates vehicles, infrastructure, and communication platforms. He outlined current policy gaps and the need for unified procurement and certification frameworks to accelerate scalable deployment.

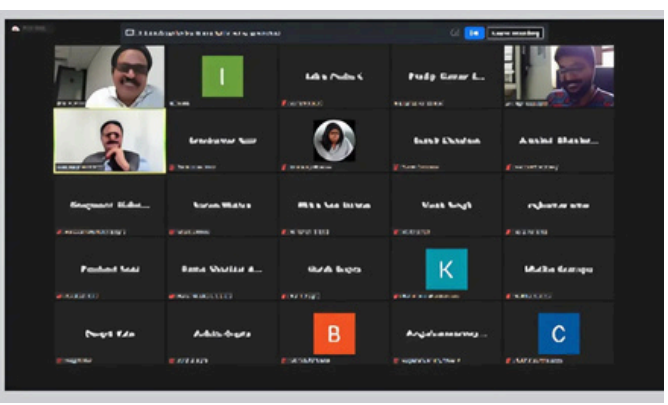
Key presentations included adaptive traffic control platforms developed by C-DAC, insights into AI-based public transport prioritization from the Ola Mobility Institute, and cybersecurity frameworks for software-defined vehicles presented by DestroSolutions. The Bureau of Indian Standards (BIS) provided updates on upcoming ITS standardization protocols, including LED destination boards and RFID-based school transport safety models.

Vice Admiral Sreekumar Nair (Rtd.) underscored the strategic importance of aligning ITS deployments with national security infrastructure, while academic experts from IIT BHU and BIS stressed the role of institutional training, policy playbooks, and open-data frameworks in achieving system-wide efficiency and safety.

Cross-cutting themes from the discussion included the need for indigenous technologies, machine learning integration, public-private partnerships, and digital public infrastructure (DPI) models. The roundtable was moderated by Dr. Shiv Kumar, Director General of ITS India Forum, who noted that these insights will feed directly into the upcoming physical policy conference scheduled for July 2025.

Next steps announced during the session include the June 20 roundtable on ATMS market opportunities, the July launch of the ITS India Journal, and pilot implementation of RFID-based school safety systems. This event reinforced the Forum’s commitment to advancing a human-centered, secure, and scalable ITS future for India.





ITS India Forum Presents India's Vision at ITS Asia-Pacific Forum 2025 in Suwon, South Korea

Date: May 27–30, 2025 | Suwon, South Korea

At the 20th ITS Asia-Pacific Forum held in Suwon, South Korea, the ITS India Forum marked a historic milestone by being officially inducted as the 12th member of the ITS Asia-Pacific Association. This strategic inclusion positions India as a key player in shaping the future of intelligent mobility across the region and offers a multitude of long-term advantages. Foremost among these is the opportunity to actively participate in the development of international ITS standards and regulatory frameworks, enabling India to align its national systems with global benchmarks. It also opens avenues for collaborative pilot projects, bilateral knowledge exchange, and multilateral funding opportunities with leading ITS nations. Furthermore, India gains a platform to influence regional strategy on smart mobility, contribute to policy harmonization, and build stronger academic and institutional linkages across the Asia-Pacific corridor.

Leading the Indian delegation, Mr. Akhilesh Srivastava, President of ITS India Forum, delivered a keynote address and presented the India Report on Intelligent Transportation Systems, showcasing the country's rapid progress in deploying next-generation mobility solutions. He spotlighted India's flagship initiatives such as the C-V2X-enabled Green Corridor for emergency response, the Safe Driving Score platform designed to enhance behavioral safety, and the national Road User Charging (RUC) framework aimed at sustainable infrastructure financing. These innovations underscore India's growing capacity to lead in the deployment of AI-powered, connected, and citizen-centric transport systems.

India's new membership not only signifies recognition of its national progress but also establishes it as a strategic contributor to regional dialogue on future mobility. The forum served as a launchpad for deeper bilateral and multilateral cooperation, with announcements of India's active participation in upcoming global platforms—including the ITS World Congress 2025 in Atlanta, where ITS India Forum will host the official ITS India Pavilion and lead high-level engagements.

As Mr. Srivastava aptly noted, *"This membership marks a game-changing moment for India's transport ecosystem—fueling global collaboration, accelerating innovation, and aligning our vision with the future of intelligent mobility."*

UPCOMING EVENTS BY ITS INDIA FORUM

Shaping the Future of Mobility: Key ITS India Engagements Ahead

As India accelerates its transition toward intelligent transport and sustainable urban mobility, the ITS India Forum is set to host and participate in a series of impactful national and international events. These upcoming platforms will convene thought leaders, government officials, researchers, and industry pioneers to discuss policies, pilot solutions, and chart the course for the next generation of smart mobility.

5th National Round Table on ATMS – Policy, Market & Global Best Practices
Date: June 20, 2025

ITS India Forum will organize the fifth edition of its flagship ATMS Round Table, focusing on procurement models, certification frameworks, and international benchmarks in Advanced Traffic Management Systems (ATMS). The event will bring together senior officials from MoRTH, NHAI, IHMCL, leading OEMs, and global experts to address policy alignment, funding structures, and strategies to expand ATMS deployment through PPPs and innovation partnerships.

Advanced ATMS Conference – National Dialogue on Smart Traffic
Date: July 9, 2025

Building on the momentum of past roundtables, this national conference will explore the readiness of India's traffic infrastructure for AI-based, real-time management systems. Technical sessions, case studies, and solution showcases will engage state transport departments, urban planners, and industry stakeholders in shaping future-ready ATMS frameworks.

ITS World Congress 2025 – India Pavilion at Atlanta
Date: August 24–28, 2025 | Venue: Georgia World Congress Center, Atlanta, USA

ITS India Forum will host the official India Pavilion at the ITS World Congress 2025 in Atlanta, providing a strategic platform to showcase India's advancements in intelligent transport systems on a global stage. Under the theme "Deploying Today, Empowering Tomorrow," the Pavilion will feature technology demonstrations, executive networking, and cultural engagement. Indian stakeholders can participate through structured partnership tiers, gaining international visibility, business opportunities, and thought leadership exposure.

Next Generation Tolling Summit – India's Roadmap to FASTag 2.0
Date: September 23, 2025

As India prepares for the transition to GPS-based tolling and account-based payment systems, this focused summit will examine the future of toll interoperability, policy readiness, and technology infrastructure. The event will serve as a launchpad for FASTag 2.0 innovations, bringing together technology providers, regulators, and concessionaires under one roof.

Traffic InfraTech Expo 2025 – National Exhibition of Transport Innovation
Date: October 7–9, 2025

ITS India Forum will participate in the upcoming TrafficInfraTech Expo 2025 to showcase leading projects, policy models, and mobility innovations. The event will bring together transport authorities, solution providers, infrastructure developers, and investors to explore collaboration opportunities for future-ready cities.

ITS India Congress – National Convergence on Intelligent Transport
Date: November 20–21, 2025 | Kochi, Kerala

The ITS India Congress 2025 will be held for the first time in Kochi, bringing together leaders from across government, academia, industry, and civil society to collaborate on intelligent transport, digital tolling, and sustainable urban mobility. With dedicated sessions on policy, infrastructure, AI, and data, this national-level forum will shape India's strategic vision for ITS deployment over the next decade.

Hackathon on Intelligent Transportation Systems
Date: TBA

ITS India Forum, in collaboration with TiHAN–IIT Hyderabad, will organize a national Hackathon focused on real-world challenges in smart mobility. The initiative will engage students, researchers, and startups in developing deployable solutions using AI, IoT, and digital twin technologies.

Connected Vehicle Stakeholders Meet 2 (CVS 2) – Future of V2X
Date: January 29, 2026
The second edition of the Connected Vehicle Stakeholders Meet will focus on advancing V2X communications, AI-based safety systems, and digital infrastructure for connected fleets. The event will include live demos, collaborative sessions, and presentations from OEMs, telecom providers, and transport authorities.

Smart Mobility Conference – Regional Innovation and Cross-Border Collaboration
Date: April 23–24, 2026 | Kathmandu, Nepal

In partnership with IETE and Tribhuvan University, ITS India Forum will host an international conference in Kathmandu, focusing on regional cooperation in mobility innovation. Key themes will include cross-border traffic integration, multimodal digital frameworks, and the role of ITS in sustainable development.

ADVERTISEMENTS

India is set to take center stage at the ITS World Congress 2025 in Atlanta, USA, from August 25–28, under the theme "Deploying Today, Empowering Tomorrow."

The ITS India Pavilion will highlight the nation's cutting-edge ITS innovations, rich cultural heritage, and hospitality. With opportunities for global networking, collaborations, and sponsorships, the Pavilion invites industry leaders, policymakers, and innovators to join Team India in shaping the future of mobility. Early bird registrations and premium sponsorship packages are now open.

For Inquiries and Registration,

Dr. Shiv Kumar Email:- dg@itsindiaforum.com

NEW COMMITTEES AND WORKING GROUPS AT ITS INDIA FORUM

Electric Road Systems (ERS) Committee

The Electric Road Systems (ERS) Committee has been established as a strategic working group to explore the feasibility and implementation of in-motion electric vehicle (EV) charging technologies in India. Comprising experts from AISIN, Elonroad, OMI Foundation, and Cambridge University, the committee seeks to adapt globally proven ERS models—particularly those deployed in Germany, France, and Sweden—to Indian highways and freight corridors. The primary objective is to evaluate how ERS can address challenges in EV infrastructure, especially for long-distance commercial transport. The committee is currently preparing a comprehensive white paper that will assess the technical feasibility, economic viability, and regulatory environment required to implement ERS at scale. A special focus is being placed on high-potential corridors such as the Delhi–Mumbai Expressway. Additionally, the committee is exploring wireless dynamic charging technologies and developing benchmark methodologies in collaboration with partners such as ASCI and NHEV, with the goal of establishing national implementation standards.

National Architecture for ATMS Committee

The Standing Committee on Advanced Traffic Management Systems (ATMS) has been constituted to design and standardize a unified national architecture for intelligent traffic systems in India. This initiative aims to convert India's road networks into smart, adaptive corridors that leverage IoT, real-time data, and predictive analytics to enhance safety and efficiency. The committee is analyzing existing ATMS deployments across Indian cities and highways to identify gaps, especially in areas like system interoperability, scalability, and cost-effectiveness. In alignment with national infrastructure programs such as Bharatmala and the Smart Cities Mission, the committee is working toward the development of comprehensive technical standards, system integration protocols, and performance benchmarks. It is also exploring sustainable funding models, including public-private partnerships (PPP) and international financing, to ensure the long-term scalability of ATMS solutions. Through its work, the committee is expected to lay the foundation for smarter, safer, and more responsive road networks across the country.

Blockchain for Mobility Committee

The Blockchain for Mobility Committee has been established to evaluate how blockchain technology can be integrated into India's intelligent transport ecosystem to improve transparency, security, and data integrity. This multidisciplinary committee includes experts from technology, transport operations, governance, and academia. Its mandate is to identify high-impact blockchain applications in areas such as tolling, logistics tracking, traffic enforcement, and autonomous vehicle communication. By creating a decentralized and tamper-proof infrastructure for mobility data, blockchain can play a transformative role in building public trust and operational efficiency. The committee is currently working on developing technical integration frameworks, identifying regulatory considerations, and proposing interoperability standards to ensure seamless adoption across jurisdictions and systems. It also aims to launch pilot projects that demonstrate practical use cases and measurable outcomes. A final report will be produced featuring policy recommendations, technical guidelines, and case studies, helping India take a leadership role in secure, blockchain-based mobility solutions.

Mobility Ranking Index Committee

The Mobility Ranking Index Committee is focused on institutionalizing performance-based benchmarking of urban mobility systems in Indian cities. In partnership with organizations such as OMI Foundation, Akara Research, AiSPRY, and ITS India, the committee is building on the foundation of the Ease of Moving Index, which evaluates more than 110 mobility indicators across 40 cities using data from over 50,000 respondents. This committee aims to transform these rankings into strategic tools for policymakers and urban planners to drive targeted reforms, allocate infrastructure investments effectively, and improve service-level outcomes. It also emphasizes the importance of integrating digital readiness and sustainability indicators into urban mobility assessments. To support effective implementation, the committee is advocating for the establishment of dedicated roles such as Mobility Commissioners at the district level and is currently drafting a unified framework to guide nationwide benchmarking. Discussions are underway with key ministries and potential funding agencies, including the Asian Development Bank, to mainstream and scale the initiative nationally.

Artificial Intelligence (AI) Committee

The AI Committee has been formed to explore the integration of artificial intelligence into India's transport and mobility landscape. With participation from experts representing the Transport Department of Odisha, the Indian School of Business (ISB), TGSRTC, and private technology firms, the committee is identifying AI-driven solutions that address India-specific transport challenges. Its areas of focus include AI-based pavement condition monitoring, predictive maintenance, adaptive signal control, driver behavior analysis, real-time incident alerts, and optimization of public transport operations. The committee is working along a six-month roadmap to develop a feasibility study and pilot implementation strategy, backed by a detailed white paper.

In addition to identifying technical applications, the committee is addressing legal, ethical, and data governance issues to ensure AI adoption aligns with Indian laws and privacy standards. Through its efforts, the committee envisions AI as a transformative force in enhancing road safety, infrastructure efficiency, and data-driven governance in India's mobility systems.

Connected Vehicles Ecosystem

The Connected Vehicles Ecosystem, guided by a dedicated working group under the ITS India Forum, focuses on advancing C-V2X (Cellular Vehicle-to-Everything) technologies to enhance road safety, emergency response, and traffic efficiency. A key achievement of this group was the successful implementation of a C-V2X-enabled green corridor in Bengaluru, enabling automated signal preemption for emergency vehicles. The system, developed in collaboration with Danlaw, CDAC, Mahindra, TIHAN, and other partners, resulted in a 38% reduction in emergency vehicle travel time.

The committee is also engaged in interoperability testing of global C-V2X standards (IEEE and ETSI) at the TiHAN testbed, ensuring vendor-neutral deployment across Indian cities. It supports broader safety applications like forward collision alerts, blind spot detection, and pedestrian warnings, and has enabled upgrades to existing traffic controllers through custom V2X adapters. Looking ahead, the group aims to integrate AI-based analytics, promote policy support, and expand C-V2X adoption through a phased, scalable approach.

FEATURE ARTICLE

TrafficEye: A Portable Device to Get Classified Vehicle Counts at Mid-Block and Intersection in Real-Time

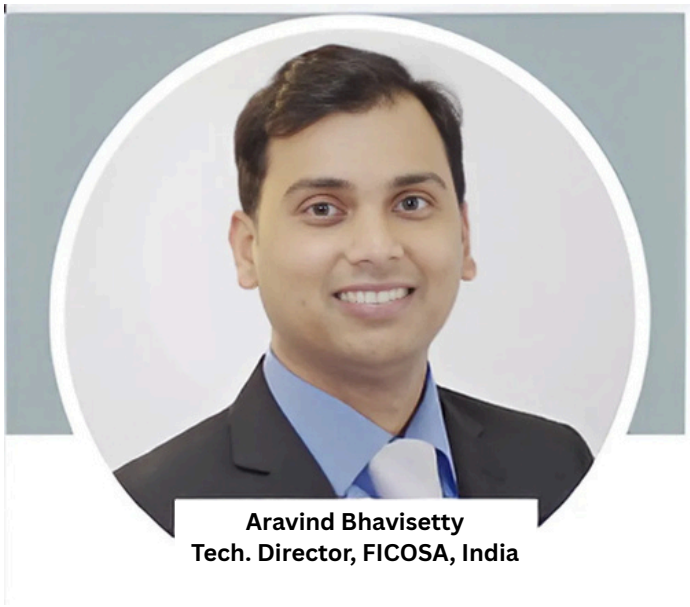
PARIMITRA Pvt Ltd

Classified Traffic Counts at mid-block or at an intersection are essential measurement items, required for many projects. To minimise the manual efforts in the data collection, to reduce the possibility of data bias/ tampering,to have ease in installation and to get real-time classified vehicle data for Indian Traffic conditions, we have developed a low-cost, portable device.

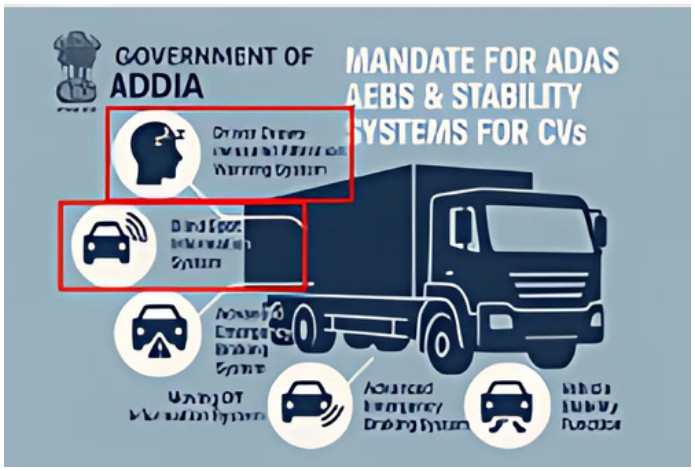
TrafficEye is a computer vision-based edge computing device that collects frames from a camera connected to it and processes them in real time to calculate the classified vehicular flow at the location. The device is an easy-to-configure setup for different locations, such as traffic counts at mid-block or turning movement counts at an intersection. The set-up is out of the box and particularly crafted for Indian urban and rural scenarios, i.e., no external connections, other than power, are required. The embedded computer vision models used in the devices are using the Indian Traffic Dataset (ITD), which is a rich dataset covering more than 14 different locations all over India with different road and weather conditions, and different terrains. The vehicular classification is as per the Indian Highway Capacity Manual (IndoHCM). The model is trained with over 350k instances on more than 10k images in total. The model trained over the dataset has proven very high accuracy, verified at different locations. The model is customised for lighter deployment in the edge computing setup. The system has been tested and deployed in multiple locations like highways, toll gates, traffic intersections, etc., at multiple locations in India like Meerut, Chutmalpur, Haridwar, etc. In terms of the potential of the devices for a variety of applications in the road transport development sector, it can also facilitate traffic speeds by vehicle type, trajectories, queue lengths, etc. To tackle the problems in the urban setup, TrafficEye, a state-of-the-art mobile system for dynamic sensing of the city traffic conditions, is a revolutionary product, making the whole data collection exercise convenient with much lower cost.

FEATURE ARTICLE

FICOSA's Solutions for Govt. mandates



Aravind Bhavisetty
Tech. Director, FICOSA, India



The Ministry of Road Transport and Highways (MoRTH) has issued a draft notification (G.S.R. 184(E)) proposing significant amendments to the Central Motor Vehicles Rules (CMVR), 1989, aimed at enhancing road safety standards for commercial vehicles in India. The amendments, which focus on the mandatory implementation of advanced driver assistance systems (ADAS), braking technologies, and safety features etc, of which FICOSA has solutions as mentioned below.

AIS -184 : Driver Drowsiness and Attention Warning Systems

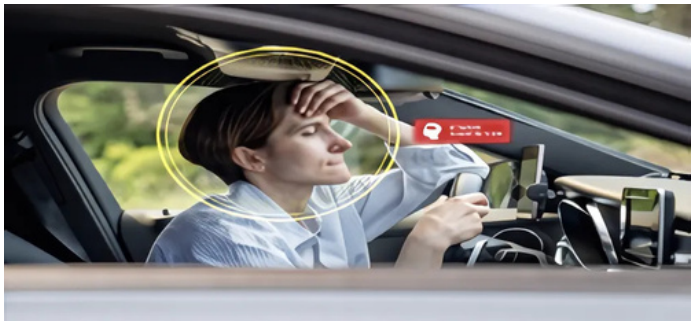
Vehicles of categories M2, M3, N2 and N3 manufactured on and after, 1st April 2026, in case of new models and 1st October 2026, in case of existing models shall be fitted with Driver Drowsiness and Attention Warning Systems.

Drowsiness Detection & Vital Sign monitoring

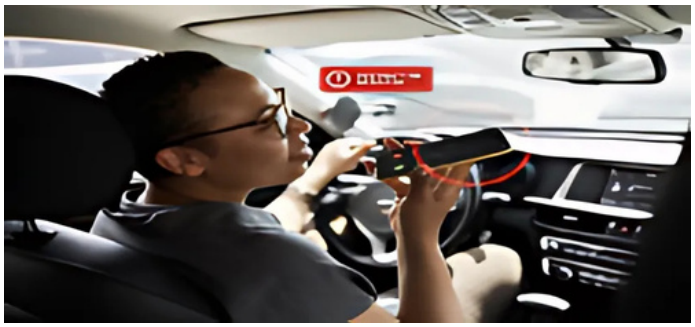
To combat fatigue, the DMS applies a drowsiness detection algorithm aligned with the Karolinska Sleepiness Scale (KSS). When signs of drowsiness—such as slow blinking or head nodding—are identified, the system provides real-time warnings through the vehicle's HMI. This feature is fully compliant with EU Regulation 2019/2144 for Driver Drowsiness and Attention Warning (DDAW).

Facial Recognition: Enables personalized vehicle settings, enhances security with driver authentication, and supports hands-free features through biometric identification

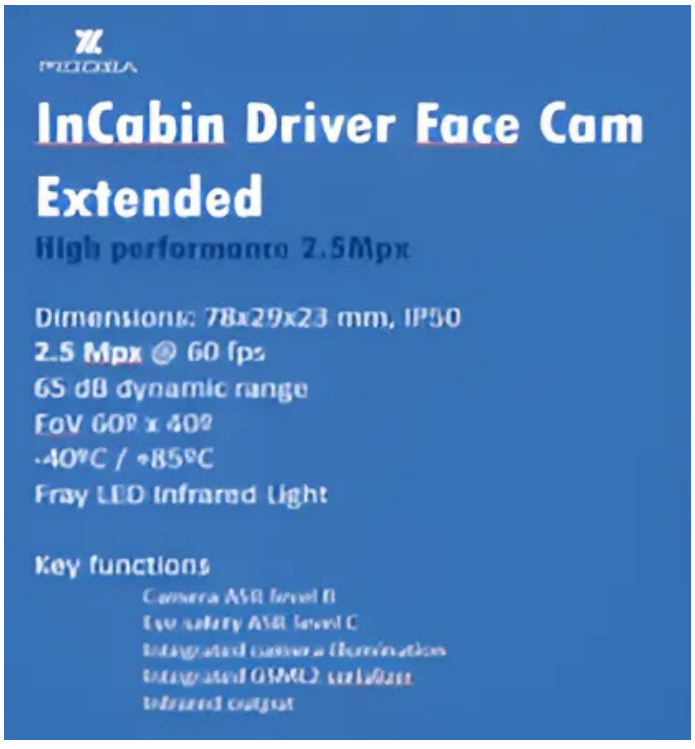
Emotional Detection for Passengers & Driver: Identifies stress, anger, or distraction levels, adapting in-car settings to improve comfort, safety, and driving experience.



Driver Face Monitoring: Detects unsafe behaviours such as phone usage, smoking, or eating, providing real-time alerts to help drivers stay focused on the road.



Using a high-performance 2D Near-Infrared (NIR) monochrome camera combined with vehicle CAN signals, the DMS continuously tracks the driver's eye movements, facial orientation, and head pose to assess attention levels. It detects risky behaviours such as drowsiness, phone usage, smoking, and eating, issuing instant visual and acoustic alerts when the driver's focus shifts away from the road



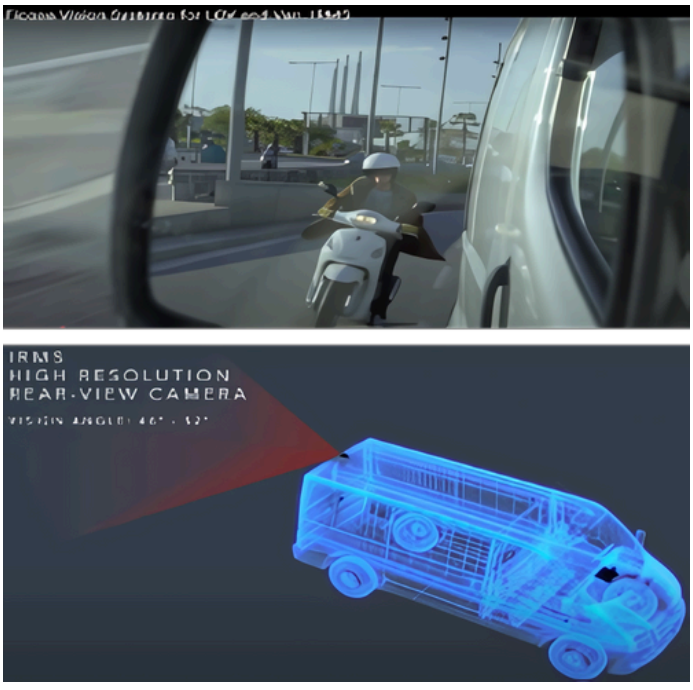
Additionally, the system meets EU Regulation 2021/1314 for Advanced Driver Distraction Warning (ADDW) by monitoring whether the driver maintains proper attention to the driving scene over time.

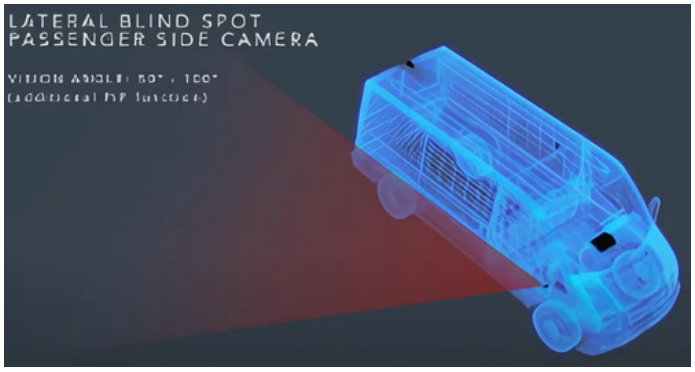
AIS -185 : Blind Spot Information Systems

Vehicles of categories M2, M3, N2 and N3 manufactured on and after, 1st April 2026, in case of new models and 1st October 2026, in case of existing models shall be fitted with Blind Spot Information Systems

IRMS (intelligent rearview monitoring system)

Ficosa and Panasonic have jointly developed a new generation of intelligent interior mirrors. Based on a state of the art rear-facing camera and a high definition display with system ECU integrated, this IRMS allows the driver of an Light Commercial Vehicle or windowless rear body vehicle monitor the rear view though a high quality live video, typically impossible for this kind of vehicle, highly increasing driving safety.





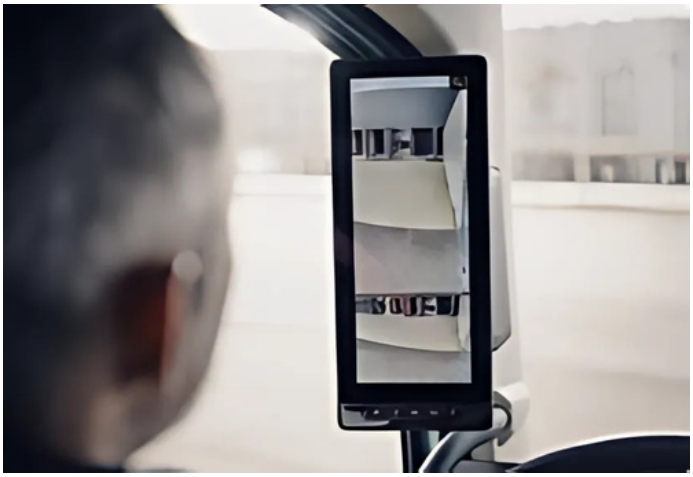
One of the most innovative IRMS feature is the Rear Digital High-resolution camera with customizable installation mode allows to be installed at Rear door at any desired height providing a greater wide view that allows to view everything that happen behind the vehicle. In addition, Side view mirror helps to cover the complete Blind spot information system

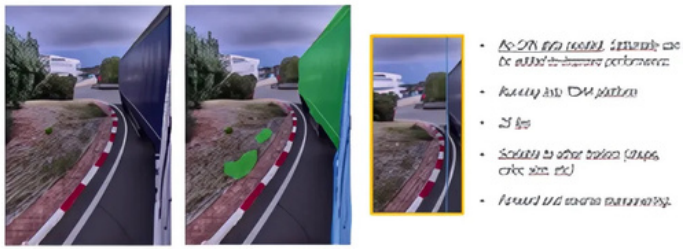
CMS : Camera Monitoring System

is a brand-new vision system technology consisting of two lateral cameras and two OLED 7” screens inside the vehicle, which allow for substitute the traditional car mirrors, giving a safer and more comfortable driving experience.

Through this vision system, the cameras coupled with folding supports in the vehicle’s chassis transmit the image with low latency to the OLED screens inside the vehicle. The digital mirror gives a large numerous of advantages improving the driving experience and the security of the vehicle. More over the user can have an extended vision field, eliminate the dead angle, the reduction of the vehicle petrol consumption thanks to the improvement in the car aerodynamics and a better night vision. This system also incorporates advanced functions as the automatic calibration of three cameras for the appropriate use in all the possible situations or alerts as the approaching of other cars before the takeover or the detection of any dust particle, raindrops or similar that could affect the image of the system.

The driver can just view into the pillar A display as if like looking into the side mirror of the vehicle.





Display can also be continuously adapted to maintain a constant proportion of truck-trailer in the image, ensuring a good perception of the vehicle's surroundings.

Ficosa develops 1st worldwide digital mirror system (CMS) into mass production in 2018, 2nd generation was released on 2023 and we are working in 3rd generation, expected SoP 2026

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CARTOON CORNER

This illustration highlights the role of Intelligent Transport Systems (ITS) in facilitating faster and safer movement for emergency vehicles in congested urban environments. The cartoon portrays a real-time application of the “Green Corridor” concept—where smart traffic signals dynamically coordinate to create an uninterrupted path for an approaching ambulance.

Powered by Cellular Vehicle-to-Everything (C-V2X) technology, the system enables seamless communication between the emergency vehicle and signal infrastructure. As the ambulance nears the intersection, each signal adjusts in real time to provide a continuous green phase, allowing the vehicle to bypass traditional delays caused by traffic congestion.

The image serves as a visual representation of how digital signal prioritization, combined with connected vehicle technologies, can reduce emergency response times, improve roadway safety, and support smarter urban mobility management. It reinforces the broader vision of ITS India Forum—to integrate real-time intelligence into traffic systems and make mobility safer, faster, and more efficient for all.

SUMMARY BY DIRECTOR GENERAL

The months of April and May 2025 have been pivotal in strengthening the ITS India Forum's April and May 2025 marked a significant phase for the ITS India Forum, strengthening our leadership in advancing intelligent transport systems through strategic collaborations and high-impact initiatives.

Internationally, our participation in the **20th ITS Asia-Pacific Forum in Suwon, South Korea** was a landmark moment. With **India becoming the member of the ITS Asia Pacific Forum,** we joined the global league of smart mobility leaders This achievement now enables ITS India Forum to bid for major international projects and events—unlocking avenues for global collaboration, access to advanced technologies, harmonized policy alignment, and strategic leadership in shaping the future of mobility.

Domestically, we played a key role as a strategic partner in the **International Conference on Smart Mobility Systems (ICSMS 2025)**, contributing to discussions on AI-led traffic systems, V2X communication, and connected mobility. At the **Ride Asia EV Expo**, we highlighted C-V2X, smart infrastructure, and electric mobility integration—reaffirming our commitment to digital mobility transformation.

A major institutional milestone was the signing of an MoU with the **OMI Foundation Trust** to collaborate on clean mobility, advanced air mobility, circular economy frameworks, and gender-inclusive transport policies. This partnership will enable joint research, pilot programs, and policy innovation aimed at shaping India's future transport agenda.

Our partnership with **TiHAN–IIT Hyderabad** continues to deliver measurable outcomes. As a knowledge validation partner, TiHAN is actively engaged in collaborative research across autonomous navigation, connected vehicles, Road User Charging (RUC), and AI-based traffic platforms. The partnership also supports the joint development of technical standards, policy frameworks, and executive education programs—bridging academic research with practical deployment. These initiatives are playing a vital role in positioning India as a global thought leader in emerging transport technologies.

Looking ahead, our focus shifts to the **5th National ATMS Roundtable** in June, followed by the **Smart Traffic Dialogue** in July. These engagements will culminate in India's showcase at the **ITS World Congress 2025 in Atlanta** and the **ITS India Congress in Kochi**—highlighting India's evolving ITS ecosystem on global platforms. We will also continue scaling our capacity-building programs and regional collaborations to foster inclusive and future-ready transport solutions.

I extend heartfelt thanks to our members, partners, and stakeholders for your continued support. Together, we are shaping a future-ready, inclusive, and globally connected mobility landscape.

Dr. Shiv Kumar
Director General, ITS India

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