Mr. Akhilesh Srivastava, Advisor of the IRF India Chapter and moderator of the webinar, opened the session by emphasizing the urgent need to leverage technology to address India's road safety challenges. He highlighted that despite India recording one of the highest numbers of road fatalities globally, technology-driven interventions on National Highways have begun yielding positive results. He cited examples of AI-based traffic management systems, adaptive traffic signals, and intelligent transport solutions from India and abroad that have reduced congestion, improved emergency response, and enhanced road safety. He stressed that AI and IoT are enabling a shift from reactive traffic management to proactive and predictive road safety and encouraged experts to identify implementation challenges so that suitable policy recommendations could be made.

Mr. Rahul Mehra, Co-founder of Roadcast Technologies, focused on the role of AI and IoT in improving driver behaviour and fleet safety. He observed that human error remains the leading cause of road crashes and stressed that changing driver behaviour through technology is essential. He explained how AI-enabled in-cabin cameras can detect fatigue, distraction, mobile phone usage, smoking, and other unsafe driving practices in real time, allowing timely intervention to prevent accidents. He also discussed alcohol interlock systems, predictive vehicle maintenance, emergency alerts, and fleet safety audits as critical components of a comprehensive road safety strategy. According to him, AI should be used not merely to monitor incidents but to predict risks, generate timely alerts, and prevent crashes before they occur.

Mr. Hardik Dave, Founder and CEO of RoadVision AI, presented AI-driven solutions for road infrastructure monitoring and maintenance. He explained that conventional road inspections are expensive, time-consuming, and unable to cover the vast road network regularly. His organization has developed an AI platform that analyses dashcam videos to identify over 140 road safety parameters, including potholes, damaged road signs, missing markings, vegetation growth, drainage issues, and other infrastructure defects. The system generates GIS-based inspection reports within minutes, enabling road agencies to prioritize maintenance and improve accountability. He also highlighted NHAI's adoption of AI-based weekly highway inspections as an example of how technology is supporting preventive maintenance and improving road safety across National Highways.

Prof. Amit Agarwal of IIT Roorkee highlighted the importance of developing affordable, indigenous AI and IoT solutions tailored to India's unique traffic conditions. He showcased several innovations developed by his research team, including low-cost edge AI devices for vehicle detection, traffic monitoring, speed estimation, automatic number plate recognition, parking management, and traffic analytics. He also demonstrated AI-based systems for monitoring motorcycle behaviour, detecting rash riding and wrong-side driving, and developing affordable Advanced Driver Assistance Systems (ADAS) for two-wheelers. He emphasized that locally

developed technologies can provide high accuracy at significantly lower costs while supporting traffic enforcement, safety analysis, and intelligent traffic management across India.

Mr. Amarjeet Dangi, Founder and CEO of Clavrit, introduced a citizen-centric approach to traffic enforcement through his AI-powered mobile application, MotoCatch. He explained that fixed CCTV cameras cover only a small portion of India's road network, leaving many violations undetected. MotoCatch enables citizens to capture traffic violations using their smartphones, after which AI automatically identifies vehicle number plates, classifies the type of violation, records the GPS location and timestamp, and protects user privacy through anonymization. The application is designed to integrate with existing e-challan systems, effectively transforming smartphones into distributed traffic monitoring devices. He emphasized that the solution complements existing CCTV infrastructure by extending enforcement capabilities to areas where fixed cameras are unavailable.