GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

RAJYA SABHA
UNSTARRED QUESTION NO. 2366
ANSWERED ON 08.08.2025

AI-BASED PREDICTIVE MAINTENANCE AND SAFETY SYSTEMS

2366 SHRI HARIS BEERAN:

Will the Minister of RAILWAYS be pleased to state:

(a) whether Government has undertaken any assessment to evaluate the operational readiness of railway zones for adopting AI-based predictive maintenance and safety systems;

(b) if so, the key findings of such assessment, including infrastructure or capacity gaps that may hinder effective deployment;

(c) whether any pilot initiatives involving AI-driven predictive maintenance, accident prevention, or real-time operational analytics have been undertaken;

(d) if so, the measurable outcomes or learnings from such pilots;

(e) whether Government is collaborating with technology institutions or private sector innovators to co-develop or localize AI solutions suited to Indian Railways' systems?

ANSWER

MINISTER OF RAILWAYS, INFORMATION & BROADCASTING AND
ELECTRONICS & INFORMATION TECHNOLOGY

(SHRI ASHWINI VAISHNAW)

(a) to (e): Technological improvements in Indian Railways (IR) are a continuous process. Artificial Intelligence/Machine Learning (AI/ML) based applications are a developing area. Some of the initiatives taken by IR in the area of AI/ML are as follows:

i. IR has adopted advanced/improved technologies like Online Monitoring of Rolling Stock System (OMRS), Wheel Impact Load Detector (WILD) for predictive maintenance of rolling stock.

ii. A Memorandum of Understanding has been signed between IR and Dedicated Freight Corridor Corporation of India Limited (DFCCIL) in July 2025 for induction of wayside Machine Vision based Inspection System (MVIS). This is an AI/ML driven system for detecting hanging parts or missing components in moving trains.

iii. A Memorandum of Understanding has been signed between IR and Delhi Metro Rail Corporation to induct Automatic Wheel Profile Measurement System (AWPMS). The AWPMS allows for automatic non-contact measurement of train wheel profile ensuring real-time measurement of wheel geometry and wear.

iv. Centre for Railway Information Systems has signed a Memorandum of Understanding with Digital India Bhashini Division for auto language translation for handling of user complaints in any of the 13 scheduled languages.

v. Centre for Railway Information Systems has signed a Memorandum of Understanding with Indian Institute of Technology Delhi for enhancing efficiencies in the area of train operations.

vi. Centre for Railway Information Systems has signed a Memorandum of Understanding with Indian Institute of Technology Mumbai for adoption of generative AI in transportation and related sectors.

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