SMART SOLUTIONS FOR RAILWAYS

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ABSTRACT:

The main driver behind Smart Railways is efficiency. Advanced technologies such as automation, artificial intelligence (AI), and machine learning have the potential to revolutionize the railway industry. The implementation of digital technologies will lead to operational efficiency, cost benefits, higher customer value, and faster and better services in the railway sector. Integrated security, predictive maintenance, and asset management are a few of the new areas of technology deployment. Smart Solutions for railways is designed to reduce the work load of the user and also the use of paper.

LITERATURE SURVEY:

S.NO	PAPER NAME	ADVANTAGES	DISADVANTAGES	CONCEPTS
1.	Automatic Water level monitoring and Seat availability details in train using Wireless	Water management is used for water monitoring. IR sensor for	High performance	Water sensor, IR sensor, wireless network.

	Sensor Network.	seat availability		
2.	5G key technologies for smart railways.	5G based technologies for spatial modulation	Low communication latency	5G edge, hybrid multicloud.
3.	Remote sensors	Used for extension of railroad systems.	Redesigning not possible. Advancement is not applicable	Remote sensors, RFID.
4.	Internet of things in high-speed railway	High speed railway to access multiple technologies.	Environmental sensing of IOT service.	MIOT, Transceiver.
5.	Railway experiment on point electric heating system	Simplicity and efficient	Requires manual application for switching	Pulse width modulation
6.	Smart railway feasibility and applications	Low power consumption and high reliability	Requires various transmission and reception schemes	Long range radios.
7.	Railway ticketing with GPS as ticket checker	It helps in ticket checking facility.	GPS can disable automatically due to manual errors.	Advanced communication control and computing technologies
8.	Passenger monitoring model for	It helps passengers travel using a	It is applicable only for	It is used in reading ticket

	easily accessible public trains	transportation card.	passenger monitoring	control, monitors passenger, RFID ticket inspection
9.	High speed railway control and communicatio n system	Feasibility of cellular network for high- speed railway	Unnecessary handovers can be caused.	Cellular networks
10.	Failure management strategies for IOT based railway system	Reliability, security and solution to failure in management	Failure can occur in communication channel	Internet of things
11.	Train collision avoidance by using RFID	The control room can identify and avoid the collision before hand	It is not considered as much safe because of improper communication.	RFID tag, GSM module controller and android device.