# Smart Solutions For Railways

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| **Team ID** | PNT2022TMID01167 |
| **Domain Name** | Internet of Things |
| **Project Name** | Smart Solutions for Railways |

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# Literature Survey

| S.No | Title | Author & Year of Publication | Proposed Work |
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| 1. | **Modernization of passenger reservation system** | Shirish C Srivastava (2007) | This teaching case discusses the challenges being faced by the technology managers at Indian Railways (IR) in the current scenario of a resurgent national economy coupled with increasing customer expectations. In the face of growing competition from road and low-cost airlines, to retain its customers, IR has responded by changing its business rules. The Railway Ministry expects a rapid response from Centre for Railway Information Systems (CRIS) to incorporate all these changes in the passenger reservation system (PRS). The old PRS, which is time-tested and reliable, and has been serving the customers' needs for nearly two decades, is now proving to be relatively inflexible to match the rapidly changing business requirements. Although the current scenario of a constant need to change the programming logic of PRS has been making maintenance tougher for CRIS officials, they have realized that PRS is a time-tested, proven, and reliable technology. Though they would be happy to replace the old PRS with a new state-of-art system that would provide them greater maintenance flexibility, the repercussions associated with possible failure of the new system are far too serious. |
| 2. | **An Intelligent Transportation System Using Wireless Technologies for Indian Railways** | Shivesh Tripathi, V. S. Tripathi (2013) | Development of an intelligent transportation system for Indian Railways will increase its efficiency and safety. Speedy development of emerging technologies such as communication and computing, intelligent systems, technological development of railway industries can be effectively integrated over existing infrastructures for Indian Railway (IR) to develop and design railway intelligent transportation system (RITS). The use of RITS architecture encourages structured development and integration of intelligent transportation systems (ITS) that lead to maximization of benefits by minimizing redundancies and maximizing capabilities. This paper discusses feasibility of using wireless technologies for a multi-layered RITS architecture that can be designed for integrating generated information. The paper also addresses the design issues and challenges in the IR scenario, particularly safety aspects. |

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| 3. | **Ticketing Solutions for Indian Railways Using RFID Technology** | Venugopal Prasanth, Hari Prasad R, K.P.Soman (2009) | Modernization of Indian railways has always been a question in focus for the development of the basic infrastructure of our country. Since the railways represent one of the best modes of transport available to the common people, it would be impossible to just keep increasing the fares to meet costs incurred due to maintenance, the large workforce and the expansion activities. The railways should consider upgrading itself to cutting-edge technologies for better efficiency and cost reduction. One such up gradation is the role of information technology and e-ticketing which is achieved with the help of RFID technology. This RFID technology has been extensively used in the identification process these days with the help of a card and a reader. The idea has evolved from a systematic study of the computerization of railways and the loopholes in the present day system. A simple theoretical model is proposed which when implemented could result in an easier and better management of the tedious ticketing process. |
| 4. | **A QR Code Based Processing for Dynamic and Transparent Seat Allocation** | Mehul Yadav, Sumedh Kurundkar (2013) | In Indian Railways transport system and in most other public transport system a passenger cannot book for a ticket after the charting of train is done and a seat remains unused if a passenger did not board a train or cancels his ticket after the charting of train is done our approach to overcome it is by a dynamic seat allocation system using QR Code containing the URL to an online website for railway reservation has been developed. In a QR code a passenger specific URL is stored, when Hand held Terminal device running on android OS encodes this URL by the Check-in an passenger which is updated in the central database and any passenger who don't board on the train his QR code check-in procedure is not done and after the specific time interval the ticket for it is automatically made available in the system for booking to other passengers. |

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| 5. | **Train Ticketing System Using Smartcard** | Abu Abraham Mathews, Amal Babu P (2014) | The goal of our project is to attain improved travel information and electronic ticketing using smart cards. The smart cards are similar to that of an ATM, so that they can be recharged and can be reused often. Smart cards are secure portable storage devices used for several applications especially security related ones involving access to the system's database. This looks into current trends in smart card technology and highlights what is likely to happen in the future. The smart card has a microprocessor or memory chip embedded in it that, when coupled with a reader, has the processing power to serve many different applications. The smart cards are user-friendly and so it can be used for Public Transport Networks (PTNs).It can also be noted as a service-oriented architecture. Railways are the important key aspect for the development of the Indian revenue. Many people are in need of train transportation than any other means of transportation because a number of people may travel at the same time. So people may prefer smart cards for the traveling purpose instead of booking the tickets. The existing fare booking system can be replaced by smart cards. |
| 6. | **Improvement of Railway Transportation System Using IoT Applications and Services** | Brojo Kishore Mishra, Raghvendra Kumar (2018) | In this chapter, the authors have introduced the use of Internet of Things (IoT) applications and services in Indian Railway Transportation System (IRTS). Railway transportation infrastructure is one of the most important factors for the development of any country. India is a developing country and we have a vision to transform India into a developed nation by 2020 using different technologies and tools. Therefore, we need to adopt smart and secure technology for advancement in each area especially in railway transportation for growth and betterment of the country. Further, authors has introduced Vehicular Ad-Hoc Network (VANET) concept for automatic railway gate controlling system to reduce number of accidents over railway premises and enhance the system components for the Indian railway transportation system to provide the comfort, security, safety and infotainment services to the passengers. |