LITERATURE SURVEY

SMART SOLUTIONS FOR RAILWAYS.

IOT BASED ACCIDENT PREVENTION AND MONITORING SYSTEM IN RAILWAYS.

Author: Abhisekh Jain S, ArvindS ,Balaji B.S Ram ,Viyas N.P.

They proposed method at solving long Prevailing problems in the Railway tracks. This Simple method of monitoring and assessment of the Condition of the railwaytracks can reduces major Disasters and save precious human being lives.

Author: G.Briundha, B.Perumal, C.Punithkumar, M.Sathyamoorthy .

They proposed that an Automatic railway gate control system at unmanned Level crossing changing the gates operated by Railway gate keepers and also the partial Automatically operated gates. It deals with the Decreased of time for which the gate is being kept Closed. To implement safety to the road users by Reducing the accidents, It usually occurs due to Carelessness and useless of road users at a times Errors made by the gatekeepers.

Author: B.Siva Rama Krishna, D.V.S Seshendra, G.Govinda Raja, T.SudharshanandK.Srikanth .

They proposed system that Introduced Bluetooth based technology, to reduce The train accident. Two digital based IR sensors are Inserted at front ends of the inspection robot which Monitors the track to detect crack and gives the Crack location in railway via Bluetooth to mobile Phone.

OUT-OF-ROUND RAILWAY WHEELS.

Author : J. C. O. Nielsen and A Johansson.

This literature survey discusses the state-of-the-art in research on why out-of-round railway wheels are developed and on the damage they cause to track and vehicle components. Although the term out-of-round wheels can be attributed to a large spectrum of different wheel defects, the focus here is on out-of-round wheels with long wavelengths, such as the so-called polygonalization with 1-5 harmonics (wavelengths) around the wheel circumference. Topics dealt with in the survey include experimental detection of wheel/rail impact loads, mathematical models to predict the development and consequences of out-of-round wheels, criteria for removal of out-of-round wheels and suggestions on how to reduce the development of out-of-round wheels.

HIGH SPEED RAILS.

Authors: Anuj Golya

Dheeraj Sharma

Dhruv Garg.

In the current situation, Republic of India reaches the planet category equipment and prepared to contend with the highest leaders of the universe. Republic of India succeeds in launching the missiles and satellites, got well trained and unbeatable defense to safeguard the state and holding high category transportation facilities at intervals it. Republic of India full-grown into the prime role of transportation and rail business is that the key purpose of the Indian transport system. Within the field of rail transportation, Republic of India got such a big amount of experiences whereas implementing the recent technologies. This text goes to debate regarding the high speed trains in Republic of India. This analysis might relate to the current scenario of the high speed trains within the world countries additionally as in our nation.

The study would possibly embrace the initiation plan of the high speed rails in Republic of India. The calculable stations were hand-picked for the high speed rails and also the international countries like Japan, France, Korea, China area unit showing a lot of interest on funding Republic of India to complete the assignment. During this special amount Government of { Republic of India|Bharat|Asian country|Asian nation} fashioned a singular department for the high speed railways named High Speed Rail Corporation of India Ltd. This paper concentrates on the event and execution of the design was established by the govt. in a good manner. The japanese passenger train saw the appearance of options like Automatic Train management (ATC), Centralised control, shorter train lengths and ballastless tracks.

INDIAN RAILWAYS.

Authors: Ramesh Kumar singh.

Indian Railways is the best transportation facility provider and biggest economic payee of the Indian government as well as biggest social service providers for the nation. Indian Railways historically established by the Britishers through East India Company (EIC) for the Business and to rule the whole Indian continents. Numerous studies has been done so far now concerned to its union, labour, industry, employment etc. Here in this paper it has been tried to focus on decadal growth of Indian railways with the help of secondary data source e.i. time series data. The literature review and secondary data on statistical summary of Indian Railways has been analysed for the average annual growth rate, number of employees and officers, total employees' wages, railway stations, infrastructure etc.

A SURVEY PAPER ON VALUABLE SECURITY SYSTEM IN RAILWAYS USING BIOMETRIC AND WIRELESS COMMUNICATION.

Author: Prof. Suhas Kothawale , Ms. Aarti Dugad , Mr. Arpit Mohorkar , Ms. Vaishnavi Agrawal, Ms. Devayani Tayade.

The important objective of this device is to provide the security and alarm system to the Valuable Carrying in Railways which can be used by individuals which require a cheap but reliable security system. The idea behind this project is to provide its users with a simple, fast and reliable way to get help during emergency situations. The device can be placed at any remote location which can be easily accessed by the user. It uses Biometric for identification of an individual and provide security function such as electronic signature creation, valuables along with weight calculation of the valuable for security purpose. It uses a microcontroller for system control, GSM (Global System for Mobile Communication technology for communication and sends SMS containing the emergency message and the GPS (Global Positioning System) location of the sender by which it will be beneficial for the growth of Indian Railway Economics.

AUTOMATIC EMERGENCY AND SECURITY SYSTEM FOR RAILWAY TUNNEL USING PLC.

Author: Yuvraj K jagdale, Niraj A Awasarkar, Rahul R Kukkar, Aadesh B Sawale, Rajashree S Kadam.

ITS (Intelligent Traffic System) is a topic of huge concern To our developing world and a lot of prior research has Been done but due to diversities of technologies and fields. The absence of a unified system exists. Acy M. Kottalil et.al Proposed a model of Automatic RailwayGate Control System using IR sensors for detection of trains at railway Crossings and controlling level crossing gates Accordingly. But the

system is considered to be very Less reliable due to the presence of very highly sensitive IRSensors which is considered to compromise with the Sensing in the presence of sunlight. Anjali Jain et.al came Up with a Collision Detection and Avoidance System in Railways Using WiMAX the system incorporated 4G WiMAX with GPS for calculation location of equipped Locomotives the system is able to clarify the fact that one To one collisions can be avoided by using it however a Decrement in one to one collisions is observed with the Use of advanced automatic signaling in railways. Since This system might not be able to report collisions at level Crossing considering accidents at level crossings are Considerably trending the capital invested in the system Will not be efficient enough. Another microcontroller Based approach was discussed by Krishna et.al using 8952 Microcontroller and sensors to sense the location of train and act accordingly to control the movement of level Crossing.But the use of a small scale approach for a really complex .

Network will not be sufficient enough to uphold the Requirements of railways also the reliability of the system Will not be good enough. A PLC based approach was Followed by Mahesh Nandaniya et.al with real time Monitoring using SCADA the approach is reliable but the Capital investment in every level crossing by single PLC Will result inefficient in a way since there is a very large Quantity of level crossings and controlling every level Crossing with a PLC of its own will increase the capital cost

By many folds. Subrata Biswas et.al discussed an Approach for Pressure Sensed Fast Response AntiCollision System for Automated Railway Gate Control the system.

RAILWAY CYBER-SECURITY IN THE ERA OF INTERCONNECTED SYSTEMS.

Author: Simon Soderi, Daniele Masti,Yuriy Zacchia Lun.

Technological advances in the telecommunications industry have brought significant advantages in the management and performance of communication networks. The railway industry, where signaling systems are now fully computerized, is among the ones that have benefited the most. These interconnected systems, however, have a wide area exposed to cyberattacks. This survey examines the cybersecurity aspects of railway signaling systems by considering the standards, guidelines, and frameworks most widely used in the industry. We dedicate specific attention to communication networks since data communication systems are essential to signaling architectures. To this end, we explore using dedicated cyber ranges as an enabling technology to model attacks to computer networks, emulate attack-defense scenarios, study vulnerabilities impact in general, and finally devise countermeasures to them.