IOT based Smart Solutions for Railways

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LITERATURE SURVEY

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| S  N  O | BLOCK DIAGRAM | ALGORITHM/  METHODOLOGY/  SOLUTION | OUTPUT | FEATURES | DRAWBACKS |
| 1 |  | The train is one and only most widely used transportation, and not only for this they are used for goods transportation. Indian railways are not able to facilitate the customer properly due to crowded amount of people. Statistics show that the leading cause of death by injury in railways traffic accidents (two train collision each other). There are number of causes for which an accident can occur, some of them are; lack of training for driving or less use of mobile phone while driving, unskilled drivers, driving while intoxicated, bad railway tack condition, overloading in train and negligence traffic management. In this survey paper, we briefly review selected railway accidents detection techniques and propose a solution. Rear end crashes occur mainly due to obstacle and crack in tracks. According to recent statistics, a major percentage of train accident happen due to not proper track of railway track. In feb a train was travelling in the forest range of Bihar state were five elephant were hit by the train which was moving with high speed. Collisions of train happened in last year June were the Indian railway minister felt guilty. a moderate rate of 2% fatalities compared to all other types of crashes, it represents the highest rate of injuries that is 22% and also the highest percentage of loss of life, being 28%. There have been enormous efforts to develop an algorithm in the field of automation of smart railways Systems (ASRS).An intelligent railways transportation system (IRTS) is an advanced application, which aims to provide services and protect the life of people inside and also outside the railway. The existing system in semi- automated railways accidents. The main objective of this study is to provide frameworks on the development of smart train automation method that can avoid collision risk vehicles, detect their relative distance and speed and therefore inform the driver about a probable accident. The system we proposed will prevent collision of any form of accident in the railways system. Existing Works [1] Most of the public transportation infrastructure in European cities is easily accessible. |  | Sensor used for real time monitoring of railway  [21] the development of railways in India dates back to second decade of the nineteenth century. India railway system is an important lifeline in our country. Lights and fans can be on off by using special logic circuitry. An accident happening due to track breakage has been a big problem in railway sector.  **1. Iconic structures with state-of-the-art facilities.**  **2. Congestion free non-conflicting entry and exit to the station premises.** **3. Segregation of arrival/departure of passengers.** **4. Integration with other modes of public/private transport systems like bus, metro, etc.** **5. All essential facilities at concourse like catering, small retail, washrooms, cloak rooms, drinking water, ATM, pharmacy and internet.**  **6. User-friendly international signage understandable by all sections of passengers.**  **7. Additional facilities like retail, shopping, hospitality, food courts etc.**  A smart station is designed to broaden its area of influence in a smart city, via the networks (trans- port, energy, digital). A smart station should take into account how its railway business will tie in with not only with key societal but also important business -related issues of the future. | Despite the fact that railway maintenance is a universal need, the materialization of the Smart Railway Maintenance vision is still in its infancy, as many challenges must still be addressed before stable, widely-accepted, globally applicable solutions for SRM are in place. These challenges mainly pertain to 29 the requirements identified in Section 2.C, which fall into the following four categories: (1) data processing, (2) anomaly detection, (3) predictive maintenance, and (4) scalability, with the latter being orthogonal to the other three.  In addition to the referred requirement categories, other aspects equally pertaining to all of them should also be considered, as they can play an important role in future, reliable, globally-applicable SRM systems.  These are: (1) standardization, (2) interoperability, (3) energy efficiency, and (4) security [4][42][43]. Standardization is essential for device compatibility and systems interoperability, thus fostering the development of widely used and scalable systems. On the other hand, emerging 5G solutions will not only provide resilient and efficient communications, but also secure channels to transmit and receive data [44]. According to the European Telecommunications Standards Institute (ETSI), the Railway Industry will have an active role in 5G systems, alongside with other application areas (Figure 3), due to the challenges that arise from communications, reliability, interoperability, and security in Passenger and Freight Information Systems (PIS and FIS), and Smart Railway Maintenance, especially when high-speed trains are concerned.  One very important aspect that is lacking in all of the existing railway maintenance systems is flexibility. In general, the construction of railway maintenance systems uses a vertical approach, in which every piece of the system is specially built for the specific application at hand |