

Study and Development of Automatic Retractable Bridge for Disabled People A Review

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Abstract: The main aim of this project is to automate railway track pedestrian crossing without use staircase & announce the status of the arrival for platform users. In this system is also used to avoid train collision problems. Because, now a day train accidents are occurring frequently in India. The one of the main reason for train accident is the traveling of two trains in same track in opposite direction. In order to avoid the accidents due to the above reason we have designed this project. This project identifies the status of each train using IR transceivers and informs it to microcontroller. If the sensor unit identifies both train in same track means microcontroller automatically trip the supply of the trains, which is more than sufficient to avoid this kind of accident. This project is used to avoid the train collusion, thus we save the valuable human

lives and losses. So this project is useful for railway departments.

Keywords: Platform, Bridge, IR Sensors, DC Motor, Escalator

1. Introduction

The present railway systems in India are not automated which are fully manmade. In railway stations normally we use bridges. This paper finds a good solution. Mainly the tracking of a train is sensed by sensor, this is used for automatically close/open the mobile platform. In the Indian railway framework physically challenged individuals and senior nationals are use trams and flyovers to cross the railway Platforms, so they feel troublesome. To defeat this issue, a programmed mobile platform is proposed in this paper. The versatile Platform is joined in the middle of the railway tracks in the

side of the intersection Platform. At the point when there is no train landing in the station, the versatile Platform will be opened and consequently moving like lift. The physically challenged people will utilize the moving Platform to pass the intersection Platforms. At the point when the train is arriving, moving Platforms will be shut. The train entry sign will be The present railway systems in India are not automated which are fully manmade. In railway stations normally we use bridges. This paper finds a good solution. Mainly the tracking of a train is sensed by sensor, this is used for automatically close/open the mobile platform. Declared in a voice framework and demonstrated by LED signal. The proposed framework gives a superior answer for exchanging of physically challenged people in one Platform to another Platform without utilizing fly over and metros.

A definitive point of this frame works to enhance the Indian railway platforms to help the physically challenged people to cross the intersection Platforms. The exchanging of physically challenged people starting with one Platform then onto the next Platform is troublesome by utilizing fly over. In this framework portable plates are connected in the middle of the railway tracks in the side of the Platforms. At the point when there is no train landing in the station the portable

Platforms will be opened and consequently moving like lift. The physically challenged people will utilize the moving Platform to pass the Platforms. At the point when the train is arriving, moving Platforms will be shut. The train entry sign will be declared in a voice framework and demonstrated by LED signal. The fundamental disadvantage of Indian railway is moving up on the fly over for a physically challenged people are troublesome. The proposed framework gives a superior answer for exchanging physically challenged people in one Platform to another Platform without utilizing fly overs. The mobile plates between two Platforms associate the Platforms and the lift consequently moves.

2. Literature Review

2.1 Literature Survey on platform concept:

Yoongho Ahna et al [1] did estimation of current situation and estimation of walking effort using forecast model and concluded that the congestion problem would move from existing platform to concourse platform. Akhila Mohan et al [2] has used mobile platform the tracking of train is sensed continuously which automatic open or close the mobile platform. P.B.Buchade [3] has used mobile platform with fiber

sensor IC89651rd2 and platform designed with two powered wheel .He designed and developed fiber optics sensor interface to controller for mobile platform. Christopher Ehrmanna, Philippe Isabeyb, Jürgen Fleischera et al [4] did condition monitoring on various rack and pinion arrangements. In this publication the necessity for condition monitoring of rack and pinion drives is shown. Further on, it is pointed out that such a system has to be specifically designed regarding the specifics of such drives and that such a system does not yet exists. Jiten Shaha1 et al [6] did data collection concluded pedestrian time is faster during afternoon or day time then evening.

2.2 Literature Survey on Bridge used:

Manuel Neves1 et al [7] did Ground investigation, bridge reconstruction and station improvement and concluded that sustainable development can be achieved by maximizing use of existing structure rather than demolished reconstruction. Vinicius Alvesa, et al [8] did identification by data based method and model based method and concluded that requires adjustment of some of routines incorporate to solve train bridge dynamic problem. G. Leena et al [9] used GSM technique. This system reduces the wasting time at the railway crossing identify the railway arrival of train there by closing

the gate. Midhun B. Et al [10] did steel railway bridges are design using is800:2007 and euro code 3 and concluded that the grade of steel increases and deflection is also increases but total weight is decreases. Steven J. Lorenc et al [11] has used robot for maintenance of bridge, remote inspection, spray washing,paint removal & painting and concluded that it has been designed at relatively simple modification to existing equipments. Morita Shiro et al [12] did various experiments on high strength steel. In this paper two high strength steel were identified and classified into five steel according to their strength and ductility. Bohus leitner [13] did collection of various accident report and develop common hazards analysis and concluded result of risk assessment depends upon railway accident scenario details. Hannah Bodendorfa, et al [14] did data collection and concluded that Highest capacity at railway station 103.77 person/min upstairs and 107.77 person/min. Sayali R. More et al [15] has used mechanism of anti-collision system automatic gate controller and track misalignment and has proposed safety of railway accident detection provide emergency assistance needed of an accident occurs.

2.3 Literature Survey on sensors used:

Ahmed Salien et al [16] has used SI sensors and microcontroller for Closing and opening of railway crossing. A new approach for improving a safety at train collision unless has been suggested a regular assessment of safety showed be done. Seh Chan Oh et al [17] used technology which getting signal from multisense technique and inform to ccr and said that multi sensor is main part in the configuration design for fallen object in monitoring area. Wayne F. Zimmeman et al [17] used duel speed mat operation (90 and 120rpm) and flat steps concluded that It save the energy and duel speed of escalators with the higher speed used during peak hours allow for efficient operation. Velmurugan IC et al [18] used 3 IR sensors and pic microcontroller 16f877a. This paper focuses on the sensor technology used to generate condition monitoring data to unable practical condition monitoring. Nikhil Tripathi et al [19] did project in which PID controller is used because of its great effect on stability. In this paper, an attempt has been made to review various literatures for the classic controller technique introduced by the different research for tuning of PID controller for speed control of dc motor to optimize the best results. G. Prabhavathi et al [20] did research using infrared sensors and stepper motor to close the platform automatically. This paper states thus the

tracking of the train is sensed continuously which automatically closes open the mobile platform is partially automated which is beneficial for passenger to cross the rail grade crossing. Saranya M. et al [21] did research using at mega 328 microcontrollers to detect train arrival and accidents and radio frequency transmitters and receiver.K. Vidyasagar et al [22] did automated control system at level crossing position and two vibration sensor and ultrasonic sensor to detect unauthorized object at the track and concluded that the proposed mechanism is a approach to safeguard the human and to curtail the train accidents. Ashwini Sherwade et al [23] has used pic16f877a microcontroller to minimize human efforts IR sensors are used to receive signals form arrived train and has proposed industrial prototype of a non-instructive, real time, phase area fraction meter which uses the different electromagnetic properties system. Siti Asmad Daud et al [24] has used matlab software to detecting object by getting signal from IR sensor and concluded that IR sensor rig is capable to capture a data in terms of distance between the sensor and object. Nisha S. Punekar et al [25] has used GSM and GPS technologies allows the system to track train and has proposed obstacle detection at the railroad level crossings for the safety of railroad operation.

Conclusion:

The programmed mobile platform gives the brilliant office to the physically challenged people in railway intersection to cross the platforms without utilizing flyovers. This framework gives an extreme change of Indian railway system. The framework gives completely programmed control. The platform limit of bearing weight will be expanded by utilizing pressure driven plates which have the ability of extremely solid, stainless and keeping high limit of weight.

Future Scope:

To make this idea more effective following features can be incorporated:

☐ *Partial automation:*

None of the railway security systems are fully automated since the schedule and the situations associated with trains are not always the same that is manual operation of platform. Hence partial automation ensures more safety.

☐ *Bidirectional detection:*

Trains in both directions can be detected and necessary steps are taken each time.

☐ *Double Detection:*

If trains approach same track in both directions with the help of sensors, we can detect the situation to avoid collision and give alarms to the loco pilots.

☐ *Double crossing:*

If there are two rails in between platforms, then automatic platforms can be arranged in both sides so that they open and close as per the arrival of trains

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