



Recent Advance Straddling Bus by using Arm Microcontroller and Programming

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Abstract:

As in current scenario worldwide is facing a buzz traffic problem so that also this paper presents a new concept of solving the problems of 21st century's megacities of the planet. Bangalore, Delhi, Mumbai. According to the Tom-tom Index reports, the traffic congestion within the city of Los Angeles in the United States of America topped the list for the second year in a row Chengdu, China, Recife, Brazil Salvador, Brazil Bucharest, Romania. Moscow, Russia, Rio de Janeiro, Brazil, Istanbul, Turkey. Dubai, Bangkok, Dhaka, Addis Ababa, Lagos and other great cities are getting chaotic by the day in spite of plethora of facilities. So for the solution of this problem we are going to introduce a double Decker Straddling bus as we all know straddling bus has made amazing progress in China. This bus used as the purpose of passenger travelling just like a metro train on road. This paper has give a concept of Double Decker straddling bus implementation form of Straddling bus in worldwide country for development purpose. Various available techniques and method, selection of sheet materials, engine power source capacity, equipment and their requirements, applications and other problems associated with straddling bus have been discussed in this paper. It also discussed the advantage avenue for future work which is needed to be carried out to put this technique to the next level of development.

Keywords: Elevated platform bus, Double Decker, Microcontroller, DC motor, RFID reader, RFID tag, LCD, IR sensor, Ultrasonic sensor, Buzzer, DC motor drive.

I. INTRODUCTION

If we start seeing long worm-like vehicle swallowing up cars on worldwide highways, don't be alarmed. Also electrical vehicle development is sustainability growth to minimized the pollution control as the same ways we are going to present the concept of Double Decker Straddling bus essentially oversized the trains that have been hollowed out to allow the cars through – sort of like mobile tunnel. Approximately 1800 people can board the bus, removing the need for additional subway system is pollution-prone cars. The company behind the buses estimates each one will cut fuel consumption by 1000 tons and carbon emission by 2500 tons, city lab reports Avadhesh Kumar (2008) "An Innovative Concept of Double Decker Straddling Bus: Optimised Solution of Road Traffic & Mass Transportation to World Megacities" Contact Us: info@arseam.com; submitpaper : editor@arseam.com download full paper : www.arseam.com China don't yet have the extreme driving culture America does. The proposed Double Deck straddling bus would be all electric controlled, travel approximately 40-50 kmph, and give seven feet of subway to cars traveling underneath. If the test actually happens it'll be first time Double Decker straddling bus become more than first through experiments. The idea was first propose way back in 1969, and Song revived the plans in 2010 but intimately well in China and our concept is going to introduce four trailer double Decker straddling bus which are optimized solution of road traffic and mass transportation also minimized the fuel consumption which are best solution of ecofriendly solution of worldwide INDENT ALL OTHER PARAGRAPHS: .2" (5-6 SPACES)

II. WORKING

This proposed system is an autonomous straddling bus and it eliminates the need of any driver. Thus, any human error is

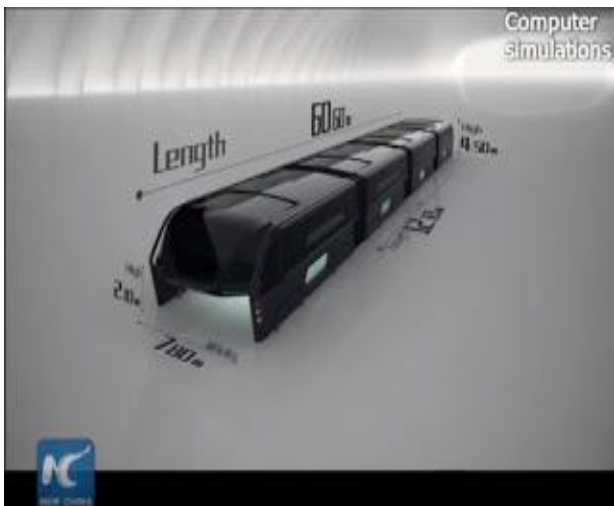
ruled out. In this project microcontroller from ARDUINO family has been used as CPU. Whenever the train arrives at the station it stops automatically, as sensed by an IR sensor. Then the conveyer starts automatically so that the passengers can go inside and outside the bus. The movement of the bus is controlled by a motor driver IC interfaced to the microcontroller. The train incorporates a buzzer to alert the passengers before starting. As the bus reaches the destination the process repeats thus achieving the desired operation. Further the project can be enhanced by making this system more advanced by displaying the status of the bus over an LCD screen for the convenience of the passengers. The status of the train consists of the parameters like current station, next station, number of passengers on board etc. In this RFID based automatic fare collecting system using RF ID card Ticketing explained that a system that uses the station based location information. Card is sensed twice while entering the bus and while leaving the bus. The deduction of travelling fare is based on the number of stations covered between two punching



Figure.1. Straddling Bus

III. INNOVATIVE CONCEPT

At our Current trends there are four main models on public transportation i.e. subway, light rail, bus rapid transit (BRT), and the normal bus. The proposed system is Double Decker straddling bus and it eliminates the need of driver, thus any human error is ruled out, in this project microcontroller from ARM family has been used of CPU, whenever the train arrives at the station it stops automatically as sensed by an IR sensor, then the converge starts automatically so that the passengers can go inside and outside the bus. The movement of the bus is controlled by a motor driver IC interfaced to the microcontroller. The train incorporates a buzzer to alert the passengers before starting, as the bust destination the process repeats thus achieving the desired operation. The advantage of double Decker straddling bus over straddling bus is that for double public transportation hence reduce the traffic as well as transportation system. Since the bus is no higher than a tractor – trailer, roadway over passes will usually not be a problem, the bus world run along a fixed route, edge of the two lanes it straddles and the overall height 5 to 8.5m (20ft. In to 24 ft.) The passengers onboard the bus are exacted to experience a ride comparable to riding in the upper level of a double Decker bus. They will board and alight at station at the side of the rode with platforms at the bus from a station similar to a pedestrian over pass. The bus will be electrically power using over head line or other root electrical contact system designed for it, supplemented with photo voltaic panels, batteries, or supper capacitors on board.



IV. FUTURE SCOPE

A big concern on top of urban transportation planner's mind is how to speed up the traffic: putting more buses on the road will jam the roads even worse and deteriorate the air; building more subway is costly and time consuming. Well, here is a cheaper, greener and fast alternative to lighten their mind up a bit: the straddling bus, first exhibited on the 13th Beijing International High-tech Expo in May this year. In the near future, the model is to be put into pilt use in Beijing's Mentougou District. Proposed by Shenzhen Hashi Future Parking Equipment Co., LOtd., the model looks like a subway or light rail train bestriding the road. It is 4-4.5 m high with two levels: passengers board on the upper level while other vehicles lower than 2 cm can go through under. Powered by electricity and solar energy, the bus can speed up to 60 km/h carrying 1200-1400 passengers at a time without blocking other vehicles'

way. Also it costs about 6 500 million yuan, about 477 crore Rupees to build the bus and a 40 km-long path for it, only 10% of building equivalent subway. IT is said that the bus can reduce traffic jams by 20-30%. The straddling bus combines the advantages of BRT; it is also a substitution for BRT and subway in the future. As you all know, the majority of vehicles on the road is car, and the shortest, also the ar. Normally the overpass is 4.5-5.5 m high. The highlight innovation of straddling bus is that it runs above car and under overpass. Its biggest strength is saving road spaces, efficient and high in capacity. It can reduce up to 25-30% traffic jams on main routes; running at an average 40 km/h, it can take 1200 people at a time, which means 300 passengers per cart. Nowadays many big cities have remodeled their traffic signaling system, to prioritize public buses, that is to say when a bus reaches a crossing, red light on the other side of the fork will turn on automatically to give buses the right of way. The straddling bus can learn from this BRT method. The car can make the turn with the bus if that is the direction it wants to go too; if not, the red light will be on to stop the cars beneath while the bus take the

V. REFERENCES

- [1]. Andy Lindsay, 2005 by Parallax Inc, "Chapter #1: Detect Distance with the Ping)) (TM) Ultrasonic Sensor".
- [2]. Guruprasad Patil ¹, Dr.C.R Rajashekhar ² - RFID Based Metro Train System , International Journal of Advancements in Research & Technology, Volume 3, Issue 5, May-2014 ISSN 2278-7763
- [3]. Akshatha R.Dr. J Meenakumari -Enhanced &Integrated E-Ticketing - An One Stop Solution, International Journal of Advance Research in Computer Science and Management Studies, Volume 3, Issue 6, June 2015
- [4]. Prakash Ratan , Chandra Jogi - Auto Metro Train to Shuttle Between Stations - International Journal & Magazine of Engineering, Technology, Management and Research , Volume No: 2 (2015), Issue No: 5 (May)
- [5]. R.Valarmathi, G.Karthika -Smart Ticketing System in Metro Rail -International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering , Vol. 3, Special Issue 3, April 2014
- [6]. Thabit Sultan Mohammed¹, Wiisam Fahmii All--Azzo ², Mohammed Ahmed Akaak³, Mohammed Laheeb Suroor⁴ Full Automation in Driverless Trains: A Microcontroller-Based Prototype - International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering Vol. 3, Issue 7, July 2014
- [7]. V.Sridhar ¹-Automated System Design for Metro Train - International Journal of Computer