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Smart Access Vehicle System

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I. INTRODUCTION

A likelihood, people moving into cities in search of convenient living. Traffic jam, pollution followed by, much more unpleasant effects, even on health and loss of time one everyone's daily basis- an aftermath for some overcrowded small city. With mobile-based application, real time tracking of vehicles using GPS technology, we have designed the smart access vehicle system. The mobile application features include- smart car parking system, local transportation location tracking and an efficient ambulance service. In most cities colossal number of cars parked, as the drivers are unaware of any nearest location for parking. In addition, any large and specified parking spaces are of small-scale. In a tendency of daily routines, many local houses with parking spaces remain empty during the day hours. Using these alternative timings to park cars and make use of house garages to resolve the traffic problems it causes in the roads by parking on the streets or places that disturbs traffic controls. In our system we also design a payment process between the housekeeper and car owner, an amount for a particular period- in exchange, a labor fee for providing car's maximum security and hence, generate a business. Next feature on tracking transportation services, such as local buses to enquire position of current location of local buses. Involving IoT - LoRaWAN and RF Transceivers technology, for more efficient real time tracking. Using this process for operation instead of GPS, the real-time site of the bus can be picture. An api connection is set up to locate the bus approximate to the closest bus stop. Another feature involves ambulances providing services much more effective. This is by tracking and contacting the nearest ambulance available. Application map can later reveal the less traffic congested roads to get to the hospital. The mobile application is an interface for system interactions, including the real time database by IoT cloud computing service, with the end users.

II. OBJECTIVE

The objectives of this system embrace the following terms- Save Time, Lives and Value using Technology.

III. PURPOSE

A simpler and one compact design of application for vehicle availability to further advance into the Smart City Development.

IV. METHODOLOGY

The mobile application is developed in angularJs for front-end web framework and Cascade Style Sheets as a programming language. Apache Cordova framework is in use for the app development that enables wrapping up of source code instead of relying on platform-specific APIs like those in Android or iOS and hence it can run on both. Cloud computing in IoT acts as a database to store all records, which keeps track of every user connected to the system and maintains information. The application features include as below.

A. Smart Car Parking

The system will provide increased security and an IT business generation. A more smart and organised parking system.

B. Local Transportation Tracking- Buses

The LoRa wireless transmission is implemented to link between a base station and the bus stops. The local transportation, in this case, buses are fit-out with RF transmitter devices. It sends out data regarding positioning of the bus as per its specific identity, at all times. RF receivers are placed in the bus stops. It detects a bus when it is in range, and through LoRa communication transfers this information to the base station continuously. In the base station, the LoRa receiver collects the relay information from all such bus stops that are in its range, processes it as per information requirements, and keeps all of the essence information in a database. The cost to build such systems prototype only one-fifth of the amount required to equipping one conventional tracking system- the Global Positioning System.

C. Smart Ambulance Service

A more systemized process and even more methodical way to prepare for emergency patient pick up and reach for service to the nearest hospital by following the best route for traveling as fast as possible. In countries, such as- Bangladesh, the road spares private ambulance services. These ambulances are equipped with transmitter devices that avails its location when called in emergency. The ambulances in bound are notified, and the closest vehicle moves towards the location of the emergency. The ambulance is in accompany of real-time traffic tracking to urgent the better road to the hospital and help.

V. TESTING AND MONITORING FEASIBILITY

Private business companies or organizations will use these services and issue weekly reports supersede by monthly reports. Finally, released for use in small cities followed by metropolises and throughout nationwide.

VI. FUTUTRE IMPLICATIONS

This paper implies vast contributions and development in deepening the concept of "Virtual Response system," disaster response, a fully organized Service Unification on top of transportation service, user interface as improved as possible. This project believes to generate more and new revenue streams. Finally, with the advancement of IoT into AI, a system of few clicks application of uses to emergency response features such as- Fire service immediate response.

VII. CONCLUSION

It is about System and Software integration, concerning the use of Internet of things and implement its future development to Artificial Technology. The mobile application potentially supports intelligent transportation and parking access system. This can greatly benefit a city by providing solutions to **optimized parking, reduced traffic, and pollution; generate business, burn less daylight and hours.** An integration of the features advances to a more systemized system. A transportation-based unification using access vehicle system draws nearer to the **Smart City Development.**

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1

Jerrin George James, Sreekumar Nair.
"Efficient, real-time tracking of public transport,
using LoRaWAN and RF transceivers",
TENCON 2017 - 2017 IEEE Region 10
Conference, 2017

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