

Novel Approach for Driving Testing and Driving License using IOT

Guide: Warsha Choudhari, Neha Waware, Nikita Kate, Sonu Barwe;

Department of IT, Datta Meghe Institute of Engineering Technology & Research, Wardha, Maharashtra, India

nehawaware94@gmail.com; katenikita908@gmail.com; sonubarwe15@gmail.com;

Abstract:- Driving License is an official document certifying that the holder is suitably qualified to drive a motor vehicle .To prevent illegal licenses and therefore causing accidents ,a new automated system is proposed .This system can be implemented using Map Matching algorithm and Data Distribution algorithm .The proposed system need to design the wireless sensor for detecting result.

The proposed automated driving license test is advantageous over existing manual test . This will help in reducing the road accidents & illegal licenses .The driving license testing using the wireless sensor GPS to find the exact location of vehicle .Then after transmitter send the exact location co-ordinates to the server. Receiver protocol receive the coordinates and server can draw the graph of that co-ordinates .Hence we can say that the system increases the level of transparency and decreases the rate of corruption.

The proposed system is the elimination process of existing process to issue Indian driving license. For this the applicant will be allotted the test vehicle for test drive with the sensors connected embedded in vehicle sending data using wireless sensor network to remote server to get processed. Result analysis is done by comparing the received data. ZIGBEE is used as a gateway.

Keywords : GPS , Map Matching algorithm and Distribution algorithm and ZIGBEE.

I. INTRODUCTION

A driving license is an official document certifying that the holder is suitably qualified to drive a motor vehicle. One person is dying after 30 seconds of time because of road accident .To overcome the problem illegal licenses and road accidents. The study also indicates that the corruption is focused on agents that work as intermediaries between the officials and citizens. This practice of agent-usage promotes corruption and subsequently results in higher payment for licenses, reduces driving test quality and this eventually results in unskilled drivers on road. Hence the only solution for this problem is to implement an efficient, transparent and cost effective driver testing system. In the present scenario, the candidates who have applied for driving license have to appear for a practical examination. The practical examination comprises of two tests namely off-road test and on-road test. The off road test is for examining the candidate's ability in controlling the vehicle. The on-road test is conducted in light traffic on normal road.

Normally, the on-road test is carried out after completing off-road test. The off-road test tracks are of three types – H, S and 8 shaped tracks.

The proposed automated driving license test is advantageous over existing manual test. This will help in reducing the road accidents & illegal licenses .The driving license testing using the wireless sensor GPS to find the exact location of vehicle .Then after transmitter send the exact location co-ordinates to the server. Receiver protocol receive the coordinates and server can draw the graph of that co-

ordinates .Hence we can say that the system increases the level of transparency and decreases the rate of corruption. The proposed automated driving license test is advantageous over existing manual test.

1.1 Deployment Models

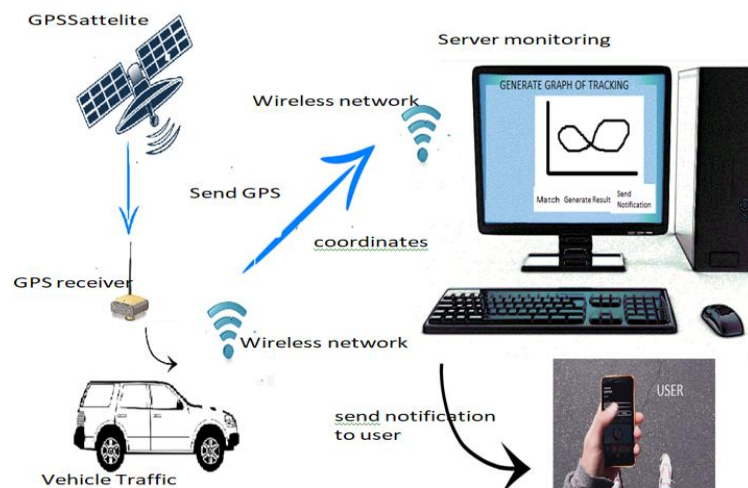


Fig :Deployment ModelsDriving License

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1.2 Work Done

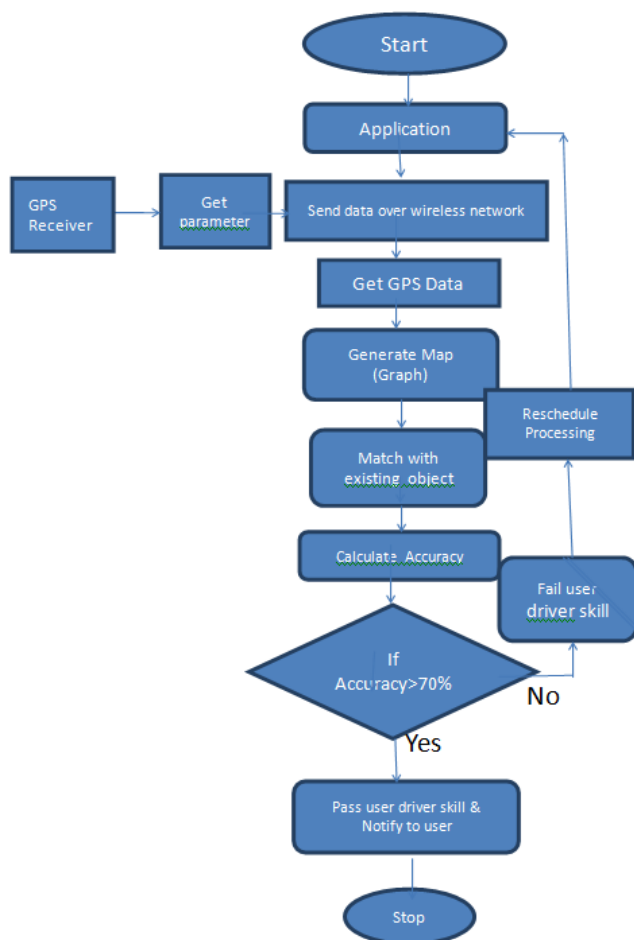


Fig. Proposed Architecture

The proposed work is thus the elimination process of existing scenario to issue Indian driving license .For this the applicant will be allotted the test vehicle for test drive with the Hardware device in vehicle sending data using wireless sensor network to remote server to get processed. Result analysis is done by comparing the received data with previous data

The map matching algorithm is matched the all co-ordinates from the graph.It match the co-ordinates that sends the GPS receiver. Wireless sensor network includes Global Positioning System(GPS) . GPS provide data for mapping, receives X,Y,Z coordinates according to position of a vehicle ,Map matching and pattern matching.

In our automated test driving we use GPS receiver. Due to this we get parameter send data over the wireless network then we get GPS data. Due to this data we generate map or graph. Then we match this existing object on this we calculate accuracy for calculating the accuracy we are given a condition

if accuracy is greater than 70% user will be pass the drive testing and notification message will be send to the user.

Distributed Algorithms :

Distributed algorithms are an established tool for designing protocols for sensor networks. In this article we discuss the relation between distributed computing theory and sensor network applications.

As mentioned before, a distributed system is modelled as a graph $G = (V,E)$, whose set of nodes V (with $n := |V|$) are the computing devices and whose set of edges E define which nodes may communicate with each other directly. One typically focuses on the locality of a problem, that is, on the maximal (hop) distance from which nodes must receive information as function of the number of nodes n .

In turn, we can emulate an MIS algorithm on a virtual graph where each node v with degree $\delta(v)$ emulates a cluster of $\delta(v)+1$ virtual nodes called $v_0, v_1, \dots, v_{\delta(v)}$. All nodes within each cluster are connected by virtual edges. In addition, v_i is connected to w_i if v and w are neighbours in the original graph. By definition of the MIS problem, each cluster v will have exactly one virtual node v_i in the MIS, and the index i of that node determines the colour, i.e., $c(v) := i$. Despite utilising elaborate and complex techniques, the currently bestknown deterministic colouring algorithm with running time $O(\log n)$ ever, as a node v needs to emulate $\delta(v)+1$ many nodes in the virtual graph, which each need to pick and compare random bit strings of size $\Omega(\log n)$ in every iteration, messages would have to contain $\Omega(\Delta \log n)$ bits in the underlying graph in order to emulate the algorithm at full speed. Luckily, we can fix this by simply letting each node choose a free (i.e., not yet occupied by a neighbour) colour from the range $\{1, \dots, 2\delta(v)\}$ at random, in each round. We again get an algorithm that terminates in time $O(\log n)$.

Map matching Algorithms:

Map matching is the problem of how to match recorded geographic coordinates to a logical model of the real world. The most common approach is to take recorded, serial location points (e.g. from GPS) and relate them to edges in an existing street graph (network). Matching observations to a logical model in this way has applications in satellite navigation, GPS tracking of freight, and transportation engineering.

Map matching algorithms can be divided in real-time and offline algorithms. Real-time algorithms associate the position during the recording process to the road network. Offline algorithms are used after the data is recorded and are then matched to the road network. Real-time applications can only calculate based upon the points prior to a given time (as opposed to those of a whole journey), but are intended to be

used in 'live' environments. This brings a compromise of performance over accuracy. Offline applications can consider all points and so can tolerate slower performance in favour of accuracy.

Random number generation:

Random number generation is the generation of a sequence of numbers or symbols that cannot be reasonably predicted better than by a random chance, usually through a hardware random-number generator (RNG).

Various applications of randomness have led to the development of several different methods for generating random data.

Random number generators have applications in gambling, statistical sampling, computer simulation, cryptography, completely randomized design, and other areas where producing an unpredictable result is desirable. Generally, in applications having unpredictability as the paramount, such as in security applications, hardware generators are generally preferred over pseudo-random algorithms, where feasible. so long as Sender and receiver can generate the same set of numbers automatically to use as keys.

Conclusion

The proposed automated driving license test is the advantageous over existing manual test. The usage of VB based technology for skill assessment in the automated driving test process eliminates human intervention leaving no scope for manipulation and negotiation. Hence we can say that the system increases the level of transparency in the driving skill test process and decreases the rate of corruption in the process of issuing the driving license.

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