

VIRTUAL RTO USING IOT AND MOBILE COMPUTING

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Abstract:

In this current world where technology is growing up day by day and scientific researchers are presenting new era of discoveries, the need for security is also increasing in all areas. At present, the vehicle usage is basic necessity for everyone. Simultaneously, protecting the vehicle against theft is also very important. To prevent non-licence from driving and therefore causing accidents, a new system is proposed. An important and very reliable identification method is RFID license code based authentication for driving. Proposed system consists of RFID license in which license number of a particular person, adhar number. RFID number is converted in the form of RFID code along with the vehicle details like vehicle number, insurance and PUC detail. Vehicle should have a RFID code reader that is RFID scanner using arduino capable of reading the codes of license

Keywords — RFID card, fingerprint scan check information about driver and vehicle, authenticate the driver is accessible to drive that vehicle.

I. INTRODUCTION

A person, who wants to drive the vehicle, should show the RFID license in the vehicle and after verification of RFID code with the vehicle, he/she can proceed for ignition, if he is not owner of that vehicle then firstly he should get the access of drive that vehicle from owner of that vehicle else code does not match with particular vehicle, ignition will not work. This increases the security of vehicles and also ensures safe driving by preventing accidents. The system implementation ensures that license is mandatory to who want to drive and to avoid driving with expired license. In this system we also include the fingerprint scanner with the RFID license tag. The RFID tag and the tags owner's fingerprint scanned by system if both match then only vehicle will be started otherwise it will be stay off. Check the fingerprint of vehicle driver which is also necessary with RFID tag, if RFID and fingerprint scan successfully then only the switch get ON and vehicle get started.

II. OBJECTIVE

1. Scan RFID code using RFID reader and check whether all information about card holder and vehicle.
2. It will check all information about driver like valid licence, adhar number, RFID number.
3. It also check the information about that vehicle like insurance and PUC is a live or not.
4. If all information of owner or accessible driver is correct then only the vehicle engine will get start otherwise engine stay off.
5. Check the fingerprint of vehicle driver which is also necessary with RFID tag, if RFID and fingerprint scan successfully then only the switch get ON and vehicle get started.

III. LITERATURE REVIEW

The vehicle security system has the following modules.

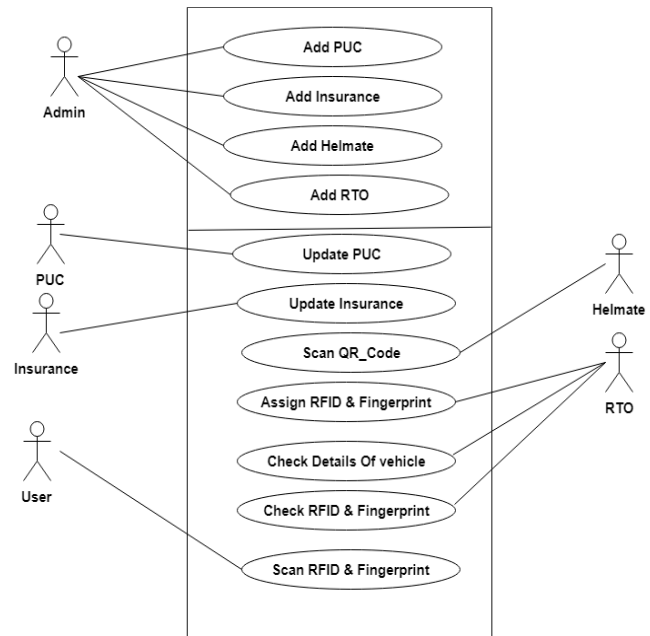
RFID recognition technique, embedded main board with various components.

1.It is important to read the whole data and get whole information about vehicle and driver. Android application sends information about vehicle and the driver using RFID card and reader if there is lack of information then vehicle don't get start.

2.RFID card: This is the card which contain the whole information about that card holder like licence number, adhar number, RFID number, vehicle number, RFID tag, insurance and PUC of that vehicle.

3.Remote monitoring software: An android application specially developed algorithm based software provides features such as read the information of RFID card and checks whether licence is expired or not also checks the insurance and PUC is alive.

4.Challenges: The biggest challenge is to verify the valid and live licence, insurance, PUC of driver and vehicle using RFID module. If all information is correct and the owner of that vehicle give the access to drive his vehicle to other person who had RFID card then only the vehicle will be start else vehicle engine stay off.



FUNCTIONAL MODEL AND DESCRIPTION

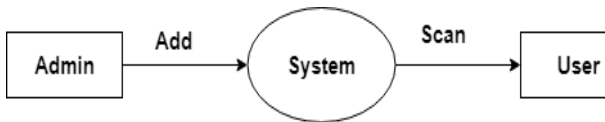
The RTO verification and detection system are used to collect RTO related data i.e. for sensor value data acquisition. Communication can be done by controller for sending data on internet wirelessly. Data processing has been done at server. All data collected and aggregated at server point. To get RTO information including PUC and Insurance, helmate related information in sensor value format it can be verified using RFID tag and fingerprint scanning. i.e. data management. The results collected from sensor are analyzed i.e. if any data is insufficient or loss the date of PUC and Insurance, then the vehicle will not started his switch. If any theft of vehicle want to thief of vehicle, he can't start that vehicle without scanning of RFID and Fingerprint of that vehicle owner.

Use Case View

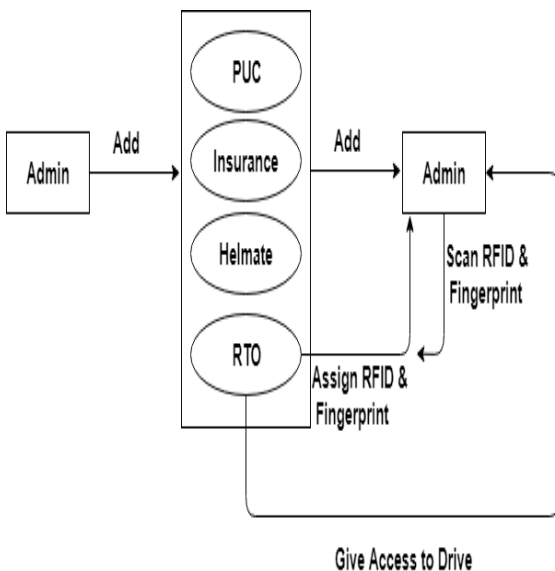
Use Case Diagram. Example is given below

A.Data flow diagram

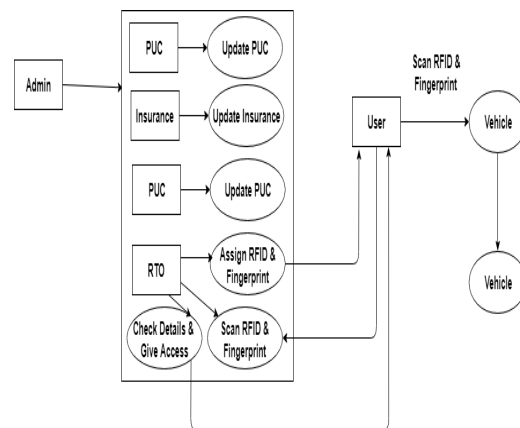
1. LEVEL 0 DATA FLOW DIAGRAM



2. LEVEL 1 DATA FLOW DIAGRAM



3. LEVEL 2 DATA FLOW DIAGRAM



2. System Architecture:

Admin: Admin Can Login on application and add RTO , Insurance Company and PUC dealer with Helmet Company who provide WR code on his helmets.

RTO: In RTO department they will add Vehicle with their all details like vehicle number, RFID-No and Adhar card number also added in the RTO department.

Insurance Company: Valid Insurance Company can login first. After that they will update insurance of vehicle by entering vehicle number which is already added in RTO. Entering the vehicle number insurance company able to update the insurance of that vehicle.

PUC Company: PUC Company also update the Pollution Under Control of the vehicle only after entering the vehicle number in system.

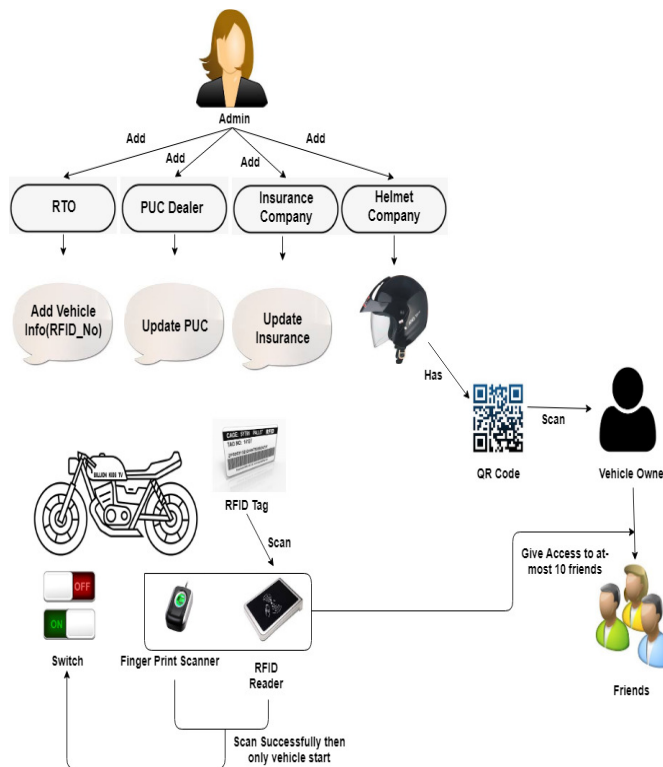
Helmet Company: Registered Helmet Company can attach the QR code to their

helmet for security of their user. This QR code is scan by user.

User: This android application used by users. Users can scan the QR code on helmet which is added by the helmet manufacturing company in built of helmet. This system's access is only registered person only by user. User can give access to his friends (only 10) to handle their vehicle and helmets or delete some user from access. Deleted users cant access original users tag or vehicle. In this system we also include the fingerprint scanner with the RFID license tag. The RFID tag and the tags owner's fingerprint scanned by system if both match then only vehicle will be started otherwise it will be stay off.

Architectural Design

A description of the program architecture is presented. Subsystem design or Block diagram, Package Diagram, Deployment diagram with description is to be presented. Then, from the aspects of compilation of information specifications and standards, construction of the unified network platform and RFID and fingerprint scanning based records check application platform, the key technology and content in the construction of Virtual RTO is sufficiently studied.



CONCLUSION

Thus we have concluded that, we have developed an android application system for check the information of accessible driver or owner and registered vehicle based on RFID card using RFID module. This system also show information of 10 accessible person who drive that vehicle assign by owner of that vehicle.

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