DL-Tracker: “Biometric Enabled Driving License Checker”

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Abstract: DL Tracker is electronic device which is useful for traffic police/RTO people to check driving license. In traditional license checking process user/driver has to carry driving license all the time and show to traffic police/RTO people which is time consuming process. If user lost or forget his/her license somewhere then he/she has to pay fine and he/she has to reissue license which is hectic process for them by visiting RTO office and lot of paperwork, this invention present new way for license checking. In this Traffic Police/RTO people take thumb impression of user/driver by using DL Tracker and users driving license will be display on screen of DL Tracker device. As DL Tracker uses thumb impression which is unique identity of user so it is easy to check and identify fraud license.

Index Terms: Biometric identification, Driving license, RTO, RTA.

1. INTRODUCTION

As with advancement in transportation field there is increasing in road users which leads to increasing in road accident. One of the reasons behind this is due to driving by user who don’t have driving license. Number of accidents happen due to unawareness of traffic rules as well as road rules, Teenagers driving and driving without safety tools such as helmet, seat belt etc. another issue is user who is not eligible to drive hold the vehicle [3]. Driving license is the official document which gives authority to its card holder to operate various types of motorized vehicles such as motorcycle, bus, car etc. on highways and some other roads to which public have access. Driving license is allowed only when user passes certain driving test as well as it ensures that user is aware of traffic rules as well as road rules and user is legally able to drive. This driving license is allowed only user having age greater than 16 which is helpful to prevent driving to teenagers. this all test as well as traffic rules awareness is to reduce accident risk. Since many users forget to carry driving license which makes them to pay fine even if they have driving license. Some people make duplicate license or without license they drive which cause accident on road as well as road traffic so there is need to check license. If user/driver lost his/her license then he/she has to reissue license for that he/she has to follow hectic process of visiting RTO office and lot of paperwork. Now license checking process is time consuming so traffic police most time check speedup license checking process so this DL Tracker is useful. This DL tracker helps to eliminate need of carrying driving license all time and also provides security as DL Tracker use thumb impression to check DL in database which is unique feature of human body. DL-Tracker that is Driving License Tracker is an electronic device that helps Traffic police/RTO people to check or verify original license of driver.

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Since many users forget to carry driving license which makes them to pay fine or make duplicate license also without license they are using vehicle making excuses that they lost license etc. this device is capable to identify users driving license without any users data available or any plastic card only need is to have fingerprint of user. It is different than traditional Driving License checking system on variety of concept. 1. Need not to carry driving license all time when driving. 2. Paperwork is reduced. 3. Saves time to check license. DL-Tracker is fingerprint access control system which is a biometric in nature, will enable automatic verification of identity by electronic assessment of behavior and/or physiological characteristics of a person to overcome the problems of Traditional Driving checking process. This technology developed a biometric access control system which is a biometric technique that offers an ability to provide positive verification of identity from individual fingerprint to access DLTracker System. Finger print of user will convert to 16 digit unique ID which is useful to access users driving license. If fingerprint is matched then Driving License copy of that user is extracted from DL database and displays on DLTracker. Here two type of DL databases are used, one is local database which includes users information such as name, address, adhere card, phone number, 16 digit unique id created from fingerprint features etc and driving license copy of that user but this local database contain users data of that state only for example user belongs to Maharashtra state will be included in local database of Maharashtra state because most of the user will drive in local state. In very rare case user will travels in other state. Other type of database is Global database which includes all users data from all states DL database such as country database. This global database also includes same fields such as name, address, adhere card, phone number, 16 digit unique id created from fingerprint features etc and driving license copy of that user. To remove the burden of accessing unnecessary records and to save time, this DLdatabase and if wont fount in local database then only it will check in global database.

2 RELATED WORK

Traditional method of checking driving license is to randomly visiting vehicle on road and demands for license. When user shows license, RTO/RTA people checks validity of driving license but this is time consuming process. If user is unable to show license then RTO/RTA people take fine as per rules or they hold vehicle. In this method problem is some user make
duplicate license without taking any training as well as user finds alternate path to avoid license checking also we cannot provide guarantee that fine collected by RTO/RTA people will be submitted to government. since this is very time consuming process it won’t be possible for traffic police check all vehicles[5] S.Ashwin S.Loganathan S.Santosh Kumar P.Sivakuma has defined new system to prevent non-licensees from driving and causing accident. This system consist of smart card which stores information such as name, license number, date of expiry, fingerprints often fingers, blocked status of license etc. and this smart card is issued by government is work as license for user. For this system vehicle such as car, bikes etc which should have to be capable for reading this smart card license. User of vehicle has to insert his or her smart card license in vehicle and swipe finger. If finger matches then only ignition get started otherwise ignition won’t get work. In this paper they also introduced seat belt detector which checks and prompts user to wear seat belt. But this system also have disadvantages that only registered user can use their vehicle other people such as friends or guest etc wont be able to use vehicle as well as it is possible that once vehicle get started by authorized person other user can use that vehicle [1]. J.Angeline Rubella, M.Suganya, K.Senathipathi, B.Santhosh Kumar, K.R.Gowdham, M.Ranjithkumar has defined new method for license checking based on fingerprint. In this system there are two modes master mode and user mode. With master mode users fingerprint and information get stored to keep track history of user in ROM of scanner. In user mode system will check for match. Whenever user crosses traffic rule police will scan user’s images and fingerprint using this system which will be helpful for them next time to check user’s history. In this paper they use sensor and microcontroller to get fingerprint and store in database [2]. Lalin L.Laudis, Amit Kumar Sinha, Saravanan P.D. Anand S has defined novel approach to overcome drawback of existing license checking methodologies which use iris technology of Biometrics. To use this system helmet for two wheelers & glass for four wheelers is compulsory. Iris pattern of driver is fixed in Smart driving license. Smart driving license is inserted in system provided. Engine only starts when iris pattern of driver is matched with iris pattern of smart driving license otherwise engine shutdown automatically. As this system scan iris pattern continuously other people than authorized one will not able to drive. with this system safety precaution such as helmet & seat belt became mandatory [3]. Hiroshi Takigami has defined system and method for driver license check with IC-Card. In this system driving license is constructed as IC card which is having storage to store driver’s information. Vehicle have card control through which system can read information from IC card to detect authorized user which is useful to decide operation of devices on said vehicle that is whether to allow to use vehicle or not [4]. D.Divya1 , S.Padmasarath has defined system to prevent non license user from driving. This system is similar to one proposed in paper [1]. Only thing is instead of fingerprint in this system they use finger vein. In this system card stores users finger vein information

3 OBJECTIVE OF PROPOSED SYSTEM
1. Develop DL Tracker system which is useful for traffic police or RTA/RTA people to check driving license. 2. Eliminate need to carry driving license all the time: As DL Tracker search driving license in DL database by using thumb impression of driver and displays on screen of DL Tracker. 3. Easy to identify duplicate/Fraud driving license hence provide security. 4. Reduce Time: Time taken by user/driver to search license as well as time taken by traffic police to check all details is reduced as thumb impression is unique identity of that person so only that person’s license will display. 5. Reduce card manufacturing cost.

4 DL-TRACKER
DL Tracker system is useful for RTO/RTA people to check driver/user license. In traditional License checking system traffic police ask driver to show driving license. If user is unable to show them he/she has to pay fine even he has license at home or he/she lost somewhere. So by using DL Tracker system instead of driving license, traffic police ask for thumb impression which is used to access DL data of that user and license will display on DL Tracker. Actually DL client takes all detail information of user like Name, address etc. along with thumb impression and license copy of user and convert that thumb impression to unique ID to access users data. Then this all information is encrypted and sends to DL Server where all data is decrypted and stored in DL Database. There are two type of databases used local database and global database. DL information related to that state is stored on local DL database for example user who issue license in Maharashtra state is stored in local database of Maharashtra state. Where information related to all states is stored on global database, to reduce burden of accessing global database all time and searching unnecessary records DL tracker first search for local database hence saves time. For checking driving license traffic police will ask for thumb impression of user by using DL Tracker system. Sensors in DL tracker scans thumb impression and make image this image is then converted to text, text is again converted to binary number this binary number is then converted to hexadecimal number to create unique ID for that user’s identification to access user’s data from DL database. By using this ID license copy is retrieved from DL database and displays on DL Tracker screen.

5 IMPLEMENTATION DETAILS
A. Complete block diagram of DL Tracker System.

![Figure 1.1 Block diagram of DL Tracker System.](image-url)
Figure 1.1 shows complete block diagram of DL Tracker system. DL Tracker system uses two type of database local DL Database and global DL Database. DL Tracker is connected to local database. When Traffic police/RTO or RTA member takes thumb impression of driver then DL Tracker first search in local database. Eg. In Maharashtra state DL Tracker first check Maharashtra state DL database. If his data available in local database then DL tracker access his data and retrieve/license copy from local DL Database and it will display on DL Tracker by using Wi-Fi signal. If user’s data is not available in local DL database then it searches for Global DL database which contain all states (country) DL data. If user issues his license in Gujarat state then his data will not be available in Maharashtra state local database but it will be in Gujarat state database as well as so it will access Global DL Database then DL tracker access his data and retrieve/license copy from Global DL Database and it will display on DL Tracker by using Wi-Fi signal. If user’s data is not available in both database then Record not found message is displayed on DL Tracker.

B. Flow diagram of Data storage procedure

Figure 1.2 Flow diagram of Data storage procedure.

The Figure 1.2 shows flow diagram of data storage procedure. In this DL client take all information of user such as name, address, thumb impression, driving license copy etc. and convert thumb impression into unique identification number. This id will be maximum 12 digits which is used to access users data. Then this information and unique id is encrypted by using encryption techniques and send to DL server where data is decrypted and stored in DL Database.

C. Data Flow diagram of DL Tracker system.

Figure 1.3 Data Flow diagram of DL Tracker system.

Figure 1.3 shows data flow diagram of DL Tracker system. DL Tracker takes thumb impression of user/driver. Sensor of DL Tracker scans the thumb impression and create image. This image is converted into unique ID which will be unique key to access that users data from DL Database. DL Tracker system checks DL Database for matching unique ID if match found in DL Database then DL Tracker extract/retrieve DL copy using ID from DL Database and sends to DL Tracker by using Wi-Fi signal. If match not found or unique ID is not available in DL database then if record not found message is displayed on DL Tracker. If user/driver found under fraud cases then authorized person can add detail of fraud in DL Database also authorized person can delete fraud cases of user in presence of user/driver if he did improvement.

D. Data Flow diagram of DL Tracker system

Figure 1.4 Working diagram of DL Tracker system.

Figure 1.4 shows working diagram of DL Tracker system. When traffic police takes thumb impression of user, DL Tracker System scan thumb impression and convert to image then it will extract features of image finding specific pattern of ridges and minutiae points. First image is converted to text then text is converted to binary number, then this binary number is converted to hexadecimal number to create unique ID. this unique ID will be Maximum 12 digits to uniquely access user’s data. Then Matcher checks DL Database for unique ID and extract driving license from DL database and sends through Wi-Fi signal to DL Tracker. This DL tracker eliminates need to carry driving license all the time as well as saves card manufacturing cost.

6 NOVEL FEATURE & ANALYSIS OF VF-ATM MACHINE

DL-Tracker machine is connected to all authorized RTO office
so duplicate driving license is easily get identified. Each driving license is connected to one unique identification number and thumb impression. DL-Tracker at RTO/RTA person takes thumb impression of user and it get converted into unique identification number which will be stored into local database of user. If entry in local database found then attached driving license copy get display on DL-Tracker screen. Otherwise it will check into global database. The fig 1.1 shows survey of Traditional Driving License Checking and DL-Tracker. DL-Tracker machine is more demand of the user the serve (5000 User ask the question of Traditional Driving License Checking, DL-Tracker machine are required, result was 4500–Yes at DL-Tracker machine 500- No at DL-Tracker machine). According to server VF ATM machine is more important of the user, 90% user Demanding the DL-Tracker machine, so here develops this type of machine (the DL-Tracker machine), if Govt. can allow.

![Fig. 1.5 User trend market survey](image)

In an another survey where the question was “if DL-Tracker device implemented then corruption or unnecessary fine from user get reduced ....??” in this survey 500 people from each region asked question Many people at different area gives satisfactory results.

![Fig. 1.6 Survey](image)

7 RESULTS
Fig 1.6 shows the proposed time required for checking driving license by using traditional way of checking driving license and DL-Tracker. As per graph shows DL-Tracker requires less time as compare to traditional approach.

8 CONCLUSION
We have presented DL-Tracker a Modern way of checking driving license. This modern way of driving license checking requires less time as compared to traditional one as well as this system helps RTO people to identify duplicate driving license. DL-Tracker also eliminates need to carry driving license all the time. Provisional Patent No: 201621043220, CBR NO: 37461, Application Type: E-2/2915/2016-MUM Name of Inventor. Shubhangi Jadhav, B.K. Sarkar, suresh sawant, Reena singh.

9 REFERENCES