



QR CODE SYSTEM FOR VEHICLE DOCUMENT VERIFICATION AND STOLEN VEHICLE DETECTION

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Abstract —

In last few decades number of vehicles has increase to the extent level. As the numbers increased, the threat of vehicle security has also increased. In the metropolitan cities where we have huge population and same number of vehicle we have. In order to protect those vehicles from theft or stolen have become a challenging task for us. It's also difficult to carry all the hard docs (like License, RC, etc) regarding vehicle along with us. So to overcome this issues, we have proposed the most efficient and reliable system which is based on QR code to identify the missing or stolen vehicle in public or private place. QR code will be generated for each vehicle at the initial stage of vehicle registration in showroom. QR code will be generated based certain unique parameters and will be mount on vehicle. Due to this vehicle can be identifying using QR code (using Android scanner), even though the vehicle robber have changed the number plate. Our proposed system consist of Android based mobile application and also web application. Using android application user can activate the theft alert, where in all the traffic cops will receive the alert message of stolen vehicle.

Keywords: QR Code, Vehicle, Encryption

I. INTRODUCTION

Now days there have been drastically increase in technologies and same goes with automobiles industries. Due to increase in numbers of vehicles, it has been a challenge for traffic cops to safe guards the vehicles from stolen. As number of complaints regarding vehicle stolen are increasing. Using traditional approach, If we lodge the complaint against stolen vehicle then traffic cops start investigating using traditional approach, and there are chances that your vehicle may not get detected because of several reason like change of number plates, re painting of vehicle etc. We also have more advance sensors & technology integrated with our vehicles to track the live location of it. In order to overcome this issue we have proposed the system where the idea of most trending QR code is used. QR code is versatile .i.e. it can be used for anything and everything. QR code means that virtually anything can be turned into an interaction point that will take the viewer to a digital experience, or accomplish a digital task. With the help of QR codes one can display text to the user, compose an email or a text message, carry out a payment, and much more. QR codes have proven accuracy and till date we have very few failure rate or we can say negligible. The main goal to use QR code is for unique vehicle identification.

II. LITURATURE SURVEY

1. Liu, Y., Yang, J., & Liu, M. (2008, July). Recognition of QR Code with mobile phones. In Control and Decision Conference, 2008. CCDC2008. Chinese (pp. 203-206). IEEE.

In this paper author surveyed problem of RTO, RTO employee having lot of work burden of making registration ,license issue, transfer etc., which requires lots of paper work. As a result people cannot get things done in right time this system helpful for RTO officials to maintain record systematically and reduces lots of paper work and manual effort.

2. Apurva Ekhar, Sakshi Sarode, “A Review:challen system with vehicle verification”, issue 6-ICRTEST January 2017 p-ISSN: 2394-8280

In this paper, technique has been discussed for challan system. Here user provide details to RTO database. By scanning QR code which contains overall information of the vehicle we get vehicle owner details. This system also detect culprit vehicle.

3. Shobha M.S, Akash S, Aswin J.M, “A Survey on Vehicle Document Check System,” Vol. 4, Issue 2, February 2016

This paper introduces system would make it easier for the public as it becomes an automated process. No, it wouldn't be misplaced and also misused. Hence for the safety of the documents. This system Make one unique identity as a driver license

4. Amruta bakale, spoorti awate, Cross verification of vehicle and driver for RTO (IJETCSE) volume 14,Issue 2 April 2015, ISSN: 0976- 1353.

This system proposes,”cross verification of driver and license for RTO”, effectively verifies documents related to vehicle and license. This system introduces facility for RTO officials to maintain records systematically and reduces lots of paper work and manual effort.

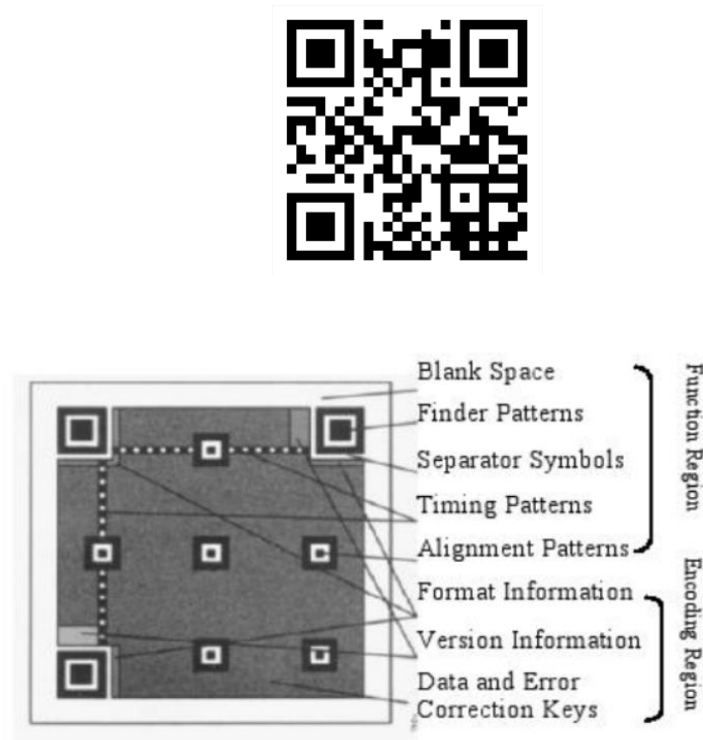
III. PROPOSED SYSTEM

Our proposed system consists of approaches that will easy to trace the stolen vehicle using the concept of QR code. In order to make investigating and seizing the stolen vehicles more convenient and efficient QR code will be used. Where the complete information regarding the vehicle will be integrated and placed behind the QR code in encrypted format. System will be consisting of applications like web and android application. Web application will be used by RTO for registration purpose of vehicle. And android application will be used by end user as well as by traffic cops. End user will raise the stolen alert of vehicle using android application. Beyond of QR code, the information like license, RC etc are stored. So during the police investigation it remains helpful as you don't need to carry hard copy of license and RC.

Reasons of using QR Code in Proposed System:

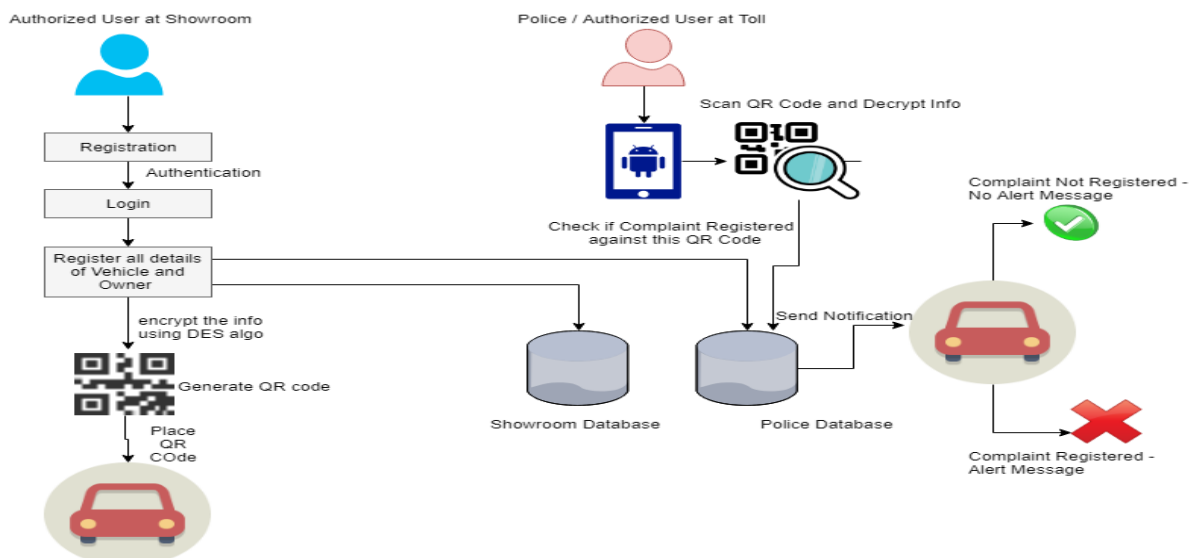
1. Has a very data encoding capacity, maximum symbol of QR Code can encode 7089 characters.
2. High-speed reading.
3. Adapted with CCD reading, QR code symbol reorganization rate is very high.
4. Orientation doesn't matters: Readable from any direction from 360 degree QR Code is a matrix two-dimensional barcode; it can be readable from any direction from 360 degrees. But the stack two-dimensional barcode, It is very difficult to realize the readable from 360 degrees.

Structure of QR Code:



As shown in above fig. QR code symbol is square array which consists of some square modules. It comprises an encoding region and a function region shall not be used for the encoding data. The background region of a QR code symbol there is blank space. Three corners of the symbol are called as finder patterns (includes three probing patterns) intend to assist in easy location of its position, Size and inclination. There are separator symbols width as module between each probing pattern and the encoding region. All of them consist of light modules. The Coordinates of modules are sued as the function of timing patterns and it is determining the density and version of QR code symbol, and proving the reference position.

IV. ARCHITECTURE - PROPOSED SYSTEM



Advantages:

- Find stolen vehicle in easy way using QR code.
- Need not to carry hard copy of documents.
- Data would be stored in encrypted format.
- More accurate as compared to current method being used.

V. HARDWARE REQUIREMENTS

- System : Intel I3.
- Hard Disk : 40 GB.
- Monitor : 15 VGA Colour.
- Mouse : Logitech.
- Ram : 3 GB.

VI. SOFTWARE REQUIREMENT

- Operating system : Windows XP Professional/7LINUX.
- Coding language : JAVA, ANDROID
- IDE : Android Studio.
- Database : MYSQL/XAMPP DATABASE

VII. CONCLUSION

In this paper, we have successfully explained that the Smartphone's with camera device is getting more advanced. Thus recognition of QR code based on Smartphone is getting more important in practical and real life. It's handy and easy to use. Here we have reduced manual intervention. The technology used here provides high speed accuracy and does automatic recognition using QR code for stolen vehicle identification. Moreover it also reduces paper work by providing a means to carry documents and data digitally behind QR code in our Smartphone. Thus this system is dual beneficial to the users and consumers.

VIII. REFERENCES

- [1] B. Hofmann-Wellenhof, H. Lichtenegger, and J. Collins, *Global Positioning System: Theory and Practice*, Springer-Verlag, 4th edition, 1997.
- [2] P. Bahl and V. Padmanabhan, *RADAR: An in-building RF-based user location and tracking system*, in Proc. of Infocom2000, Tel Aviv, Israel, Mar. 2000, vol. 2, pp. 775584.
- [3] N. Priyantha, A. Chakraborty, and H. Balakrishnan, *The cricket location-support system*, in Proc. of International Conference on Mobile Computing and Networking, Boston, MA, Aug. 2000, pp. 32-43.
- [4] C. Savarese, J. M. Rabaey, and J. Beutel, *Locationing in distributed ad-hoc wireless sensor networks*, in Proc. of ICASSP01, 2001, vol. 4, pp. 20372040.
- [5] A. Nasipuri and K. Li, *A directionality based location discovery scheme for wireless sensor networks*, in First ACM International Workshop on Wireless Sensor Networks and Applications, Atlanta, GA, Sept. 2002.
- [6] S. Capkun, Maher Hamdi, and J. P. Hubaux, *GPS-free positioning in mobile ad-hoc networks*, *Cluster Computing*, vol. 5, no. 2, April 2002.