

DETECTION OF STOLEN VEHICLE THROUGH QR CODE

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Abstract- *In today's growing number of means of transport, vehicle security has become an important issue. It is important to improve the means of security to reduce the number of vehicle robbery and prevent them. Thus to overcome this ubiquitous issue we are proposing a system whereby a vehicle can be easily identified using a QR code irrespective of private or public place such as traffic signal or public parking systems or public areas such as market places, railway stations or bus stands. Here in this system, vehicle will be easily identified by its features which are going to be stored in the application being built on basis of QR code. We would be requiring a real time database where all vehicle related data would be stored and used. By using this system, vehicle tracking and tracing can be easily and conveniently done hence providing assistance to technically incompetent people also.*

Keywords— *Vehicle Stolen, QR code, Cost efficient, Vehicle Tracking.*

INTRODUCTION

In today's world with increasing numbers of automobiles and vehicles, vehicle theft has become one of the most easy and common type of robbery. To report any robbery or theft we follow the traditional approach of registering complain in police station. Police lodge an FIR and then in turn start the investigation. But it's very easy in our system to manipulate the stolen vehicle and change its original identity. Thus its becomes difficult to identify the stolen vehicle. Moreover we do not have ant device or sensors in our automobiles which can help us track the live location in case vehicle is stolen. Thus it becomes very easy to carry out this type of theft.

Hence we have come up with idea of using QR code which is lately famous and helps uniquely identify any product or automobile or vehicle. We can use types of QR code i.e. either matrix or dimensional depending upon the requirement. 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. This is going to help in situations where burglar has fabricated or modified vehicle number plate or GPS tracking system if present any.

Literature survey

Title: RADAR: An in-building RF-based user location and tracking system

Author: P. Bahl and V. Padmanabhan (2015)

Description:

This paper presents RADAR, a radio-frequency (RF) based system for tracking and locating users in a building. Operating of RADAR system is based on recording and processing signal strength information at multiple base stations. These intend to provide overlapping coverage in the area of interest. The combination of empirical measurements with signal propagation is used to determine user location. Thus it enables location aware services and applications.

Title: Directionality based location discovery scheme for wireless sensor networks

Author: A. Nasipuri and K. Li (2013)

Description:

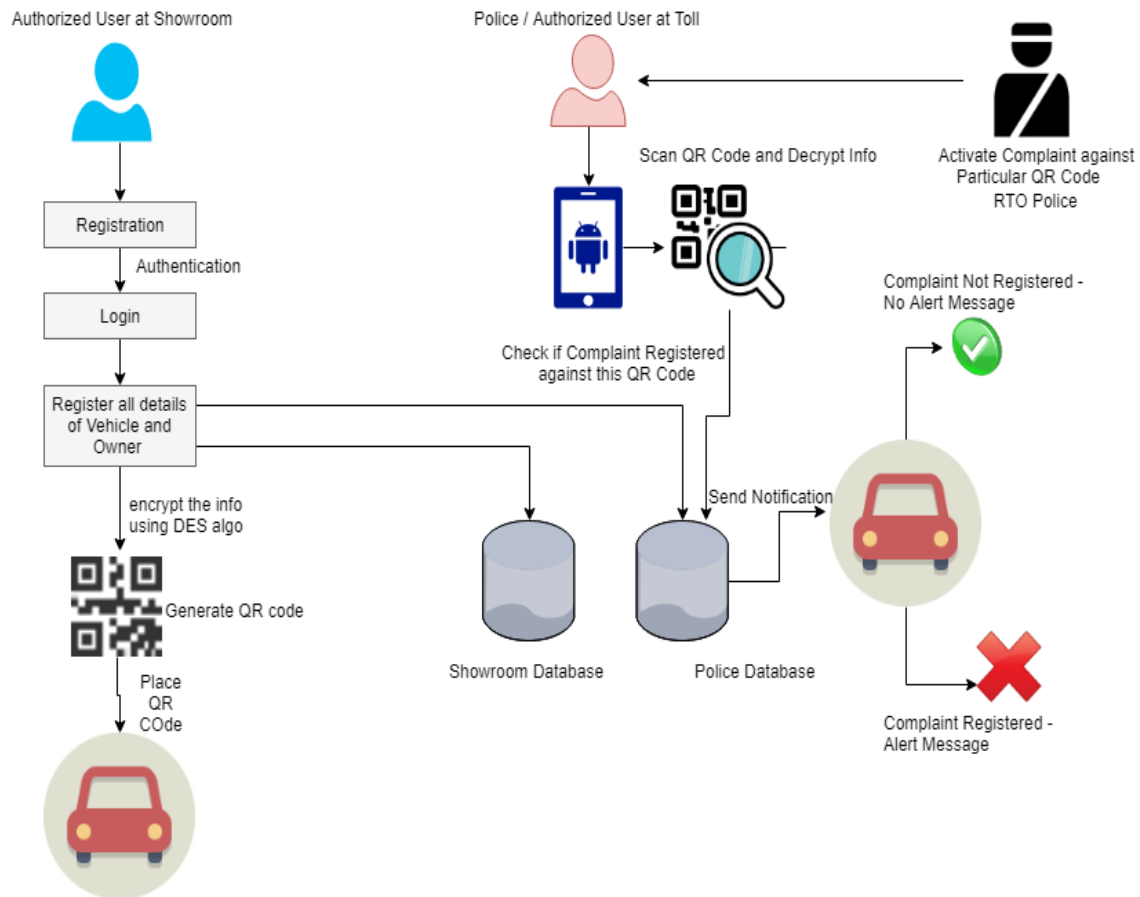
A large adhoc network is basically a sensor network of densely distributed sensors. They are equipped with low power wireless transceivers. This network can be easily applied to signal detection, tracking and monitoring. They are especially useful for applications in remote area or hazardous location. This paper helps to solve location discovery at sensor nodes. The main contribution of this proposed system work is to define and compute relative positions of the nodes in an ad-hoc network without using GPS.

PROPOSED SYSTEM

In proposed system our aim is to define, design and implement such a system which helps in easy identification of stolen vehicle. It helps and reduces manual mundane work and guarantees more success rate as compared to current existing

system. This system is going to be implemented using QR code. QR code use unique identification method. Each and every vehicle will be associated with unique QR code. The data behind QR code is in encrypted format using encryption algorithm. Data behind this QR code will be users vehicle related documents digitally. Thus users will not face unnecessary questions during inquiry to detect stolen vehicle. Two modules basically the front end and back end will have two most important functionality. Front end will collect data, location information using tracking and positioning technologies from both users i.e. traffic police and citizen. Data warehouse and data analysis centre components would be used at backend.

SYSTEM ARCHITECTURE



ADVANTAGES OF PROPOSED SYSTEM

- Find stolen vehicle in easy way suing 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..

MATHEMATICAL MODEL

Let W be the set of whole system which consists of the input, process and output of the system.

$W = \text{input, process, output.}$

Let,

Inputs:

1. R_i for retailer
2. T_i for traffic police
3. D_i for department of police

Procedure:

Step 1:

Retailer first registration.

$R_i = (R_i;1; R_i;2; : : : ; R_i;k);$

Then QR Code generated

Step 2:

Traffic Police : The traffic police scanner scans the QR code.

$T_i = (T_i; 1; T_i; 2; T_i; k);$

QR code generate the text file generate. Then finding authorized user to database.

PROCEDURE

1. In this stage, the user or retailer creates new registration. Then generate QR code for that user vehicle information.
2. The Traffic Police F is scan the QR code. And it will generate text file for given QR code.
3. If Complaint is Registered against that QR Code then System will show Alert Message

OUTPUT

Traffic police scan the QR code; check the information of that vehicle in the system.

CONCLUSIONS

In this paper, we have successfully explained that vehicle robbery and theft can be reduce to a comparative low level by using our QR code system. Also it is a cost effective solution which can be easily implemented and affordable by common mass people. QR code can be implemented on Smartphone which are easier to use and cost saving method instead of using any external hardware device. It's handy and user friendly. Here we have reduced manual intervention. Thus using this technology we can provide high speed accuracy and also automatic recognition using QR code to identify stolen vehicle. 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.

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.