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Smart Card and Image Processing Based Vehicle Tracking System

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Abstract: Now a day's more number of vehicles traveled on roads, we cannot find the vehicle particular place. In addition, if any candidate theft vehicle we cannot find the vehicle place and thief so to overcome these problems by using Image processing and RFID vehicle tracking system. It consists of a RFID tag, which consists of owner name, place, communication details, mobile number and address. The RFID Tag is present on the roof of vehicle. Moreover, RFID reader, which is, reads the RFID tag information and save the details as vehicle details about RFID reader placed place after and send this information to central vehicle system office. In addition, a image scanner is present at the RFID reader it is used to scan the driver image and send the details like license number, name and address of driver to central system.

When any vehicle loosing, then entering vehicle number into the central system then the system shows all locations with time and date up to present time. Therefore, respected owner goes to particular place and got it simply and the thief is easily identified by security systems.

Keywords: RFID Reader, smart card, image scanner, RFID Tag, vehicle.

Smart card and image processing based vehicle tracking system consists of two sections:

1. RFID Network
2. Image Reader Network

1. RFID NETWORK:

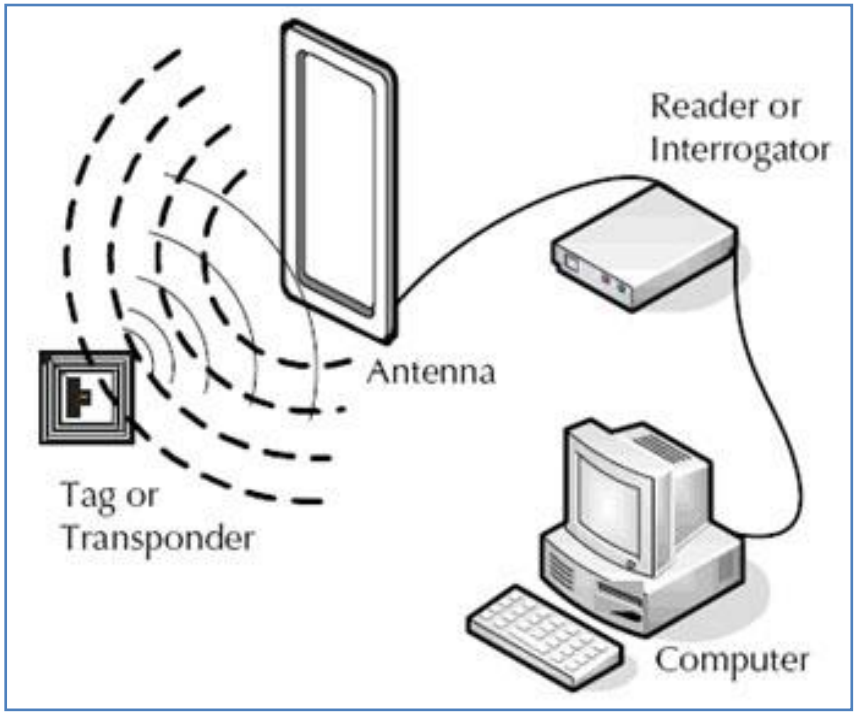

Fig 1: Block diagram of Vehicle tracking RFID System

The figure 1 shows the block diagram of "Vehicle tracking system using RFID Network". It consists of a Tag [located on roof of vehicle], RFID Reader and Computer system. The working of Vehicle tracking system using RFID Card discussed below.

RFID Reader:

By a property of mutual induction, the RFID Reader reads the RFID tag information shown below.

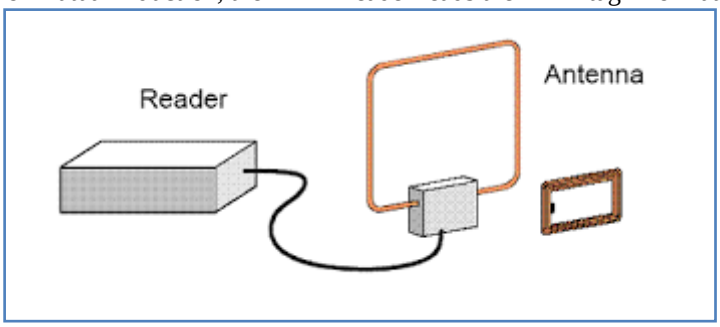

Fig 2: RFID Reader

RFID Tag:

The RFID Tag, which is present on vehicle, consists of vehicle information such as owner name, place and registration dates.

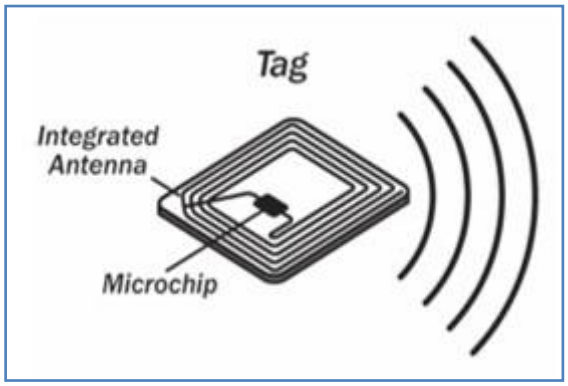

Fig 3: RFID Tag

Working of Vehicle Tracking System using RFID Smart card:

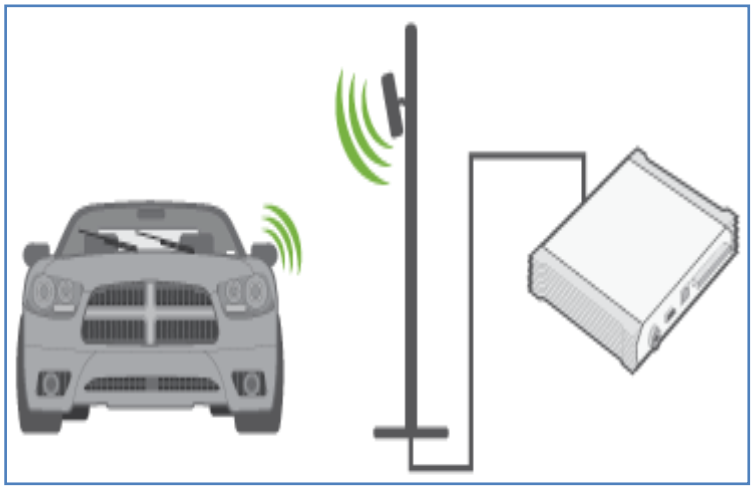

Fig 4: RFID Network with reader and smart card

When vehicle moves towards the RFID Reader, then RFID Reader reads the tag and saves the information as a particular vehicle number with the help of RFID Reader place and sends this information to central network system.

2. Image Reader Network:

Image Scanner:

With the help of image scanner the owner scan the family details like candidate face and iris and save those details into computer system.

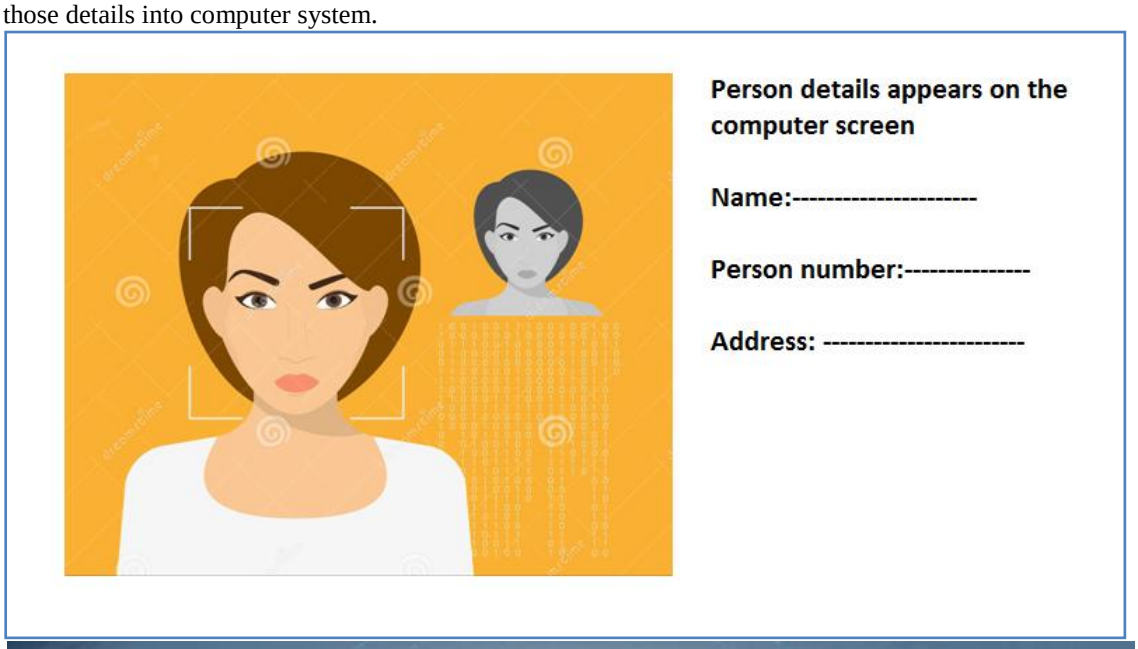

Fig 5: Image and eye iris scanner

Computer system:

The computer system used to save the details of driver like

- Person name:
- Person driving license number:
- Person details:

Moreover, these details are giving to central system of this network.

Fig 6: Computer system

Ethernet:

Ethernet is an internet service used to provide the internet. The data coming from image reader and RFID Reader are going to central system with the help of Ethernet.

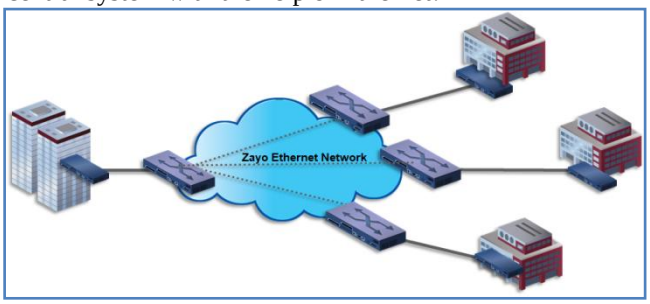

Fig 7: Ethernet

Example: A vehicle consist of Owner name: Sudha Mohan, Vehicle number: AP 9999 and Location: Warangal is moving towards panjagutta RFID Reader then RFID Reader reads this information on from RFID card, which is present on the roof of vehicle and save it as

- Owner name: Sudha Mohan
- Vehicle Number: AP 9999
- Location: Warangal
- Current location: Panja Gutta
- Time: 5:30:31 PM and Date: 05/03/2017
- Moving towards: Kukatpally

In their own systems and later it will go to central vehicle systems.
In addition, with the help of image reader the system saves the driver details like:

- Image:
- Name:
- License number:
- Details:

When any vehicle loosing, then entering vehicle number in the central system then the system shows all locations with time and date up to present time. Therefore, respected owner goes to particular place and got the vehicle simply and the thief is easily identified by polices.

Applications:

- Used in transportations
- Used in anti thief systems
- Used in police stations
- Used in public address systems
- Used in candidate identification systems

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