

**Smart College Transportation Management Using GPS and Android Technology****Mitali Verma\*, Nikhil Goyal, Rachit Sharma, Tanya Chouhan**

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**ABSTRACT**

As we know that everyone will be late to catch a bus in his college days. Now, it is very difficult to find the route of different buses and the students need to call to their class mates to locate the current position of the bus. In this paper, we have elaborates the problems with existing system and what are the other systems which are currently running in the market. We have also provides the process flow of the existing system.

**KEYWORDS:** cargo tracking system, BMTC, RFID, Efficiency.**INTRODUCTION**

Android is the latest and most popular device in today's world. The percentages of using android based mobile devices are more in today's generation. Android has not only been used just for the making call but several applications can be installed in it and user can get benefited through it. With keeping view of the emerging growth and use of android, we decided to make the android app that is "FAST-CATCH". Our project 'FAST-CATCH' is a GPS based android application which helps the user to locate the vehicle by sending just an SMS. The application tracks the current location of the user through the Google maps API and it provides this location to the message sender, sender can use this location to find out where the vehicle is even though he is not using any internet connection. This projects overall gives the easier tool for finding out where is the position of the vehicle if he wants to catch it even if he is not carrying up a phone which is just capable of sending a message (SMS). It saves time and money. Texting has become a common and very popular method of communicating with friends. AS compared to calling text is the quicker and efficient way to interact with others.

**LITERATURE SURVEY**

Transport is one of the important infrastructures and mean of concern for the growth of any country. The problems that arise due to unconditional transportation are uncertainty of waiting time due to traffic jams and any other issue live abnormal conditioning. Now a day the safety and privacy becomes main concern for private and public vehicles while travelling. The GPS system will provides these two features by locating the current location of the vehicles and it also helps to guide the driver while he is going in the wrong direction.

**CARGO TRACKING SYSTEM**

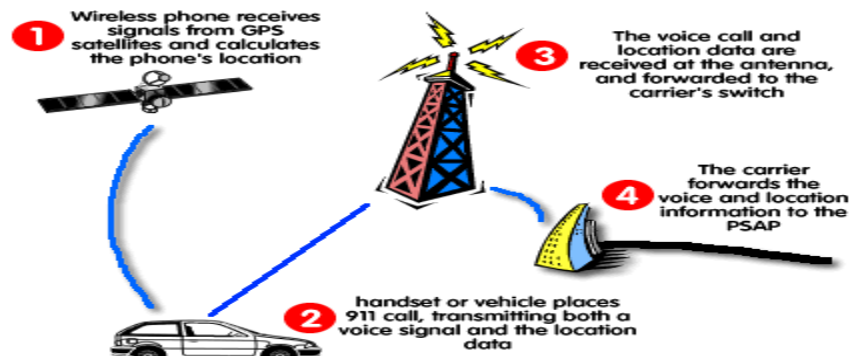
Muruganandham and P.R.Mukesh proposed a system that Uses GSM/GPRS modem and GPS system to provide real-time tracking of the vehicle over the internet through Java applications developed specially for this purpose.

**ADVANTAGES**

- With such java based application we can provide real time tracking for cargo.

**DISADVANTAGES:**

- It requires an external database to maintain tracking details, so this increases the cost of the system.



*Figure: Cargo Tracking System*

**BMTC BUS TRACKING SYSTEM**

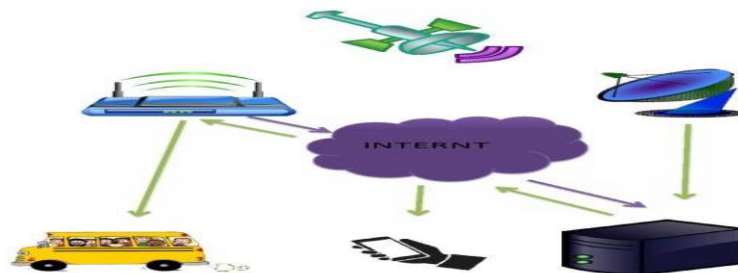
Bangalore Metropolitan Transport Corporation [3] buses have a real time bus tracker. The online application that involved a small device on top of buses was tried on experimental basis. This device will calculate distance travelled and time taken. Later the electronic display boards will announce the arrival and departure timing at bus stops.

**ADVANTAGES**

- This application will give real-time location of the bus.
- This is not an SMS based system so there won't be any interruption in sending the data.
- No external databases are required for this system.
- It ensures that drivers will not deviate from their fixed routes.

**DISADVANTAGES:**

- The GPS tracker is set up on the bus; so it fails whenever the buses pass from under the trees or flyovers and even when the buses are in their sheds.



*Figure: BMTC Bus tracking system*

**RFID BASED TRACKING SYSTEM**

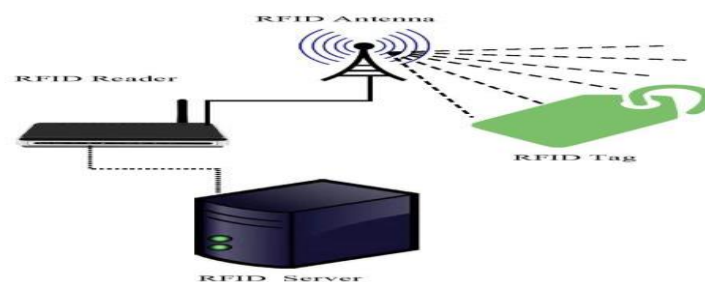
RFID stickers [4] are installed on every bus, these stickers are installed for identification at bus terminals. Every bus stop is assigned by a unique ID, this unique ID is transmitted around some distance around it RF transmitters and when the RF receiver on the bus comes within the range of the transmitters, it will receive signal that is generated by bus stop and it will indicate the passengers the next stop. Here real-time tracking is not possible and also it can only be used for short distance.

**ADVANTAGES**

- The RF transmits the signals whenever the bus is nearing the bus stop so that the passengers are aware of the arrival of bus.

**DISADVANTAGES:**

- This method will only be helpful for short distances.
- The passengers cannot get the exact location of the bus, they will only be notified when the buses are nearing the stop.



*Figure: RFID based tracking system*

### **BESTPIS APP**

The BEST launched a bus tracking system which will be able to access the position, speed and expected arrival time of buses by sending a code number specified to each bus top, via SMS. It is GPS enabled navigation system which will track the location of the buses. The user will have to register to the website first in order to access the details.

After the user has logged in he/she will be able to send the SMS to the given number specifying the code number on the bus stop.

### **ADVANTAGES:**

- SMS service provides real-time bus arrival information for convenience of passengers.
- Bus passengers can schedule their journey accordingly.
- Increase the use of mass Transport leads to fuel savings and increase in the operational revenue.

### **DISADVANTAGES:**

- The code numbers which the commuters are supposed to send as a SMS to the required number were not painted on the bus stops.
- Also the registration process is too complicated and is difficult to access the service.
- Even though it provides real-time bus arrival information through SMS, there are chances that the SMS will not reach the user. It is not always trustworthy.

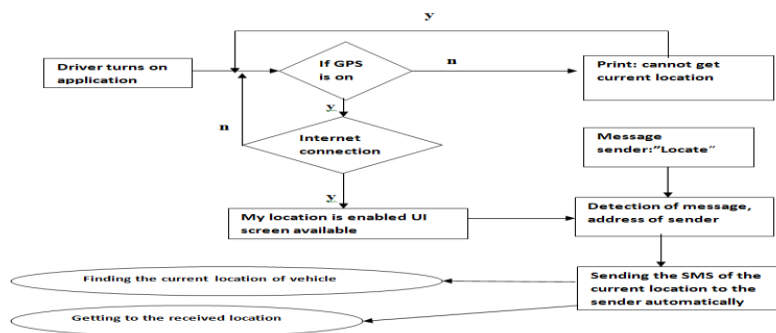
After studying various methods adopted by various folks, it is observed that numerous methods are used for vehicle tracking, monitoring and alerting system. The existing systems are used for tracking, monitoring and alerting of vehicle for car, truck, cargo, bus, and bike.

The car and bike needed the system to know the real time location of car / bike to owner for safety purpose and to avoid theft of vehicle and alert the owner. The cargo uses real time tracking and monitoring system. For bus, it is used for real time tracking of bus, monitor passenger in to the bus, predict arrival time and send information to the base station. The public transportation uses tracking and monitoring of the bus for arrival time prediction of bus on the respective stops.

The existing system used different technology and method as per application.

### **PROCESS FLOW AND LIMITATION WITH EXISTING SYSTEM**

In an organization like colleges, lots of students miss their bus consistently which is a nightmare for them to catch the bus at time. Now, to solve the problem our app follows a simple process, first bus driver turns on the application then the system checks the GPS and mobile data for getting the location if everything is successful we proceed to next step, whenever a person want to track his bus location he sends an SMS with a particular predefined key identifier (for example in our app – “Locate”), as soon as the bus driver receives the message the app automatically checks the key identifier and sends back the location and a link for GMAP with address.



*Figure: Process flow of Existing System*

**CONCLUSION**

The conclusion reached on the basis of evidence is that to track a bus location we don't need any costly equipment and does not require any data centre it can be done very easily using a simple app in very affordable manner it is beneficial for both user and client

In our project we have focused on how student can easily get location by just sending a message and the response immediate. Student doesn't need to call the bus driver and ask about his current location which is very risky as it can cause accidents. On, bus driver side also it is very easy for bus Driver also because he does not need to attend many call for telling bus location as well can see his bus location using same apps as it provide Google maps in build and can drive without disturbance .

**REFERENCES**

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- [4] Display and generate app and key:[https://developers.google.com/admob/android/quick-start#place\\_an\\_adview\\_in\\_your\\_main\\_activity\\_layout](https://developers.google.com/admob/android/quick-start#place_an_adview_in_your_main_activity_layout)