

# Metro Bus Live Tracking Using Smartphone

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**ABSTRACT:** Now a days Every Passenger has travelling from their place to another place. They can travel for Business, Job, working places, etc... Passenger are waiting for the buses are not good. Passenger can know the status (or) location of the Bus, by knowing the location passenger can know whether the Bus is left early or late so that they can easily know. They help the people to make higher travel decisions. This paper provides the pressure of the Metro Buses and get discuss the different approach to manage with our intelligence. In Bus we will implement GPS or GPRS and GSM networks, SMS, RFID provides GPRS service to Coordinate the bus and we can able to get the location of the Bus. GPS has to be enabled for tracking devices and we can get the information from the GPS and we can send to the centralized control unit using RF receivers. With average speed in every Segment System gets Implemented. Factors like traffic crossing every segment, day and time is used to improve the accuracy. By using LED at Bus Stops, SMS, Android application people can track the Information. GPS gets coordinate to Centralized server, using historic speed patterns different arrival time algorithms gets applied.

## OBJECTIVES



This paper is use to expand a system of Bus Passenger to provide information of bus arrival time based on traffic conditions. It steps towards Advanced Public Transport System for Implementation. To get the data GPS is used, list of factor conditions are traffic jams, overtaking, breakdowns, accidents, unscheduled changes, etc... these are the particular conditions for the Bus routes in Cities. If the Buses plying these routes that can be extendable to other places with the help of GPS. In can be layout by the Bus information to public places via different media such as display boards and Kiosk at Some Bus Stops, with the Internet and SMS.

For every dissemination systems Prototypes are developed.

Following tasks are:

- 1) Bus arrival prediction algorithms and systems reviews.
- 2) In Every Metro Bus units are fixed and Installed.

- 3) Data Collection and Quality control
- 4) Database Development
- 5) Prediction algorithm development development for Travel and Time
- 6) Real time data Integration
- 7) Development for prototype
- 8) Performance evaluation
- 9) Scalability, Transferability Issues

## INTRODUCTION



India's transport sector became large in 2007. It needs 1.1 billion people to get catered. It contributes to India's GDP around 5.5% including roadways and getting shared Based on World Bank report. Sector are not able to meet the raising demand. There are different solutions to lead the demand Adaptation of Intelligent Transport Systems without constructing the infrastructures, we aim to the increasing the efficiency, safety, reliability and eco sustenance of transport Subsystems like Advanced Traffic Management Systems, Public Transit Systems, Traveler Information Systems, Vehicle Control Systems and Commercial Vehicle Operations provided by ITS. APTS incorporates information systems, bus location system, arrival time systems and provides passage to buses with a priority. It describes a feature of APTS, Arrival time systems, On Below the broad umbrella of ITS key field is covered. It presents preliminary observations by the larger investigation. Lot of Reports are there in short term travel time prediction in the previous. Investigators carries conditions of traffic. Traffic conditions are not applicable by Models and Algorithms. Traffic in every cities are different in composition. Number of Vehicles like two, three, four, etc... for a large pedestrian and will be shared to Urban Roads. Standard methods handled to get linked with poor lane that makes a travel time prediction with our challenge. We can know the traffic behavior below City Road Conditions.

**Revised Manuscript Received on April 05, 2019.**

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MOTIVATION

It is a straight measurement of both systematic and usefulness for public transportation. It is important that time information has to plan the operations, signal time coordination and assigning the routes. ITS tools design and implementation based on correct predictions by existing travel time data. Lot of reports travel time prediction for short term in the past. It carries traffic conditions by the Investigations. It is not applicable to Traffic conditions by Models and Algorithms. Traffic is varied in composition. Vehicles like two, three and four wheelers, in addition to large pedestrian shares the Urban road. Standard Methods is used to handle Poor lanes gets linked with travel time predictions more challenges. We can know the traffic behavior based on City Road Conditions.

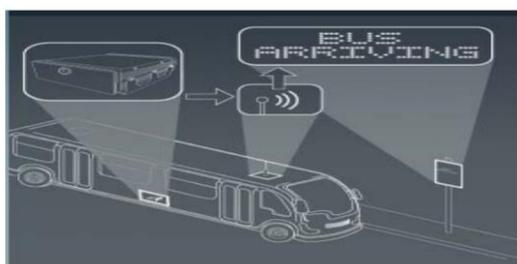
ARCHITECTURE



- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>A Bus priority fault detection and performance monitoring reports</li> <li>B System databases</li> <li>C Bus priority radio link</li> <li>D Bus processor (contained within traffic signal controller)</li> <li>E Traffic signal controller</li> <li>F Bus detection points</li> </ul> | <ul style="list-style-type: none"> <li>G Bus door sensor</li> <li>H GPS receiver</li> <li>I Central system server (located remotely)</li> <li>J IBIS plus unit</li> <li>K GPS satellites</li> <li>L Bus garage (when bus is in garage, it is linked to the central system server to send and receive bus priority data)</li> </ul> |
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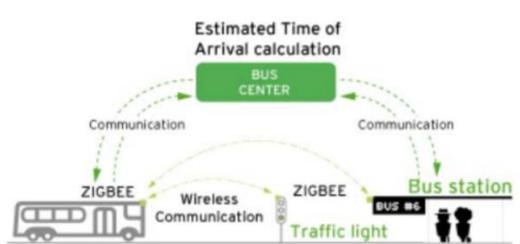
FIELD IMPLEMENTATIONS & RESULTS

a) Bus Time:



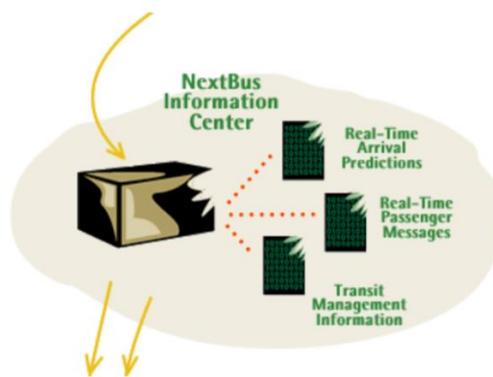
Clever devices in USA were develop Transit technology solution to access Information of Bus arrival time and tracking. To track buses with routes GPS and experience software is Enabled and calculation is available for Arrival time for stops and Information with message signs, smartphones, secure internet connection can be spreaded to all public. Intelligence Vehicle Network, Transit control Head, Bus Tools, Bus Link Wireless communications, Digital Communications for Operations Are Required. These type of Requirements is used in Chicago.

b) Estimated of Arrival Time Predictions:



It is used to provide real time Estimation time of arrivals by the ITS principles to predict the passenger on the bus stops who were travelling in bus. From various parameter it is used to calculate like current position of vehicle, history average speeds. It is used to execute a smart bus stops solution by the Telargo through the wireless communication for accurate ETA information to the bus stops. We can share to the passenger through smartphone, text message, display boards, voice announcement on bus or bus stands or stops with the help of Internet.

c) Next Bus:



GPS data is used to provide information about vehicle arrival, departure, maps to passenger, managers of public transit shuttles. Information will be transferred through internet, smartphone at every bus stops and personal digital assistants. Transit authorities with a full of management tools will be provided by Passenger Information, it is used to improve the operating efficiency, increasing services and reporting requirements by government. This application is used in USA.

d) Synchromatics:

It displays arrival predictions and time bus loads by passenger's information system. It provides interactive maps available through web portals by navigating it. It can be accessed by the passengers through Public portals, Android phones.

e) King country Metro:

Transit riders provides wide range of service of Travel Information.

- My Bus:

Various time points will be shown for bus arrival times prediction.



- Bus view:

Online map of bus locations can be provided.

- Transit Alters:

Email notifications King Country Metro internet can be provided and details of Real time bus arrival of metro bus can be provided by the wireless application. It uses ancient data operations for this application addicted to bus location by the Prediction algorithm.

### SUMMARY

Number of Buses displays that number of modules based on arrival patterns and other correlated variable with arrival time. Historical time, schedule observance, days, time, week, no of stops with route, distance between adjacent stops road network conditions these are the variables. Variables like collection, transmission of data to emerge the technologies of WIFI communication. Sensing technology like AVL, APC including WIFI communication. Switches like off-peak to peak and vice versa based on their modules conditions of the traffic do not change much. This is mainly used in area model accept traffic patterns are similar when model accept traffic patterns are similar when the crowd becomes minimum. Distribution of travel time, day, week and so on we found from considerable historical data analysis. Demand and traffic pattern, historical models are able to give acceptable information of bus arrival time in every areas, complex prediction models is not necessary. It is displayed to perform other methods by machine learning technique in which enough data is available. While the bus trip is in progress we can apply KF model due to calculation with simplicity and most popular recommended for this application.

### PREDICTIONS METHODOLOGY

It is used for travel time predictions based on dynamic traffic modules algorithm. Prediction model has to develop to characterized the evolution of time in the beginning. In previous subsection Travel time has to assume in particular subsection. Using travel time in current subsection, Routes are discretized into smaller subsections, current subsections gets obtained by test vehicle time. Suitability input has to be nominated based on their availability. Availability Historic data was absent. Travel time database and develop a mathematical model of travel time has been characterized. Reflecting the effect of roadway characterized like carriage way width, signalized intersections etc... to capture the uncertainties and variabilities time has to be expected.

### DISADVANTAGES

- Tracking systems can be capture of privacy
- Staff Information can be used by Managers who were hard workers to fire them in order.
- Tracking devices by the technology to go wrong directions and staff gets stressed.
- Machine learning algorithm has to use historical data to predict the arrival time of the vehicle and location.
- It provides flexible framework for communication, but number of sharing passenger increases affect the accuracy in the system.

### PROBLEM STATEMENT

Now a day's transportation has become more common. Number of vehicles on the road which keeps on increasing and most of us are hopeful to own personal vehicle as we can travel anywhere without limitation. In case we are unable to charge for personal vehicle, public transportation such as bus, train and cab is the most suitable options for us to get ourselves to another destination from time to time or went early so to find out the status of the bus this paper will be helpful to the people.

### FURTHER WORK

There is a scope for improvement that through the developed application it covers implementation features. For more correction prediction it searches the better algorithm in an open ended problem. Data is not used from the TV in algorithm due to limitation of KFT based model and kept for validation purpose alone. New algorithm is developed for test vehicle in real time data. Input variables represent outline much closer to real time occurrences by improving the prediction accuracy. Time headway between two buses it gets useful when they are high. Two consecutive buses gets experience. For modification prediction will be under process. Developed system evaluation is ongoing. It carries out the Transferability and scalability. Field implementation gets ready once system gets carried out. In real world outline Field implementation gets carried out.

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