ABSTRACT

People those who are waiting for the buses at the bus stops for city or private buses will be looking eagerly for the bus they want to get in. But they can be able to trace the present location of the bus. This project GPS-GSM INTERGRATION FOR ENHANCE PUBLIC TRANSPORTATION MANAGEMENT SERVICES will be use full to find out the current location of the bus on a particular route for city buses, private travels as well as RTC buses. This project contains two embedded system modules one will placed inside the bus and the other will be placed at the bus stops. The location of bus can be finding out using GPS and can be sent to bus stop using GSM. Keypad will be helpful for location. The location of the stop manually to the bus stop. In this project we going use AT89C51 (AT89C517) based microcontroller, which the current dominant microcontroller in mobile based products and software development Tool as Keil, flash magic for loading hex file in to the microcontroller

The system consists of four modules: BUS Station Module, In-BUS Module, BASE Station Module and BUS Stop Module. Equipped with PC and GSM modem, BUS Station Module sends the initialization information containing the bus number and license plate number to In-BUS Module and BASE Station Module using SMS. and services offered by transporters to common people. The results have shown that the developed system is useful for facilitating people using public transportation services.

Keywords---- Transportation, Embedded System, GPS, GSM

I. INTRODUCTION

With the increasing number of people in opportunistic cities of Pakistan like Lahore, already existing problem of poor transportation services has grown to an alarming extent. Due to non-availability of prior information about the buses arrival schedule, people have to wait longer on bus stops especially in morning when they have to reach the offices in time. The buses are overloaded for most of the times which often results in some kind of fault occurrence in buses and people get late further. According to a survey report issued by Lahore Regional Transport

In this paper, a transportation management system is developed for enhancing public transportation services based on integration of GPS and GSM. GPS is used as a positioning device while GSM is used as communication link between different modules. These modules include BUS Station Module, In-BUS Module, BASE Station Module and BUS Stop Module. Bus Station Module contains a GSM engine interfaced to PC and transmits the bus index and its license plate number to BASE Station. At the same time, it turns on GPS receiver installed in the bus.

The bus then starts transmitting its location to the BASE Station: The BASE Station comprises of a GSM engine interfaced to a microcontroller for processing user request of bus location as well as a number of other GSM engines interfaced to various PCs each reserved for a separate bus to update the location formation of that bus. The buses location data from BASE Station is sent to each bus stop. BUS Stop Module after receiving buses location data through GSM engine displays it on dot matrix display installed at each bus stop.

Block of transportation management system
II. SYSTEM MODULES AND NETWORK OPERATION

The entire system/network comprises of four modules BUS Station Module, In-BUS Module, BASE Station Module and BUS Stop Module. The working an interconnection of these modules is described in this section.

A. BUS Station Module
B. In-BUS Module
C. BASE Station Module

III. WORKING PRINCIPLE

The system consists of four modules: BUS Station Module, In-BUS Module, BASE Station Module and BUS Stop Module. Equipped with PC and GSM modem, BUS Station Module sends the initialization information containing the bus number and license plate number to In-BUS Module and BASE Station Module using SMS. The microcontroller based In-BUS Module consisting mainly of a GPS receiver and GSM modem then starts transmitting its location and number of passengers to BASE Station Module. BASE Station Module equipped with a microcontroller unit and GSM modems interfaced and processes user request about a.

BUS Stop Module is installed at every bus stop and consists of a GSM modem, memory unit and dot matrix display all interfaced to a microcontroller.

IV. BLOCK DIAGRAM

V. DESCRIPTION

This module receives buses location information coming towards that stop from BASE Station module and displays the information on a dot matrix display. A per stop statistical analysis is carried out based on the number of passengers and a recommendation report along with this analysis is sent to Punjab Government Transportation Department to have a check on the performance and services offered by transporters to common people. The results have shown that the developed system is useful for facilitating people using public transportation services.

VI. FEATURES

ADVANTAGES
1. Solution for enhancing public transportation management services based on GPS and GSM
2. Facilitating people using public transportation services.
3. Extensive coverage, low cost.
4. Greater phone variety.
5. No roaming charges on international calls.
6. GPS is more speed, reliability distance factor.

DISADVANTAGES
1. Bandwidth is too large.
2. Causes electronic interference.
APPLICATIONS

1. Public and private transportations
2. Postal department
3. Courier services
4. Railways

VII. CONCLUSION

In this paper, design and development of a low cost transportation management system based on integration of GPS and GSM data is described. The system comprises of various modules which are wirelessly linked with GSM modems. Cost effective SMS service of GSM network is used for the transfer of data between the modules. A new service, to facilitate the people who use public transport for traveling, is introduced inside the city. The service provides the user with current location information of desired buses based on which the user can adjust his schedule accordingly. The service therefore vanishes the need of waiting at the bus stop thus saving a lot of time. For the passengers not utilizing the service, displays are installed at bus stop to let them know the buses location coming towards that stop. The system is also efficient in handling the emergency situations e.g., in case some kind of technical fault occurred in bus, the operator at bus terminal is informed and the departure time between the buses is reduced.

VII. FUTURE SCOPE

The system can be made automatic by installing cameras at bus terminals which can automatically read the license plate number of buses thereby eliminating the operator. An automatic route guider display can be installed in buses to better update the alternative route in case of serious road congestions. Fare collecting system can also be automated by providing another mobile service to which all the passengers using public transport are subscribed.

REFERENCES

TEXT BOOKS