



RESEARCH ARTICLE

Vicinity based Geographical advertisement System

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Abstract

Advertisement is an integral part of a successful business. Since the start of the world, the method of advertisement changed its forms as well as platforms. Earlier, it was in the form of paintings on walls and banners, and then in the form of commercials on radio and then on Television and now on internet. Vicinity based advertising System is based on developing a new type of advertisement system for public transport like bus using a wireless systems. First, the fact that vehicles are constrained to a predefined area (the road segment under radio coverage) which can be characterized in terms of packet error ratio (PER). Second, that it is possible to know the vehicle speed, either accurately or approximately. These characteristics allow us to model the data transmission process in vehicle to infrastructure as a dynamical system. One additional feature of this project is the LCD display unit. The aim of this research is to develop a software application through which a bus traveler can get his Point of Interest (POI) such as universities, hotels, shopping malls, super stores etc. in the same geographical region where there bus currently is. POI's are registered clients who want to advertise their services. Our proposal exploits two specific features of vehicle to infrastructure that are not present in other announcement system which announces the important information like the name of bus stop coming or any other emergency information. This facility increases the convenience of tourists in city. This advertising system can be more effective, cheaper and also updating information is easier and quicker.

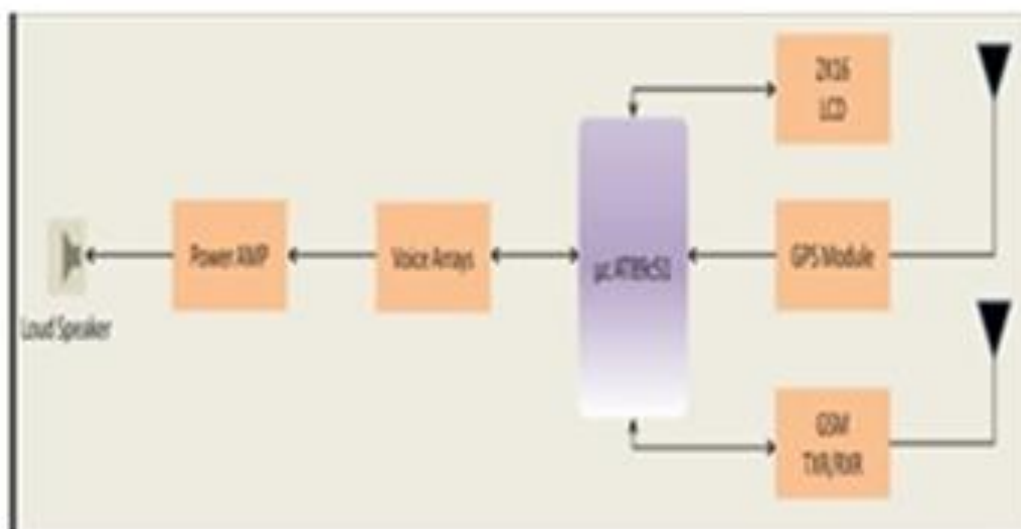
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Introduction

Products are displayed on the shelves for advertisement and eventually selling them to the customers. The process of advertisement creates an interest and attracts perspective customers towards it. Similarly, many countries advertise themselves in the form of commercials on Television and internet to attract tourists to visit. Some countries put up their websites to facilitate and advertise themselves. Likewise, any country or city can advertise itself by using cell phone aided system for advertising and tourism. Dondo al. defines tourism as —Tourism is a composite of activities, facilities, services and industries that deliver a travel experience, that is, transportation, accommodation, eating and drinking, establishments, entertainment, recreation, historical and cultural experience, destination attractions, shopping and other services available to travelers away from home. A city's tourism, business and industrial sector can be boosted by advertising the attractions, facilities and services globally in an innovative and better way to facilitate tourist. These tourists from around the world visit the city and thereby contribute to the country's economy. This project deals with developing a system fitted in bus that promotes the city's businesses and the users information of the spatial content of the city. Geographical information is the core component of this application as it provides users the spatial

information about the place. It supports the human behavior of —What you see is what you believe— by displaying the spatial information on the display device. Geographic Information System (GIS) plays its role whenever maps come into mind. Geographic information systems are used to collect, analyze and present information describing the physical and logical properties of the geographic world. In other words, it deals with the collection, storage, manipulation, analysis and presentation of spatial or geographical data. Simply, put GIS in an information system that makes use of spatial information effectively. Almost everyone is now aware of GIS and its implications in various areas and applications. Advertisement and tourism are such areas where GIS is being used to enhance its services. Before the advent of GIS, it was internet revolution which revolutionized the mechanism to access information. Everyone hosted a website for their business or company with the information about their products or services. The business sector also used the web technology to publish information regarding their products and offerings. The objective of this project is to explore the role of GIS and internet working together on moving vehicle, in the current scenario of new and emerging technologies for the area of advertisement and tourism. This project also aims to develop a GSM and GPS based geographical advertisement system to assist its users e.g. tourists, businessmen etc. by enabling dynamic and interactive responses to the users and thus increasing the marketability of the city in the domain of business and tourism. The core idea and strength of this project lies in organization and manipulation of spatial information by using Database Management System (DBMS). As a case study, the city Chennai located at south- east part of India tourists come to visit the places of Chennai and also want to buy some local goods. The advertisement and announcement systems together will work as a tourist guide for them. The announcement system will let him know when his stop will come and advertisement system provide him the useful information of shops, restaurants and other their point of interest in the same vicinity.

II. TERMINOLOGY: The project is establishing a communication protocol between bus and Centralized server. It provide an information as well as a advertisement system which display the advertisements based on region i.e. when the region will change the advertisement would also change and only those advertisement would be shown which belongs to the same vicinity. Getting information of the same area is more useful for the passengers who can easily get down from the bus and can purchase their desired things. Especially for the tourists who are new to the city and do not know about the market places, this system will work as guide. Additional feature of the project is the announcement system which announces the next coming bus stop or any other emergency information. This service is also very useful for tourists they can easily roam throughout the city. Therefore the system motivates tourism in the city. This is a centralized information system where a server is responsible managing all the data related to advertisement and other spatial information. So it is easy to update information. The Fig 1 and fig 2 show the interconnection of hardware components:



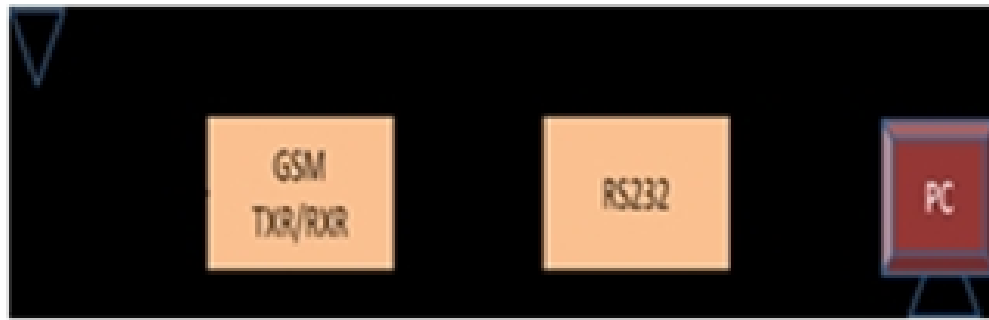


Figure2: Server side block diagram

The system can be divided in to 7 modules-

1. Interfacing GSM and GPS with Microcontroller
2. Interfacing LCD with Microcontroller.
3. Interfacing voice array with Microcontroller.
4. Power supply module.
5. Detect the hardware.
6. Database connection.
- 7.Data sending.

III. Algorithm: The goal of the scheduling algorithm is to maximize the amount of data delivered by the system, which is equivalent to minimizing the residual backlog of leaving. The proposed control algorithm is compared to other feasible and simpler schemes that are also reasonable for wireless scheduling in this environment.

State Proportional (SP) Algorithm: This mechanism simply allocates the transmission opportunities among users Proportionally to the buffer occupancy of each downlink data flow. The performance of the scheduling algorithms is evaluated for different configurations of the simulated environment. These parameters are:

- 1) Road traffic intensity, λ , denotes the average number of vehicles entering the coverage area per second.
- 2) Error probability distribution. The average packet error ratio (PER) between the base station and the vehicle.

IV. Conclusion: We depict a self contained centralized advertisement system which requires significantly lesser cost then the traditional advertisement systems. The system is very informative and provides the useful information about city areas from where the bus is passing and in this way it makes journey of people more interesting and comfortable. We can also see that this efficient advertisement system is very beneficial for the local business as it promotes tourism in the city. So this intelligent advertisement system fulfills the requirement of an information system in public transport which is effective, cheap and also participates in earning money to the government.

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