URBAN TRANSPORTS INFORMATION SYSTEM

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Abstract

Nowadays, people try to be informed on real-time about everything that surrounds them, with this information people intend to maximise their free time. For that purpose fast, secure and reliable information systems are used, which provide them with the required information right on time, satisfying the needs of the user. Active people use these systems without noticing because they are more and more part of their everyday life.

The ubiquity of devices like cellular phones or handheld devices equipped with cameras, video on demand, access to the internet, e-mail, among many others functionalities, enables the access to a multitude of diversified information anywhere at any time. Also, Mobile computing, now a mature and established field, appears destined to become the dominant computing paradigm [1]. People who use public transportsations demand (besides high quality and security in transports) to be informed about timetable schedules and eventual delays in an easy, fast and accurate way, enabling them to organise their available time. Concerning the needs mentioned above, an idea arises to develop an information system applied to urban transportations, more precisely autobuses. This system will have the ability of deal and provide information about arrivals time as well as delays that may occur, this information will be available in every station where the vehicle may stop by; the system will provide the users all the necessary information about timetables.

This paper describes the preliminary steps to design an information system applied to urban transportations, which intends to deal with the resources of the public transportation system. The system’s aim is to provide an accurate and reliable knowledge about the position of the vehicle of transportation, as well as about the time spent on traffic paths or even to make sure if there is any problem in what concerns the journeys previously established. For the development of the proposed system, the features of two well-known wireless communication systems were used: the Bluetooth® communication and the GSM (Global System for Mobiles)[2]. The infrastructure for the data management (using a central database) is also discussed. It will also be presented the message protocol and the frame layout and the type of sent/received information.

Throughout the sections of the article, features (in terms of hardware/software) will be presented and there will be descriptions about the main blocks of the system, about the status of the project and considerations about future steps and expansion of this work in progress. One final note to refer that this work in progress and is being developed in the scope of a final work of under-graduated students in a Polytechnic school. This case study serves to incite and instruct students on a system perspective where they are confronted with a problem with practical utility and must apply all skills acquired during their courses. These skills are related with knowledge on technological issues (computer engineering, instrumentation, communications, programming, database, etc).

References


[2] Bluetooth is a trademark owned by the Bluetooth Special Interest Group, Inc., USA. <URL: http://www.bluetooth.com>