

An Information Integration Platform for Mobile Computing

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Abstract. An information integration platform is developed to transport messages, files, structural data, semi structural data, and stream media at the same time. The GPS (Global Position System) information of the vehicles can be sent to the control center by wireless communication network such as GPRS (General Packet Radio Service), CDMA (Code Division Multiple Access), Internet and Intranet. The information integration platform control center can then dispatch command and receives information from the mobile terminals. GPS, GPRS, CDMA, Internet, Intranet and M-DMB (Mobile Digital Multimedia Broadcasting) network are all integrated into the platform. Different kinds of data can be sent and received simultaneity. The stream media can replay in time. There are two key technologies in the information integration platform; one is server cluster, other is mobile terminal development.

1 Background

An intelligent traffic system (ITS) has to cope with the computing network and mobile communication networks. Integrated information is the key technology to make Internet, Intranet, WAN (Wide Area Network), LAN (Local Area Network), and M-DMB (Mobile Digital Multimedia Broadcasting) network working harmonically. Because of the demand of transporting massive data in the platform, the bandwidth of the network transmission and the server capability are required more strictly[1][2][3]. The platform is required to meet the rapid increase of the internet clients and server nodes with high dependability, scalability, and other Quality of Service requirements [4][5].

A system structure that focuses on the integration of data and media on the ITS and M-DMB is required to solve the information integration problem. It focuses on the integration of data and media on the ITS and M-MDB, and utilizes the server cluster technology to support the integration platform in order and to keep its high performance. In the following sections, the system structure, the key cluster server technology and the application of the information integration platform will be presented.

2 System Structure of the Information Integration Platform

2.1 The System Structure

The information integration platform consists of the intelligent mobile terminals, software systems, integrated GPS, GPRS (CDMA), Internet (Intranet) and M-DMB networks. See Fig.1 and Fig.2 for more details.

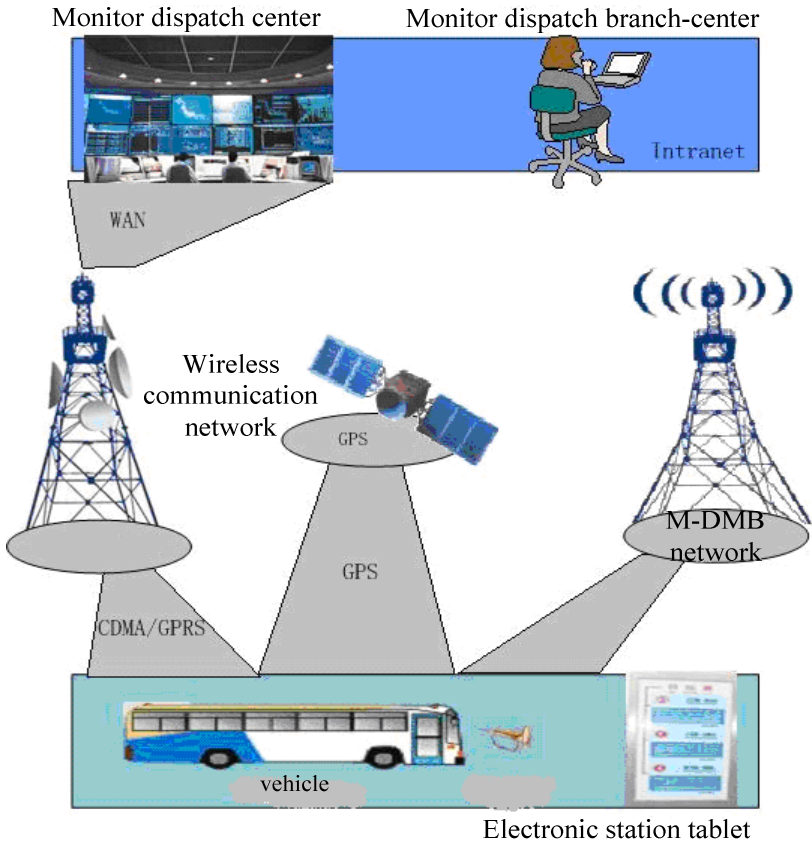


Fig. 1. The information integration platform

In our integration platform, the vehicles' GPS information, driver request messages, and the control center command information are sent by the integrated WAN on GPRS(CDMA) and Internet(Intranet). Different types of information, including messages, data files, stream media, etc can be sent and received freely and safely via public networks. The stream media can be played in real time. The GPS information and driver request are sent from the mobile terminals, and received by the control center in the platform.