

A Design of Simplified Route Map Display for Mobile Navigation System

Student : Yung-Chieh Lin

Advisor : Chuan-Fang Wang
Tai-Sheng Huang

Institute of Traffic and Transportation of National Chiao Tung University

Abstract

Vehicle navigation system has been developed for a long time and becomes more popular. However, the system is still restricted by the equipment function, e.g. difficult for updating electronic map, unable to consider the real time situation on roads. Therefore, it is inconvenient in using the system. Using a Server-Client framework to store electronic map and select the guided route at the server side and to sent the related data of the guided route to the client side through the wireless technology, this study wants to build a simplified route display system so that drivers can read the map easily.

The study reviewed the wireless-communication, mobile equipments, positioning system, and GIS system, then chooses CDMA for wireless-communication, GPS for positioning technology, and Microsoft eMbedded Visual Basic 3.0 to design the PDA software, which contains the functions of “Map direction synchronized with the moving direction”, “Turning warning”, “Zoom in / out”, and et cetera.

The result of this study has been proved using Taipei’s data and it conforms to what we expected. When displaying a route section on the screen with 5 nodes, each node needs a space of 58.2 Bytes on the PDA, there are plenty of memory spaces for other related information.

Key words : Mobile navigation, PDA, GPS, Simplified route.