

Development of Location-based Facilities Management System for Mobile Devices

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Facilities management has started to utilize mobile devices such as a personal digital assistant (PDA) in order to manipulate information about the building facilities at the job site. Software vendors such as VarIT, Tradeline, and ProSyst attract facilities managers by providing mobile-based facilities management applications for mobile devices. Some of these applications even utilize a wireless network technology to access the up-to-minute information at the job site regardless of their location. However, facilities professionals often find it hard to acquire and manipulate location data of the facilities whenever they don't have any distinctive location marks to be referenced. Although geographic positioning system (GPS) can identify the user's location and be employed for the mobile-based facilities management applications, identification of the location of the facility that is housed in side building will not be easy because the GPS signal from the satellite will be blocked by the building. In order to overcome the difficulties in identifying the indoor location, research has developed several indoor location systems such as Active Badge, DALs, 3D-iD, RADAR, and Cricket system using radio frequency or infrared technologies. Application of these indoor location systems to existing mobile-based facilities management is therefore expected to facilitate the process of manipulating the location information for facilities management with mobile devices at the job site. In order to provide the software vendors with a guideline for developing a location-based indoor facilities management system, it is necessary to test the feasibility of employing the indoor location system for mobile-based facilities management.

For this study, we have assembled a selected indoor user location identification system. Currently, we are about to develop a prototype facilities management application that makes use of the indoor location system installed at the test area. Once the development of the prototype application is completed, a group of facilities professionals will be invited to test the application. Feedbacks for the professionals will be utilized to produce a guide line for software vendors to develop location-based facilities management system for mobile devices. Also, it is expected that the result of this study will demonstrate how the location-based facilities management system would improve the manipulation of information, and finally, will help the facility professionals be more productive in making a certain decision at the job site.

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