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Abstract

Possibilities of Mobile Location-Based Services for Environmental Informatics

Environmental informatics can be seen as systems and methodologies for collecting, analysing and disseminating information about environment. Professionals as well as common people have a role in this system. People are affecting to environment, generating information about it and using the information. The fast development of information technology has provided new tools for more efficient environmental informatics.

One of the recent new information technological means is addition of location support to general mobile telecommunication terminals. Following from FCC enhanced emergency service (E-911) rules in US, the mobile networks and/or terminals are required to have a support to locate them for emergency purposes. The commercial value of this feature was also soon noticed, and intensive development of value-added mobile services using this property was started. The location enabled mobile terminals (mobile phones, smart phones and PDAs) made possible to built new type of mobile services, Location-Based Services (LBS). Locating support is soon becoming to be a standard feature of all mobile telecommunication terminals and networks. Within a few years time you can expect that majority of population, in those countries which have large mobile phone penetration, can be potentially dynamically located and reached for information dissemination and collection. The first generation of LBSs has now been introduced to general public, and they are slowly but steadily spreading. However, all of their possibilities and applications are not yet covered.

The potential of LBSs in supporting environmental informatics is high. They can be used in both directions: to disseminate environmental information to people focused on their present location; and to collect information about the persons dynamic location or population in a particular area. One example of environmental information that would be highly useful to mobile users is, for example, outdoor recreation and nature tourism information [see: www.sport.jyu.fi/index_en.htm]. Other example of collection and dissemination of environmental information would be a system supporting location-based ornithological observations collection and transmission to other interested parties.

In the paper the possibilities of LBSs for using to support environmental informatics are studied. LBS systems and their architecture are shortly reviewed. Their possibilities for new type of geographic environmental data collection and dissemination are analysed. Some cases of the utilisation of LBS to novel environmental informatics are presented.