LBS–Mobile – A New Way of Handling Data

Martina Stocker and Peter Duetschler (Switzerland)

Key words: Geoinformation/GI; GNSS/GPS; Location-Based Services; Mapping; Mobile Devices; Data Management

SUMMARY

1 Introduction Location-based services (LBS) can be defined as services that integrate a mobile device's location or position with other information so as to provide added value to a user. [1] It is the combination of the three basic components Internet, GIS and mobile devices while also integrating the user's position into the application. Object data (points, lines, polygons) with attributes which is stored in a database and visualized on a web map, can be accessed through the internet anytime. This concept meets the increasing demand of more flexible and real-time data availability. 2 LBS-Mobile Many location-based services only serve as an information provider. LBS-Mobile is a newly developed application which also allows object data to be registered, edited and managed. It is suited for a wide range of applications with geospatial data and runs on all commercial mobile devices. The GPS functionality of smartphones and tablets leads the user to the nearest object or point of interest (POI). Through the user interface objects can be checked, directly edited and maintained. New objects can be registered based on the user's current location. 3 Fields of application and workflow LBS-Mobile is a highly flexible tool. It can be used for field controls of existing data, updates of current statuses, general data management, obtaining new data or serve as a base for decision-making. Because the application is a web-solution all data is always accessible to all users in real-time. Not only from mobile devices but also from desktop PCs in the office. LBS-Mobile is independent of proprietary formats and ensures smooth data exchange to and from a wide range of sources and other programs. 4 Centimeter-level precision In order to increase the accuracy of the built-in GPS-receiver in smartphones and tablets, a method has been developed to connect a high-end survey GPS-receiver to the mobile device. Instead of using the internal position the external one is considered which can be measured with an accuracy of less than 5 cm. This results in a significant increase of the data quality. 5 Future prospects The current development of cheaper and lighter GPS-receivers (such as Piksi [2]) will result in a more wide-spread availability of precise positioning and enhance the quality location-based services. The targeted improvement in indoor-positioning will equally contribute to a significant growth of application possibilities for location-based services. References [1] Schiller J., Voisard A., Location-Based Services, 2004, Elsevier Inc. [2] swift-nav.com/piksi.html