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MOBILE PHONE APPLICATIONS IN THE WATER DOMAIN

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Abstract

This paper presents experiences with development of mobile phone demonstrator applications in the water domain in different application areas such as water distribution, hydrological data collection, flood management and water quality information dissemination. A brief overview of technologies for developing mobile phone applications is presented, with focus on those used in the demonstrated case studies: Short Message Services (SMS), Java Micro Edition (Java ME) and Android Operating System for smart phones (Android OS). SMS applications are presented for supporting operational management decisions in a water distribution system and for gathering and dissemination of user-recorded water level data for purposes of flood management. Java ME applications are demonstrated for designing advice serving systems for farmers in developing countries and urban flood forecasting and warning. Android OS smart phone applications are presented for dissemination of water quality information obtained from a catchment model and for monitored location-based water quality information of surface water bodies used for recreation and swimming. Some of the applications presented are integrated web–mobile phone applications, following the increasing trend of merging these two originally separate platforms into one that is universally accessible from different devices. The kinds of application areas suitable for harnessing the potential of mobile phone applications are discussed, together with advantages and disadvantages of different technologies.

Key words: Android, flood forecasting, flood warning, Java ME, mobile phone, SMS, water distribution, water quality

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