

IEEE Transactions on Software Engineering
Call for Papers
Special Issue on Software Engineering for the Wireless Internet

Background

The Internet is quickly evolving towards the wireless Internet. According to forecasts, by 2003 the wireless Internet will have the same number of users that the fixed Internet has today (around 300M). The IPV6 protocol, foundation of both the Internet and of 3G mobile phones using GPRS and UMTS, will blur the distinction between the Internet and mobile telecom networks. As a consequence data traffic will surpass voice traffic in the next few years. This huge new market will generate a tremendous demand for mobile services, such as travel information, roadside assistance, entertainment, ticketing and so on.

The wireless Internet will be based upon wirelines and devices from the traditional Internet, and will reuse some of its techniques and protocols. However, the wireless Internet will not be a simple add-on to the wireline Internet. New challenging problems arise from the handling of mobility, handsets with reduced screens and varying bandwidth. We list below a number of software related issues that must be addressed.

Themes

Software and service architecture

- Proposals of architectures
- Empirical studies to validate architectures
- Formalisms and notations to describe architectures
- Formal techniques to express and prove properties of architectures

Middleware to support service development

- Requirements on middleware
- Underlying paradigms and models
- Openness
- Performances
- Evaluation and comparison of underlying technologies
- Functions and issues in data management and replication (transaction recover, redundancy of data in mobile networks, policies for replication and synchronization)
- Functions and issues in service management (profile management, user authorization and authentication, quality of service monitoring, billing, etc.)
- Seamless integration of services using subservices from multiple organizations (content providers, service providers, network operators)

Heterogeneous clients

- Tools and methods to publish an application once for different clients
- Tools and techniques to manage changes on the client (bandwidth, GUI) over time
- Management of profiles, assuring the same profile to the same user on different clients.
- Derived requirements on architecture and middleware

Interaction styles and Agents

- Proposal and evaluation of new interaction styles for the mobile user
- Methods and technologies to support new interaction styles: agents, innovative GUIs, etc.

Important dates

Paper submission: 31 December 2002

Notification of acceptance: 02 June 2003

Publication Materials Due to IEEE Computer Society: 02 July 2003

Publication: September 2003 Issue

Submission procedure

Email paper (accepted formats: PDF, MSWord, Postscript) to: morisio@polito.it

Guest Editors

Maurizio Morisio, Dip. Automatica e Informatica, Politecnico di Torino, Italy.
Markku Oivo, University of Oulu, Oulu, Finland.