



**Call for Papers**  
**IEEE Personal Communications Magazine**  
**Feature Topic on**

**Mobile and Wireless Internet:**  
**Architectures and Protocols**

Since the last special issue on the subject of Mobile and Wireless Internet, considerable progress has been made on research problems within this field. To capture the essence of these challenging problems in a timely manner a feature topic in IEEE Personal Communications magazine has been proposed.

Mechanisms used in traditional networks such as buffer management, routing, error control, flow and congestion control will continue to deserve careful treatment in building the next generation Internet. Many established research institutions are actively working on end-to-end protocols, switching options, and feedback mechanisms to secure the transmission of voice, video, and data in many applications yet to come. Additional dimensions of complexity emerge across all layers of the protocol stack as end systems connect over wireless links and networks must provide effective mobility solutions.

For instance, the treatment of heterogeneous flows on wireless links to assure QoS in spite of fading while fulfilling the requirement for energy economy is a difficult question. Coupling the pace of data on wireless links with backbone congestion control also poses a significant challenge. An essential dispute central to this area of research is whether to proceed with modification of the end-system-based protocols or to introduce proxy-based solutions (e.g. Performance Enhancing Proxies). Moreover, with deployment of an optical core Internet using Dense Wavelength Division Multiplexing (DWDM), new open questions appear concerning the convergence of wireless access and the development of network architectures (e.g., based on a "radio on the fiber" approach) that can optimally leverage this emerging optical network.

Mobility introduces further challenges in areas never fully understood or resolved in the past. End systems will be connected using different technologies ranging from Bluetooth and infrared over Wireless LANs to UMTS/IMT2000. Satellites will also play an important role in providing Mobile Internet services. Handover among such different technologies must reconcile varying transmission, authentication, management and addressing capabilities across heterogeneous systems raising challenging research problems. Alternative approaches to support mobility and service continuity, despite discontinuity of communication, ranging from Mobile IP to session and application layer solutions, require careful consideration. The Mobile Internet will offer advanced commerce opportunities necessitating the need to investigate solutions for charging and billing that are optimized for a mobile and wireless environment. Last but not the least, the Mobile Internet is creating a platform for a new class of intelligent, location dependent, and context aware applications.

Original papers are solicited on topics relevant to these and further aspects of **Mobile and Wireless Internet**. To be accepted for publication, papers should focus on mobility features, Wireless Internet challenges, the convergence of wired and wireless segments for Internet services as well as the evolution of cellular mobile systems towards Internet-centric services and applications. We are soliciting papers describing both theoretical and experimental studies, with special emphasis on accuracy of the work and the investigation of assumptions that have been neglected in previous works. Prospective authors should submit an electronic version of the manuscript (PDF or postscript), for processing by the guest editors to Prof. Adam Wolisz, [wolisz@ee.tu-berlin.de](mailto:wolisz@ee.tu-berlin.de).

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**Call for papers: Feature topic**  
**"Mobile and Wireless Internet - Architectures and Protocols"**  
**in IEEE Personal Communications Magazine.**

Accepted papers will be also included in Personal Communications Interactive (PCI),  
the online version of the Personal Communications Magazine.

**Original papers are solicited. Topics of interest include (but are not limited to):**

- QoS support for heterogeneous IP flows on wireless links.
- Adapting Internet protocols to wireless or using proxies?
- Architecture, protocols, and parameter tuning for power efficient operation.
- Convergence of optical backbone and wireless access.
- Mobility support in heterogeneous, IP-based networks.
- Naming and addressing by object capabilities and attributes in Mobile Internet.
- Security issues for Mobile Internet.
- Mobile Internet services.
- Service continuity in networks with discontinuous radio coverage or rapidly changing quality.

**Submission:** Guidelines for prospective authors can be found on-line at

[http://www.comsoc.org/pci/pub\\_guidelines.html](http://www.comsoc.org/pci/pub_guidelines.html)

Send a PDF (preferably) or postscript file to

[wolisz@ee.tu-berlin.de](mailto:wolisz@ee.tu-berlin.de) (Prof. Adam Wolisz).

### **Schedule for submission:**

**Deadline for submission: June 1, 2001**

**Notification of acceptance: July 15, 2001**

**Camera ready version to the publication office: September 30, 2001**

**Publication date: 4th Quarter 2001**