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Special Issue on P2P Networking and P2P Services

Peer-to-peer (P2P) services have evolved to the most popular applications in today's Internet. Remarkably, only very simple protocols and almost no support by the transport network were needed to make these distributed services operable on a large scale in little time. P2P entails a highly attractive paradigm in distributed computing: P2P is based on *communication between equals*. The peers are highly *autonomous*. P2P services provide simple and efficient mechanisms to *pool and share exchangeable resources* like CPU cycles, disk space or content. These features allow that any peer can be removed without resulting in a complete loss of service, in contrast to the traditional client/server concept where a failure of the central entity may corrupt the service completely. A P2P mode of operation, however, also has some downsides. P2P protocols cause high traffic volumes, including data traffic as well as signalling traffic. P2P network topologies reveal a high variability and P2P traffic patterns of P2P applications fluctuate strongly in time and space. It is anticipated that traditional network design techniques and traffic engineering procedures may not longer be applicable. New methods are needed that maintain the autonomous and self-organizing characteristics of P2P in order to provide appropriate service stability, quality, and efficiency.

The focus of the special issue of ETT will include (but is not limited to) the following topics:

- P2P applications and services
  - content dissemination, distributed computation, distributed storage
- P2P protocols, algorithms, and infrastructures
  - self-organization, Distributed Hash Tables
  - load balancing, topology control, overlay management
  - middleware, toolkits, mediation service and interoperability
- Performance measurements and performance analysis of P2P networks
  - traffic/workload characterization, reliability
  - scalability, robustness, efficiency
- Security, privacy and accounting issues in P2P networks
  - anonymity, anti-censorship, trust
  - resource protection / DRM support
- Mobile P2P over different kinds of bearer services
  - 2.5G / 3G (GPRS/UMTS) / 802.11 (WLAN)
- Mobile P2P algorithms
  - algorithms for very low bandwidth requirements or small contents (e.g. ringing tones)
  - using mobile data context for P2P: location information, MBMS (multicast UMTS support)
- Mobile P2P & operator/provider requirements
  - mobile P2P & fixed P2P system interworking
- Business cases for P2P
  - economic analysis of business strategies

Electronic submission of pdf files or uuencoded gzipped postscript files is strongly encouraged. Please send your document to tutschku@informatik.uni-wuerzburg.de . If authors want to submit a hardcopy of their manuscript then the five copies will be needed. Please use the address of Kurt Tutschku given below. The following deadlines will apply:

- Submission of manuscripts	~~March 31, 2004~~ April 15, 2004 (New Date)
- Notification of acceptance	June 15, 2004
- Submission of final manuscript	July 15, 2004
- Publication	3rd quarter 2004

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Note: Papers for which a major revision is recommended will not be accepted for the special issue, but will be considered for publication in revised form in one of the regular issues of ETT.