Enabling Technologies and Standards for Wireless Mesh Networking (*MeshTech* 2009)

Message from the Workshop Chairs

It is a great pleasure to welcome you to the third edition of the IEEE Workshop on *Enabling Technologies and Standards for Wireless Mesh Networking*.

With the emergence of wireless mesh networks, new topologies appeared that complement the classic base station centered deployments. On the low complexity side, direct link set-ups, like the IEEE 802.11 Task Group "z" approach or the peer-to-peer specification currently being developed by the Wi-Fi Alliance, enable connectivity between end stations, thereby avoiding unnecessary transmissions to and from an Access Point. On the other hand, the wireless mesh networking standards developed within IEEE 802.16, IEEE 802.11s, IEEE 802.15.5, the IETF Next Generation Internet groups MIPSHOP, NETLMM, and MANET target at full solutions that provide all features necessary to enable spontaneous ad hoc connectivity within single hop range up to highly scalable, self-healing, reliable and cost-effective multi-hop set-ups for very diverse environments. Even beyond this scope, several research projects survey the feasibility of mesh networks formed of heterogeneous standards. With the traditional network topologies fading away, wireless mesh networks and their ad hoc relatives have become a hot topic in the research community. However, the new topologies affect protocol designs and interoperability with existing networks. Furthermore, it is still to be fully understood what technological challenges the above mentioned standardization efforts have to face, how they will evolve, and what application scenarios will be able to drive their possible success in the market.

The goal of this workshop is to bring together practitioners and researchers from both academia and industry in order to discuss the recent advances and future evolution of next generation peer-to-peer and mobile mesh/multi-hop relay networking technologies and standards for Wireless Personal, Local, Metropolitan, Rural and Regional Area Networks.

The answer to the call for papers was very encouraging also this year, thus indicating that MeshTech is now established as a reference event in the field. All papers underwent a rigorous review process, which entailed each paper being revised by at least three experts including program committee members and external reviewers. As a result of these reviews and a careful evaluation by the workshop co-chairs, 9 high-quality papers were finally selected out of the 35 overall submitted, corresponding to a low acceptance rate of 26%.

We wish to thank all the authors who honoured MeshTech 2009 by submitting papers to the workshop. Special thanks also to the Program Committee members and the external reviewers, for their invaluable work and responsiveness under really tight deadlines. Finally, we would like to thank the MASS 2009 workshop chair Ivan Stojmenovic, for giving us the opportunity to organize the workshop, and the whole MASS 2009 Organizing Committee, for the given support.
We sincerely hope that you'll enjoy the program.

October 2009

Guido R. Hiertz, *Riedel Communications, Germany*
Enzo Mingozzi, *University of Pisa, Italy*

MeshTech 2009
Workshop Organization

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Workshop Program

Design & Implementation of IEEE 802.11s Mesh Nodes with Enhanced Features
Pranjal Pandey, Sethuraman Satish, Joy Kuri, Haresh Dagale *(Indian Institute of Science, IN)*

Achieving Fairness in Lossy 802.11e Wireless Multi-Hop Mesh Networks
Qizhi Cao, Tianji Li *(National University of Ireland Maynooth, IE)*
Douglas Leith *(Hamilton Institute, IE)*

Starvation Effect Study in IEEE 802.11 Mesh Networks
Andrey Lyakhov, Ivan Pustogarov, Alexander Safonov, Mikhail Yakimov *(Russian Academy of Science, RU)*

Evaluation of a Potential Energy Methodology for Joint Routing and Scheduling in Wireless Mesh Networks
Leonardo Badia *(IMT Lucca Institute for Advanced Studies, IT)*

Route Selection for Capacity Maximization in Multi-Rate TDMA-based Wireless Ad Hoc Networks
Raffaele Bruno *(IIT-CNR, IT)*
Vania Conan, Stephane Rousseau *(THALES Communications, FR)*

Optimal Forwarder List Selection in Opportunistic Routing
Yanhua Li, Zhi-Li Zhang *(University of Minnesota, US)*
Wei Chen *(University of Electronic Science and Technology of China, CN)*

Multicast Routing and Channel Assignment in Wireless Mesh Networks
Chia-Sheng Chou, Chien Chen, Ying-Yu Chen, Rong-Hong Jan *(National Chiao Tung University, TW)*
Cheng-Chung Hsieh *(Institute for Information Industry, TW)*

Performance Evaluation of a WiMAX Multi-Hop Relay System to Support Multicast/Broadcast Service
Chengxuan He, Oliver Yang, Guo Qiang Wang *(University of Ottawa, CA)*

Quality-Aware Multiple Backbone Construction on Multi-interface Wireless Mesh Networks for P2P Streaming
Tzu-Chieh Tsai *(National Chengchi University, TW)*