



# LCN 2008

## The 33<sup>rd</sup> Annual IEEE Conference on Local Computer Networks (LCN)



*Montreal, Canada*  
**October 14-17, 2008**

**Keynote speakers:**  
Chip Elliott, BBN, USA  
Raouf Boutaba, Univ. of Waterloo, Canada

Conference Web site:  
<http://www.ieeelcn.org>

**Monday, October 13** | 5:00 PM **Registration and reception**

| <b>Tuesday, October 14</b> |  | <b>Workshops</b> |  |
|----------------------------|--|------------------|--|
| 7:30 - 8:30                | Registration   |                  |  |
| 8:30 - 12:30               | <b>Half Day</b> - Third IEEE LCN Workshop on Network Measurements (WNM)                      |                  |  |
| 9:00 - 4:00                | <b>Full Day</b> - Second IEEE LCN Workshop On User MObility and VEhicular Networks (ON-MOVE) |                  |  |
| 8:45 - 5:00                | <b>Full Day</b> - Eighth IEEE International Workshop on Wireless Local Networks (WLN)        |                  |  |

| <b>Wednesday, October 15</b> |   | <b>LCN 2008</b>               |   |
|------------------------------|---|-------------------------------|---|
| 7:30 - 8:30                  | Registration  |                               |   |
| 8:30 - 8:45                  | Welcome from LCN general chair and program co-chairs  |                               |   |
| 8:45 - 9:00                  | Welcome from the local host   |                               |   |
| 9:00 - 10:00                 | <b>Keynote #1: Chip Elliott</b> (title: "GENI: Overview & Plans")   |                               |   |
| 10:00 - 10:15                | <b>Talk: Ken Christensen</b> (title: "The Ethernet Alliance University Program: Bridging Academia and the Ethernet Industry") |                               |   |
| 10:15 - 10:45                | Coffee break  |                               |   |
| 10:45 - 12:25                | Session #1 (tracks A, B, and C)   |                               |   |
|                              | A - Peer-to-Peer Systems I  | B - Mesh and Optical Networks | C - Sensor Networks                         |
| 12:25 - 1:45                 | Lunch break   |                               |   |
| 1:45 - 3:25                  | Session #2 (tracks A, B, and C)   |                               |   |
|                              | A - Energy Awareness  | B - Routing                   | C - Implementation and Performance Analysis |
| 3:25 - 4:00                  | Coffee break  |                               |   |
| 4:00 - 5:15                  | Poster session  |                               |   |
| 6:30                         | Social event  |                               |   |

| <b>Thursday, October 16</b> |  | <b>LCN 2008</b>             |   |
|-----------------------------|--|-----------------------------|---|
| 8:00 - 9:00                 | Registration   |                             |   |
| 9:00 - 10:00                | <b>Keynote #2: Raouf Boutaba</b> (title: "Distributed Search Revisited: Resolving the conflict of Flexibility and Efficiency") |                             |   |
| 10:00 - 10:30               | Coffee break   |                             |   |
| 10:30 - 12:35               | Session #3 (tracks A, B, and C)  |                             |   |
|                             | A - Security I   | B - Performance Assessment  | C - Link Layer                                  |
| 12:35 - 1:45                | Lunch break  |                             |   |
| 1:45 - 3:25                 | Session #4 (tracks A, B, and C)  |                             |   |
|                             | A - Security II  | B - Optical Networks        | C - IEEE 802.11 Systems                         |
| 3:25 - 3:45                 | Coffee break   |                             |   |
| 3:45 - 5:50                 | Session #5 (tracks A, B, and C)  |                             |   |
|                             | A - Mobility   | B - Peer-to-Peer Systems II | C - Design Optimization and Resource Management |

| <b>Friday, October 17</b> |   | <b>Workshops</b> |  |
|---------------------------|---|------------------|--|
| 7:30 - 8:30               | Registration  |                  |  |
| 9:00 - 3:00               | <b>Full Day</b> - Fourth IEEE LCN Workshop on Network Security (WNS)  |                  |  |
| 8:30 - 5:15               | <b>Full Day</b> - Fourth IEEE International Workshop on Performance and Management of Wireless and Mobile Networks (P2MNET) |                  |  |
| 8:45 - 5:30               | <b>Full Day</b> - Third IEEE International Workshop on Practical Issues in Building Sensor Network Applications (SenseApp)  |                  |  |

Conference supporters:



**Session #1 (Tracks A, B, and C)**

**Session 1A: Peer-to-Peer Systems I (Session Chair: Burkhard Stiller)**

Cooperative Caching: The Case for P2P Traffic  
*Mohamed Hefeeda and Behrooz Noorzadeh*

Experimental Comparison of Peer-to-Peer Streaming Overlays: An Application Perspective  
*Jeffrey Seibert, David Zage, Sonia Fahmy, and Cristina Nita-Rotaru*

Range Queries and Load Balancing in a Hierarchically Structured P2P System  
*Simon Rieche, Bui Vinh, and Klaus Wehrle*

Constructing Low-Latency Overlay Networks: Tree vs. Mesh Algorithms  
*Knut-Helge Vik, Pål Halvorsen, Carsten Griwodz*

**Session 1B: Mesh and Optical Networks (Session Chair: Tim Strayer)**

IP Address Assignment in Wireless Mesh Networks  
*Alexander Zimmermann, Volker Böhme, and Arnd Hannemann*

An Efficient Cooperation of On-demand and Proactive Modes in Hybrid Wireless Mesh Protocol  
*Won-Ju Yoon, Sang-Hwa Chung, Seong-Joon Lee, and Yun-Sung Lee*

CORE: Centrally Optimized Routing Extensions for the IEEE 802.16 MeSH Mode  
*Parag Mogre, Nico d'Heureuse, Matthias Hollick, and Ralf Steinmetz*

Reducing network cost of many-to-many communication in unidirectional WDM rings with network coding  
*Long Long and Ahmed Kamal*

**Session 1C: Sensor Networks (Session Chair: Damla Turgut)**

Reconstructing the Plenoptic Function from Wireless Multimedia Sensor Networks  
*Azzedine Boukerche, Jing Feng, Richard Pazzi, Ying Huang, and Yan Du*

Improving Information Availability in Storage-Centric Sensor Networks  
*Nam Nguyen, Sudha Krishnamurthy, Peng Xie, and Douglas Jones*

Delay constrained placement of mobile data collectors in underwater acoustic sensor networks  
*Waleed Alsalih, Hossam Hassanein, and Selim Akl*

Path Guiding Mechanisms for a Mobile Anchor Improving or Balancing Location Accuracies of Static Sensors in WSNs  
*Chih-Yung Chang, Chao-Tsun Chang, Sheng-Wen Chang, Yu-Chieh Chen, and Ming-Hsien Li*

**Session #2 (Tracks A, B, and C)**

**Session 2A: Energy Awareness (Session Chair: Gary Kessler)**

Efficient Power Management for Wireless Sensor Networks: a Data-Driven Approach  
*MingJian Tang, Jinli Cao, and Xiaohua Jia*

Neighborhood Aware Power Saving Mechanisms for ad hoc networks  
*Abdelfettah Belghith and Wafa Akkari*

Energy Efficient Ethernet Encodings  
*Yanpei Chen, Tracy Wang, and Randy H. Katz*

Energy-Saving Scheduling in IEEE 802.16e Networks  
*Chia-Yen Lin and Hsi-Lu Chao*

**Session 2B: Routing (Session Chair: Adel Ben Mnaouer)**

Scalability Considerations for an Anomaly-free iBGP Routing  
*Uli Bornhauser, Peter Martini, and Martin Horneffer*

Spherical Coordinate Routing for 3D Wireless Ad-hoc and Sensor Networks  
*Shao Tao, Akkihebbal L. Ananda, and Mun Choon Chan*

A New Approach for the Construction of Multiple Multicast Trees Using Multiple Description Video for Wireless Ad Hoc Networks  
*Osamah Badarneh, Michel Kadoch, and Ahmed Elhakeem*

Single-Path Routing for Life Time Maximization in Multi-hop Wireless Networks  
*Yigal Bejerano, Seung-Jae Han, Keon-Taek Lee, and Amit Kumar*

**Session 2C: Implementation and Performance Analysis (Session Chair: Suleyman Uludag)**

DiCAP: Distributed Packet Capturing Architecture for High-Speed Network Links  
*Cristian Morariu and Burkhard Stiller*

TCP mechanisms for improving the user experience for time-dependent thin-stream applications  
*Andreas Petlund, Kristian Evensen, Carsten Griwodz, and Pål Halvorsen*

An Analysis on Error Servers for Stochastic Network Calculus  
*Jing Xie and Yuming Jiang*

Signal Strength Sensitivity and Its Effects on Routing in Maritime Wireless Networks  
*Chee Wei Ang and Wen Su*

**Poster Session**

A Distributed Mobility Management Scheme for Large-Scale Mobile Networks  
*Keita Kawano, Kazuhiko Kinoshita, and Nariyoshi Yamai*

Resource assignment for adaptively modulated interconnected WLANs  
*Amiotosh Ghosh and Ahmed Elhakeem*

Analysis and Evaluation of a Scalable QoS Device for Broadband Access to Multimedia Services  
*Wenyu Zhu, Thomas Dreibholz, and Erwin Rathgeb*

P2P Directory Search: Signature Array Hash Table  
*Ken Christensen and Miguel Jimeno*

Managing Energy Use in a Network with a New SNMP Power State MIB  
*Ken Christensen and Francisco Blanquicet*

Channel Assignment and Scheduling in Multichannel Wireless Sensor Networks  
*Yuanyuan Zeng, Naixue Xiong, and Tai-hoon Kim*

Graph Theory Based Aggregation of Sensor Readings in Wireless Sensor Networks  
*Tatiana Bokareva, Nirupama Bulusu, and Sanjay Jha*

Probabilistic Packet Dropping for Load Control in Multihop Wireless Networks  
*Daewon Jung, and Hyuk Lim*

Reputation based trust management using TCG in Mobile Ad-Hoc networks (RTA)

*Makan Pourzandi, Segla Kpodjedo, and Samuel Pierre*

Cross-Layer Analysis and Enhancement of Fast MIPv6 in the Real IEEE 802.11 based WLANs

*Yilin Song and Yi Sun*

TCP Computational Energy Cost within Wireless Mobile Ad Hoc Network

*Alaa Seddik-Ghaleb, Yacine Ghamri-Doudane, and Sidi-Mohammed Senouci*

Mitigate DDoS Attack Using TTL Buckets and Host Threatening Index

*Xi Chen, Jianhua Yang, and Gaogang Xie*

On Selfish Behavior using Asymmetric Carrier Sensing in IEEE 802.11 Wireless Networks

*Eunho Yang, Jaehyuk Choi, and Sunghim Lee*

End-to-end Diagnosis of QoS Violations with Neural Network

*Lifeng Zhou, Lei Chen, Hung Keng, and Lek Heng Ngoh*

A Cross-Domain Framework for Coordinated End-to-End QoS Adaptation

*Lifeng Zhou, Hung Keng Pung, and Lek Heng Ngoh*

A CGA Based IP Source Address Authentication Method in IPv6 Access Network

*Guang Yao and Jun Bi*

Performance of Opportunistic Scheduling Schemes for MIMO-OFDM Wireless LANs

*Mikael Gidlund and Per Ahag*

A Graph Theoretic Approach in Achieving Robust Peer-to-Peer Networking Paradigm

*Hosein Shafiei, Foozhan Hoseini, Ahmad Khonsari, and Mohamed Ould-Khaoua*

Queue-based Contention Control for Congested Multihop Wireless Networks

*Jaeseon Hwang and Hyuk Lim*

Self-adjusting Scheme for High Speed Routers

*Nizar Benneji and Adel Bouhoula*

Optimizing router locations for minimum-energy wireless networks

*Sungsoon Cho and John Hayes*

TabooQMR: A Taboo-based search algorithm improving Mamcra for Multicast Routing

*Adel Ben Mnaouer, Abdelfettah Belghith, Naouel Ben Ali, and Miklos Molnar*

Short-term QoS Provisioning in MPLS Ingress Nodes

*Masoomeh Torabzadeh and Wessam Ajib*

A Forwarding Protocol with Relay Acknowledgement for Vehicular Ad-Hoc Networks

*Inhyeok Jang, Wooyeol Choi, and Hyuk Lim*

Connectivity-Driven Flow Recovery for Time-Sensitive Transport Services

*Michio Honda, Jin Jakazawa, Yoshifumi Nishida, and Hideyuki Tokuda*

A Proactive Secure Routing Algorithm Defense against Node Compromise in Wireless Sensor Networks

*Xiangqian Chen, Kia Makki, Kang Yen, Niki Pissinou, and Zhihua Liu*

Two Dynamic Restoration Schemes for Survivable Traffic Grooming in WDM Networks

*Huaxiong Yao, Yan Yang, and Zongkai Yang*

Distributed Channel Assignments in Wireless Mesh Networks with Guaranteed Connectivity

*Suleyman Uludag and Kemal Akkaya*

A Tag Prediction Algorithm using Upper Bit in RFID Systems

*SungSoo Kim, YongHwan Kim, SeongJoon Lee, KyungHo Chung, and KwangSeon Ahn*

Hybrid Role Hierarchy for the Extended Role Based Access Control Model  
*Zhenxing Luo, Jing Chen, and Zuoquan Lin*

Performance Measurement and Queueing Analysis of Medium-High Blocking Probability of Two and Three Parallel Connection Servers  
*Chung-Ping Chen, Y. Bai, and Yin-Sheng Lee*

Spatially Disjoint Multipath Routing Protocol without Location Information  
*Juan Jose Galvez, Pedro Ruiz, and Antonio Gomez-Skarmeta*

Video Streaming with Network Coding and Opportunistic Relay in Wireless Mesh Networks  
*Boubacar Kimba Dit Adamou, Shihong Zou, and Shiduan Cheng*

An Efficient Anti-Collision Algorithm through Division Transfer of Tag ID in RFID Systems  
*Seong Joon Lee, Young Tae Kim, SungSoo Kim, Yong Soo Park, YongHwan Kim, and Kwang Seon Ahn*

Quality of Service Support in Wireless Local Area Network with Error Control Protocol  
*Abdelsalam Amer, Fayez Gebali, and Yousry Abdel-Hamid*

Analysis of Proxy MIPv6 Performance compared to Fast MIPv6  
*Ali Diab, Andreas Mitschele-Thiel, Kalin Getov, and Oliver Blume*

Interconnecting MANET and the Internet. A mobility approach  
*Francisco David Trujillo Aguilera, Antonio Jesús Yuste Delgado, Alicia Trivino Cabrera, Eduardo Casilari Perez, and Antonio Diaz Estrella*

Thursday – October 16, 2008 (LCN 2008)

### **Session #3 (Tracks A, B, and C)**

#### **Session 3A: Security I (Session Chair: J. William Atwood)**

A New Approach for Network Vulnerability Analysis  
*Hai Le Vu, Kenneth Khaw, Ty Chen, and Fei-Ching Kuo*

On the Application of Anomaly Detection in Reliable Server Pooling Systems for Improved Robustness against Denial of Service Attacks  
*Pascal Schöttle, Thomas Dreibholz, and Erwin P. Rathgeb*

Covert Channels in Multiplayer First Person Shooter Online Games  
*Sebastian Zander, Grenville Armitage, and Philip Branch*

Decision Process for Automated Selection of Security Protocols  
*Lars Völker, Christoph Werle, and Martina Zitterbart*

#### **Session 3B: Performance Assessment (Session Chair: Jalel Ben-Othman)**

Implementation and Performance Evaluation of Selective Repeat ARQ for WiMAX NS-2 model  
*Michael Hempel, Wei Wang, Hamid Sharif, Ting Zhou, and Puttipong Mahasukhon*

Evaluation and Parameterization of Voice Traffic Models for Disaster Area Scenarios  
*Nils Aschenbruck and Peter Martini*

Performance Evaluation of Optimal Sized Cluster Based Wireless Sensor Networks with Correlated Data Aggregation Consideration  
*Fan Bai and Abbas Jamalipour*

Reliability of Wireless Sensor Grids  
*Hosam Aboelfotoh and Ehab Elmallah*

Monitoring the Spatial-Temporal Effect of Internet Traffic Based on Random Matrix Theory  
*Jia Liu, Wenzhu Zhang, Jian Yuan, Depeng Jin, and Lieguang Zeng*

**Session 3C: Link Layer (Session Chair: Parag S. Mogre)**

Optimal distance-based clustering for tag anti-collision in RFID systems  
*Waleed Alsalih, Kashif Ali, and Hossam Hassanein*

A Hybrid MAC with Prioritization for Wireless Sensor Networks  
*Ines Slama, Bharat Sreshta, Badii Jouaber, and Djamal Zeglache*

Real-Time Performance Analysis of Adaptive Link Rate  
*Baoke Zhang, Karthikeyan Sabhanatarajan, Ann Gordon-Ross, and Alan George*

A Medium Access Control Protocol for UWB Sensor Networks with QoS Support  
*Tan Jicong, Mun Choon Chan, Hwee-Xian Tan, Peng-Yong Kong, and Chen Khong Tham*

Modeling two-flow interactions under SINR model in Multi-hop wireless networks  
*Saqib Razak, Vinay Kolar and Nael Abu-Ghazaleh*

**Session #4 (Tracks A, B, and C)**

**Session 4A: Security II (Session Chair: Salekul Islam)**

Fuzzy Trust Recommendation Based on Collaborative Filtering for Mobile Ad-hoc Networks  
*Junhai Luo, Xue Liu, Yi Zhang, Danxia Ye, and Zhong Xu*

IPclip: An Architecture to restore Trust-by-Wire in Packet-switched Networks  
*Harald Widiger, Stephan Kubisch, Peter Danielis, Jens Schulz, Daniel Duchow, Thomas Bahls, and Dirk Timmermann*

The Design of a Secure Key Management System for Mobile Ad hoc Networks  
*Azzedine Boukerche and Yonglin Ren*

Key Management in Wireless Sensor Networks with Inter-network Sensor Roaming  
*Sejin Choi, Venkatesh Sarangan, and Steve Trost*

**Session 4B: Optical Networks (Session Chair: Soumaya Cherkaoui)**

Avoidance of Multicast Incapable Branching Nodes for Multicast Routing in WDM Networks  
*Fen Zhou, Miklos Molnar, and Bernard Cousin*

Cost-Efficient Backup-Plane Architecture for Single-hop WDM Network  
*Noriaki Kamiyama*

Routing and Buffer Placement Optimization in Optical Burst Switched Networks  
*Jorge Sousa e Castro, João Manuel Ferreira, and Paulo Monteiro*

Multi-Criteria p-Cycle Network Design  
*Hamza Drid, Bernard Cousin, Samer Lahoud, and Miklos Molnar*

**Session 4C: IEEE 802.11 Systems (Session Chair: Hesham El-Sayed)**

Towards a Zero Configuration Authentication Scheme for 802.11 Based Networks  
*Carolin Latze, Ulrich Ultes-Nitsche, and Florian Baumgartner*

WBest: a Bandwidth Estimation Tool for IEEE 802.11 Wireless Networks  
*Mingzhe Li, Mark Claypool, and Robert Kinicki*

A Time Multiplexing Coordination Mechanism on Top of the IEEE 802.11 MAC Layer

*Alexander Leonovich and Huei-Wen Ferng*

QoE-based Network Selection for Multimedia Users in IEEE 802.11 Wireless Networks  
*Kandaraj Piamrat, Adlen Ksentini, César Viho, and Jean-Marie Bonnin*

## **Session #5 (Tracks A, B, and C)**

### **Session 5A: Mobility (Session Chair: Frank Hübner)**

On Supporting Handoff Management for Multi-Source Video Streaming in Mobile Communication Systems  
*Tarik Taleb, Tomoyuki Nakamura, and Kazuo Hashimoto*

Intelligent Mobility Support for IPv6  
*S. Wang, Yong Cui, and Sajal Das*

Receiver Access Control and Secured Handoff in Mobile Multicast using IGMP-AC  
*Salekul Islam and J. William Atwood*

A Client-based Vertical Handoff Approach for Seamless Mobility in Next Generation Wireless Networks  
*Yong-Sung Kim, Dong-Hee Kwon, and Young-Joo Suh*

### **Session 5B: Peer-to-Peer Systems II (Session Chair: Carsten Griwodz)**

A Collaborative Peer-to-Peer Architecture to Defend Against DDoS Attacks  
*Radwane Saad, Farid Naït-Abdesselam, and Ahmed Serhrouchni*

Supporting Geographical Queries onto DHTs  
*Jordi Pujol Ahulló, Pedro García López, Marc Sánchez Artigas, and Antonio F. Gómez Skarmeta*

Supporting a Seamless Map in Peer-to-Peer System for Massively Multiplayer Online Role Playing Games  
*Xinbo Jiang and Farzad Safaei*

A Loosely Synchronized Gossip-Based Algorithm for Aggregate Information Computation  
*Dongsheng Peng, Weidong Liu, Chuang Lin, Zhen Chen, and Jiaying Song*

An Ant Based Rate Allocation Algorithm for Media Streaming in Peer to Peer Networks  
*Amir Hesam Salavati, Hadi Goudarzi, and Mohammad Reza Pakravan*

### **Session 5C: Design Optimization and Resource Management (Session Chair: Nils Aschenbruck)**

Distributed and Scalable Control Plane for Next Generation Routers: A Case Study of OSPF  
*Kim-Khoa Nguyen and Brigitte Jaumard*

Online Control Techniques for Management of Bandwidth over Shared End-to-End Paths  
*Kaliappa Ravindran, and Mohammad Rabby*

Optimized Resource Allocation for the Uplink of SFBC-CDMA Systems  
*Taimour Aldalgamouni and Ahmed Elhakeem*

Efficient Bandwidth Management in Broadband Wireless Access Systems Using CAC-based Dynamic Pricing  
*Bader Al-Manthari, Nidal Nasser, Najah Abu Ali, and Hossam Hassanein*

Smart Spanning Tree Bridging For Metro Ethernets  
*Aref Meddeb*

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