



LCN 2009

The 34th Annual IEEE Conference on Local Computer Networks (LCN)



Zurich, Switzerland
October 20-23, 2009

Keynote speakers:

Alberto Leon-Garcia, U. of Toronto, Canada
Ken Christensen, U. of South Florida, USA

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

Tuesday, October 20		Workshops	
7:30 - 8:30	Registration		
8:30 - 6:00	Full Day – Fifth IEEE LCN Workshop on Security in Communications Networks (SICK)		
8:30 - 6:00	Full Day – Fourth IEEE International Workshop on Practical Issues in Building Sensor Network Applications (SenseApp)		
8:30 - 6:00	Full Day – Fifth IEEE International Workshop on Performance and Management of Wireless and Mobile Networks (P2MNET)		

Wednesday, October 21		LCN 2009	
7:30 - 8:15	Registration		
8:15 - 8:30	Welcome from LCN general chair and program co-chairs		
8:30 - 9:00	Welcome from the local host		
9:00 - 10:00	Keynote #1: Prof. Alberto Leon-Garcia, Canada (title: "ICT as Enabler of Smart Infrastructures")		
10:00 - 10:30	Coffee break		
10:30 - 12:10	Session #1 (tracks A, B, and C)		
	A – Security	B – Link Layer	C – Wireless sensor networks I
12:10 - 1:20	Lunch		
1:20 - 3:00	Session #2 (tracks A, B, and C)		
	A – Wireless LAN	B – Core Networks I	C – Multimedia & real-time communication
3:00 - 3:30	Coffee break		
3:15 - 4:30	Poster and demo session		
5:00	Gathering in Swissotel lobby for social event and dinner (details available in Zürich)		

Thursday, October 22		LCN 2009	
8:00 - 9:00	Registration		
9:00 - 10:00	Keynote #2: Prof. Ken Christensen, USA (title: "Green Networks: Opportunities and Challenges")		
10:00 - 10:30	Coffee break		
10:30 - 12:10	Session #3 (tracks A, B, and C)		
	A – Medium Access Control	B – Quality of Service	C – Wireless sensor networks II
12:10 - 1:20	Lunch		
1:20 - 3:00	Session #4 (tracks A, B, and C)		
	A – Peer-to-Peer Systems	B – Routing Protocols	C – Cross-layer optimization
3:00 - 3:30	Coffee break		
3:30 - 5:10	Session #5 (tracks A, B, and C)		
	A – Core Networks II	B – Mobility management	C – Node Placement Strategies

Friday, October 23		Workshops	
7:30 - 8:30	Registration		
8:30 - 12:30	Half Day – Fourth IEEE LCN Workshop on Network Measurements (WNM)		
2:00 – 6:00	Half Day – Second IEEE LCN Workshop on Wireless and Internet Services (WISE)		
8:30 - 6:00	Full Day – Ninth IEEE International Workshop on Wireless Local Networks (WLN)		
8:30 - 6:00	Full Day – Third IEEE LCN Workshop On User MObility and VEhicular Networks (ON-MOVE)		

Conference supporters:



Stadt Zürich



Wednesday – October 21, 2009 (LCN 2009)

10:30 - 12:10 Session #1 (Tracks A, B, and C)

Session 1A: Security (Session Chair: Damla Turgut)

Channel Switch and Quiet Attack: New DoS attacks exploiting the 802.11 Standard
Bastian Königs, Florian Schaub, Frank Kargl and Stefan Dietzel

Stealthy dissemination in intruder tracking sensor networks
Damla Turgut, Begumhan Turgut, and Ladislau Boloni

IMAPS: Imbricated Authentication Protocol Suite for Mobile Users and Groups
Nidal Aboudagga, Giacomo de Meulenaer, Mohamed Eltoweissy, and Jean-Jacques Quisquater

Evaluation of Authentication Signaling Loads in 3GPP LTE/SAE Networks
Chan-kyu Han, Hyoung-Kee Choi, Jung Woo Baek, and Ho Woo Lee

Session 1B: Link Layer (Session Chair: Matthias Hollick)

A Localized and Distributed Channel Assignment Scheme for Wireless Mesh Networks
Sridhar K N, Claudio Casetti, and Carla-Fabiana Chiasserini

Cluster-based Channel Assignment in Multi-radio Multi-channel Wireless Mesh Networks
Anjum Naveed and Salil Kanhere

Algorithms to Minimize Channel Interference in Multiple Channels Multiple Interfaces Environment
Tuan Luong, Bu Sung Lee, Ming-Shiunn Wong, and Chai Kiat Yeo

Distributed Receiving in RFID Systems
Kashif Ali and Hossam Hassanein

Session 1C: Wireless Sensor Networks I (Session Chair: Jalel Ben-Othman)

Backbone MAC for Energy-constrained Wireless Sensor Networks
Markus Waelchli, Torsten Braun, Thomas Staub, and Reto Zurbuchen

PiRAT: Pivot Routing for Alarm Transmission in Wireless Sensor Networks
Nancy El Rachkidy, Alexandre Guittou, Bacem Bakhache, and Michel Misson

An Energy Efficient and QoS Aware Multipath Routing Protocol for Wireless Sensor Networks
Bashir Yahya and Jalel Ben-othman

CSR: Convex Subspace Routing Protocol for WSNs
Dulanjalie Dhanapala and Anura Jayasumana

1:20 - 3:00 Session #2 (Tracks A, B, and C)

Session 2A: Wireless LAN (Session Chair: Jens Tölle)

Deploying a real IEEE 802.11e testbed to validate simulation results
Alvaro Torres, Carlos Calafate, Juan Carlos Cano Escriba, and Pietro Manzoni

VoIP Capacity Analysis in IEEE 802.11 WLAN
Kewin Stoeckigt and Hai Vu

A self-configured handoff scheme for IEEE 802.11-based wireless networks
Azzedine Boukerche and Zhenxia Zhang

A Polling Method Using Orthogonal Signaling for Wireless Local Area Networks
Jae Ko, Soonmok Kwon, and Chee-Ha Kim

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Session 2B: Core Networks I (Session Chair: Aref Meddeb)

LOP RE: Range Encoding for Low Power Packet Classification
Xin He, Jorgen Peddersen, and Sri Parameswaran

An Inherently Anomaly-free iBGP Architecture
Uli Bornhauser, Peter Martini, and Martin Horneffer

Building Cost Effective Lower Layer VPNs: The ILEC/CLEC Paradox
Aref Meddeb, Abdelwahed Berguiga, and Habib Youssef

A Scalable Cluster Distributed BGP Architecture for Next Generation Routers
Wissam Hamzeh and Abdel Hafid

Session 2C: Multimedia & Real-time Communication (Session Chair: Abdelhamid Mellouk)

Reliable Transmission Over Covert Channels in First Person Shooter Multiplayer Games
Sebastian Zander, Grenville Armitage, and Philip Branch

Multimedia Group Synchronization Approach for One-way Cluster-to-Cluster Applications
Fernando Boronat, Mario Montagud, and Juan C. Guerri

Optimization Bandwidth Sharing for Multimedia Transmission Supporting Scalable Video Coding
Mohammad Sadegh Talebi, Ahmad Khonsari, and Mohammad Hassan Hajiesmaili

Parametric Speech Quality Models for Measuring the Perceptual Effect of Network Delay Jitter
Sofiene Jelassi, Habib Youssef, and Guy Pujolle

3:15 – 4:30 Poster and Demo Session

Short Papers

Cost-effective Survivable ISP Subscription
Hamid Hajabdolali, Sajjad Zarifzadeh, Ahmad Khonsari, and Amir Nayyeri

Enhancements for IEEE 802.11 Networks with Directional Antennas
Tamer Nadeem

Supporting Multipoint-to-Point Communications in All-Optical WDM Networks
Fen Zhou, Mohand Saidi, Miklos Molnar, and Bernard Cousin

A Generalised Prediction Model of First Person Shooter Game Traffic
Antonio Cricenti and Philip Branch

Proxy-based MOBIKE Fast Handoff for Femtocell Integrated Mobile Network
Tsunehiko Chiba, Satoshi Komorita, and Hidetoshi Yokota

A Performance Evaluation of Warning Message Dissemination in 802.11p based VANETs
Francisco Martinez, Juan Carlos Cano Escriba, Carlos Calafate, and Pietro Manzoni

Validating GrADAR -- an Approach for Graph-based Automated DoS Attack Response
Marko Jahnke, Christian Thul, Jens Toelle, and Peter Martini

Performance Analysis of a Fibre Channel Switch supporting Node Port Identifier Virtualization: Preliminary Results
Suresh Muknahallipatna, Joseph Miles, and Johnson Howard

A Study of IEEE 802.16 Bandwidth Perception Management Policies
Andrés Arcia, Nicolas Montavont, Alejandro Paltrineri, and David Ros

P-OLSR: Position-based Optimized Link State Routing for Mobile Ad Hoc Networks
Sachin Sharma

A New Self-Detection Scheme for Sensor Network Boundary Recognition
Ijaz Khan, Hala Mokhtar, and Madjid Merabti

Private Handshakes with Optional Accountability
Yanjiang Yang, Jian Wenq, and Fenq Bao

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TCP Feno: Enhancement for Higher Accuracy of Loss Differentiation Over Small Buffer Heterogeneous Networks
Jae-Hyun Hwang, See-Hwan Yoo, and Chuck Yoo

Performance Comparison of Content-oriented Networking Alternatives: A Tree versus A Distributed Hash Table
Jaeyoung Choi, Jinyoung Han, Eunsang Cho, Hyun-chul Kim, Taekyoung Kwon, and Yanghee Choi

Performance of Handover for Multiple Users in Heterogeneous Wireless Networks
Madalina Fiterau, Olga Ormond, Gabriel-Miro Muntean

Probabilistic Routing for Multiple Flows in Wireless Multi-hop Networks
Yong Cui, Wenjie Hu, Sasu Tarkoma, and Antti Ylä-Jääski

A Common API for Hybrid Group Communication
Matthias Wählisch, Thomas Schmidt, and Georg Wittenburg

Practical Security in P2P-based Social Networks
Kalman Graffi, Patrick Mukherjee, Burkhard Menges, Daniel Hartung, Aleksandra Kovacevic, and Ralf Steinmetz

Statistics-based ID Management for Load Balancing in Structured P2P Networks
Daniel Warneke and Christian Dannewitz

A Divide-and-Conquer Scheme for Assigning Roles in Multi-Channel Wireless Mesh Networks
Benoit Datties, Fabrice Theoleyre, and Andrzej Duda

Power Control for Multiple Access Communication Systems with Multi-Packet Reception Capability
Wooyeol Choi, Daewon Jung, Heung-No Lee, and Hyuk Lim

Network-layer Soft Vertical Handoff Schemes without Packet Reordering
Tong Shu, Min Liu, Zhongcheng Li, and Kun Zheng

A Novel Extension of Kruskal's Algorithm in Multicast Routing
Mohamed Aissa, Adel Ben Mnaouer, and Abdelfettah Belghith

Feedback based Distributed Admission Control in 802.11 WLANs
Preetam Patil, Vipul Mathur, Varsha Apte, and Kannan Moudgalya

Signal Strength-based Adaptive Multimedia Delivery Mechanism
Ramona Trestian, Olga Ormond, and Gabriel-Miro Muntean

Distributed Bandwidth Reservation Strategies to Support Efficient Bandwidth Utilization and QoS on a Per-Link Basis in IEEE 802.16 Mesh Networks
Parag Mogre, Ralf Steinmetz, and Matthias Hollick

Understanding the Role of Multi-Rate Retry Mechanism for Effective Rate Control in 802.11 Wireless LANs
Neda Koci, and Mahesh Marina

On Providing QoS in Optical Burst Switched Networks using Feedback Control
Wael Hosny Fouad Aly, Mohamed Faten Zhani, and Halima Elbiaze

Performance of a multi-channel MAC protocol based on IEEE 802.15.4 Radio
P. Gireesan Namboothiri and Krishna Sivalingam

Performance of Cooperative Relaying with ARQ in Wireless Sensor Networks
Stephen Culver and Mikael Gidlund

Peer-to-Peer Storage Systems: How Much Locality Can They Tolerate?
Frederic Giroire, Julian Monteiro, and Stephane Perennes

CARP: A Context-Aware Routing Protocol for Delay-Constrained Traffic in Sensor Networks
Abdelmounaam Rezgui and Mohamed Eltoweissy

Optimal Cluster Head Election for Efficient Resource Discovery Mechanism in Wireless Sensor Networks
Muhammad Raza, Ali Akbar, and Waqar Mahmood

Stochastic Traffic and Connectivity Dynamics for Vehicular Ad-Hoc Networks in Signalized Road Systems
Ivan Wang-Hei, Ho, Kin Leung, and John Polak

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Data Fusion Latency in Internet-based Sensor Networks

Panho Lee, Anura Jayasumana, Saket Doshi, and Chandra V Chandrasekar

Optimizing Link Weight in OSPF Routing under Unknown Traffic Matrices

Xiaomei Cheng, Sheng Wang, and Xiong Wang

Framework for Multi-class and Dynamic Flow-aware Admission Control

Brikena Statovci-Halimi and Vincent Emeakaroha

A Deterministic Approach to Evaluate Path Loss Exponents in Large-Scale Outdoor 802.11 WLANs

Ting Zhou, Hamid Sharif, Michael Hempel, Puttipong Mahasukhon, Wei Wang, and Tao Ma

Boundary Recognition in Sensor Networks by Building Relative Contours

Kai Li and Yun Wang

Battery-Aware Localization in Wireless Networks

Ali Saidi, Chuntao Zhang, Silviu Chiricescu, Loren Rittle, and Yang Yu

Modeling multi-path routing and congestion control under FIFO and Fair Queuing

Luca Muscariello and Diego Perino

Offered-Load Model for Pareto Inter-Arrival Network Traffic

Rakesh Singhai, Shiv Joshi, and R. K. Bhatt

An Architecture for Scalable Network Defense

Tim Strayer, Walter Milliken, Ronald Watro, Walt Heimerdinger, Steve Harp, Robert Goldman, Dustin Spicuzza, Beverly Schwartz, David Mankins, Derrick Kong, and Pieter Mudge Zatko

BIDIR-SAM: Large-Scale Content Distribution in Structured Overlay Networks

Matthias Wählisch, Thomas Schmidt, and Georg Wittenburg

Demos

Channel Switch and Quiet Attack: New DoS Attacks exploiting the 802.11 Standard

Bastian Könings, Florian Schaub, and Frank Kargl

Intrusion Detection in Tactical Multi-Hop Networks

Elmar Gerhards-Padilla, Marko Jahnke, and Alexander Wenzel

Dynamic Link Control with Changing Traffic for Power Saving

Yutaka Fukuda, Takeshi Ikenaga, Hitomi Tamura, Masato Uchida, Kenji Kawahara, and Yuji Oie

CompactPSH

Thomas Bocek

Designing and Running Concurrent Future Networks

Denis Martin, Helge Backhaus, Lars Völker, Hans Wippel, Peter Baumung, Benjamin Behringer, and Martina Zitterbart

Implicit Service Differentiation via Shortest Queue First

Luca Muscariello and Thomas Bonald

A Publish/Subscribe Messaging System for Wireless Sensor Communications

Andrea Munari, Beat Weiss, Hong Linh Truong, Wolfgang Schott, and Urs Hunkeler

Dynamic Task Deployment and Energy Management in Heterogeneous Sensor Networks

Benjamin Le Corre, Vincent Gay, Jeremie Leguay, and Mario Lopez-Ramos

Prototyping a Network of Information

Christian Dannewitz and Thorsten Biermann

EAP-TPM – A New Authentication Protocol for IEEE 802.11 Based Network

Carolin Latze, Ulrich Ultes-Nitsche, and Josua Hiller

Network based real-time control of a laser show projection system

Matthias Frank

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Thursday – October 22, 2009 (LCN 2009)

10:30 - 12:10 Session #3 (Tracks A, B, and C)

Session 3A: Medium Access Control (Session Chair: Janelle Harms)

Efficient Medium Access Control Design -- A Game Theoretical Approach
Lin Chen and Jean Leneutre

Incorporating Spatial Reuse into Algorithms for Bandwidth Management and Scheduling in IEEE 802.16j Relay Networks
Parag Mogre, Matthias Hollick, and Stefan Dimitrov

A Single Radio Based Channel Datarate Aware Parallel Rendezvous MAC Protocol for Cognitive Radio Networks
Lei Jiao and Frank Li

Medium Access Control Scheme Design for MANETs: A Collision Classification Approach
Qifei Zhang, Baolin Sun, Chao Gui, and Zhifeng Dai

Session 3B: Quality of Service (Session Chair: Tom Pfeifer)

An Optimization based Approach to Maximizing QoS Assurance for IPTV Triple Play Services on the Internet Backbone
Gajaruban Kandavanam, Dimitri Botvich, Sasitharan Balasubramaniam

Topology Control for Enhanced QoS on Infrastructure-Less Heterogeneous Radio Networks
Lynda Mokdad, Amir Djouama, Marwen Abdennebi and Samir Tohme

Adaptive Video Compression Rate Optimization in Wireless Access Networks
Xiaoling Qiu, Haiping Liu, Dipak Ghosal, Biswanath Mukherjee, John Benko, Wei Li, and Rashmi Bajaj

Preemption Mechanisms for Push-to-Talk in Ad Hoc Networks
Erlend Larsen, Lars Landmark, Vinh Pham, Paal Engelstad, and Oivind Kure

Session 3C: Wireless Sensor Networks II (Session Chair: Torsten Braun)

Maximizing the lifetime of a sensor network through domatic partition
Kamrul Islam, Selim Akl, and Henk Meijer

Energy efficient information collection in wireless sensor networks with adaptive compressive sensing
Chun Tung Chou, Rajib Rana, and Wen Hu

Information-Aware Traffic Reduction for Wireless Sensor Networks
Edith Ngai, Erol Gelenbe, and Gregory Humber

Fair Allocation of Sensor Measurements Using Shapley Value
Sang-Seon Byun, Hessam Mousavinik, and Ilangko Balasingham

1:20 - 3:00 Session #4 (Tracks A, B, and C)

Session 4A: Peer-to-Peer Systems (Session Chair: Tim Strayer)

FISHEYE: Topology Aware Choice of Peers for Overlay Networks
Dragan Milic and Torsten Braun

A Utility Model for Peering of Multi-Provider Content Delivery Services
Mukaddim Pathan and Rajkumar Buyya

CompactPSH: An Efficient Transitive TFT Incentive Scheme for Peer-to-Peer Networks
Thomas Bocek, Yehia El-khatib, Fabio Hecht, David Hausheer, and Burkhard Stiller

Managing your Content with CIMPLE - A Content-Centric Storage Interface
Thomas Delaet and Wouter Joosen

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Session 4B: Routing Protocols (Session Chair: Pedro M. Ruiz)

End-to-End Path Stability of Reactive Routing Protocols in IEEE 802.11 Ad Hoc Networks

Jerry Chun-Ping Wang, Mehran Abolhasan, Daniel Franklin, and Farzad Safaei

Dynamically Self Adjustable Proactive Routing Protocols for Mobile Ad Hoc Networks

Abdelfettah Belghith and Mohamed Amine Abid

Energy-Efficient Routing in Mobile Wireless Sensor Networks Using Mobility Prediction

Andrea Munari, Wolfgang Schott, and Sukanya Krishnan

BRUMA: Beacon-less Geographic Routing for Multicast Applications

Juan A. Sanchez, Rafael Marin-Perez, and Pedro Ruiz

Session 4C: Cross-layer Optimization (Session Chair: Nils Aschenbruck)

Distributed Strategies for Minimum-Latency Cooperative Retransmission in Wireless Networks

Lixiang Xiong, Lavy Libman, and Guoqiang Mao

Towards Optimal Forwarding in Wireless Networks: Opportunistic Routing Meets Network Coding

Tahir Mehmood, and Lavy Libman

A Route-Control Mechanism for Improving the Performance of Transport Protocols in a MANET

Anna Levin and Reuven Cohen

On Cooperative Communication in Ad-Hoc Networks: The Case for Uncoordinated Location-Aware Retransmission Strategies

Lixiang Xiong, Lavy Libman, and Guoqiang Mao

3:30 - 5:10 Session #5 (Tracks A, B, and C)

Session 5A: Core Networks II (Session Chair: Jorge Cobb)

Solving the weighted ring edge-loading problem without demand splitting using a Hybrid Differential Evolution Algorithm

Anabela Bernardino, Eugénia Bernardino, Juan M. Sánchez, Juan A. Gómez, and Miguel A. Vega

Loss Synchronization, Router Buffer Sizing and High-Speed TCP Versions: Adding RED to the Mix

Sofiane Hassayoun and David Ros

Rate-Independent Delay Across State-Reduced Networks

Jorge Cobb

A Network-Layer Proxy for Bandwidth Aggregation and Reduction of IP Packet Reordering

Kristian Evensen, Dominik Kaspar, Paal Engelstad, Audun Hansen, Carsten Griwodz, and Pål Halvorsen

Session 5B: Mobility Management (Session Chair: Marc Emmelmann)

Global Mobility Support in Proxy Mobile IPv6 for Mobility-Unaware Hosts

Soonghwan Ro and Hanh Nguyen

Influence of Network Load on the Performance of Opportunistic Scanning

Marc Emmelmann, Sven Wiethoelter, and Hyung-Taek Lim

Supporting Nested NEMO Networks with the Unified MANEMO Architecture

Ben McCarthy, Christopher Edwards, and Matthew Jakeman

Session 5C: Node Placement Strategies (Session Chair: Hossam Hassanein)

Connectivity Optimization with Realistic Lifetime Constraints for Node Placement in Environmental Monitoring

Fadi Al-Turjman, Hossam Hassanein, and Mohamed Ibnkahla

Optimal Placement of Gateways in Multi-Hop Wireless Mesh Networks: A Clustering-based Approach

Benyamina Djohara, Abdelhakim Hafid, and Michel Gendreau

A Robust Relay Node Placement Heuristic for Structurally Damaged Wireless Sensor Networks

Fatih Senel, Mohamed Younis, and Kemal Akkaya

Robust Grid-based Deployment Schemes for Underwater Optical Sensor Networks

Abdullah Reza and Janelle Harms