IEEE International Symposium on Wireless Communication Systems 2007

Trondheim, Norway
16-19 October 2007

Conference Program

IEEE

IEEE VTS

IEEE COMMUNICATIONS SOCIETY

Table of Contents

PROGRAM AT A GLANCE

OS: oral presentation session; **PS**: poster presentation session
21 oral presentation sessions; **6** poster presentation sessions
5 papers per oral session except for OS 7A-7C that may have 6 papers; **20** minutes / oral presentation

Note:
The welcome reception will be hosted by The City of Trondheim (Trondheim Kommune) at Archbishop's Palace (Erkebispegården), Trondheim. The conference dinner and best paper awards will be at Olav Tryggvasson II, Radisson SAS Royal Garden Hotel.

16 October 2007 (Tuesday)

Time	Kristiansten (1st Floor)	Tavern (Ground Floor)	Austråt (2nd Floor)	Sverresborg (1st Floor)	Foaje (1st Floor)
08:30-09:00	Registration & Information				
09:00-10:30		Tutorial 1	Tutorial 3	Tutorial 5	
10:30-11:00		**Coffee Break (Coffee and tea served at Foaje)**			
11:00-12:30		Tutorial 1	Tutorial 3	Tutorial 5	
12:30-14:00		**Lunch Break**			
14:00-15:30		Tutorial 2	Tutorial 4	Tutorial 6	
15:30-16:00		**Coffee Break (Coffee and tea served at Foaje)**			
16:00-17:30		Tutorial 2	Tutorial 4	Tutorial 6	

17 October 2007 (Wednesday)

Time	Kristiansten (1st Floor)	Olav Tryggvasson II (1st Floor)	Haraldsalen (1st Floor)	Sverresborg (1st Floor)	Foaje (1st Floor)
08:00-08:30	Registration & Information				
08:30-09:00		Opening & Welcome Address by Prof. Arne Sølvberg, Faculty Dean, NTNU			
09:00-09:45		Keynote Speech 1 - Prof. David Gesbert, Eurecom Institute			
09:45-10:30		Keynote Speech 2 - Dr. Hans Martin Ritt, The MathWorks			
10:30-11:00		**Coffee Break (Coffee and tea served at Foaje)**			
11:00-12:40		OS 1A	OS 1B	OS 1C	
12:40-14:00		**Lunch at Cicignon**			
14:00-15:40		OS 2A	OS 2B	OS 2C	PS 1A
15:40-16:00		**Coffee Break (Coffee and tea served at Foaje)**			
16:00-17:40		OS 3A	OS 3B	OS 3C	PS 1B
18:30-20:00	**Welcome Reception at Archbishop's Palace, Trondheim**				

18 October 2007 (Thursday)

Time	Kristiansten (1st Floor)	Olav Tryggvasson II (1st Floor)	Haraldsalen (1st Floor)	Sverresborg (1st Floor)	Foaje (1st Floor)
08:00-08:30	Registration & Information				
08:30-09:30		Keynote Speech 3 - Prof. Dr. Andreas Molisch, Mitsubishi Electric Research Labs and Lund University			
09:30-10:30		Keynote Speech 4 - Prof. Mario Gerla, UCLA			
10:30-11:00		**Coffee Break (Coffee and tea served at Foaje)**			
11:00-12:40		OS 4A	OS 4B	OS 4C	PS 2A
12:40-14:00		**Lunch at Cicignon**			
14:00-15:40		OS 5A	OS 5B	OS 5C	PS 2B
15:40-16:30		**Coffee Break (Coffee and tea served at Foaje)**			
16:30-17:50		Panel			
20:00-22:30	**Conference Dinner & Best Paper Awards at Olav Tryggvasson II**				

19 October 2007 (Friday)

Time	Kristiansten (1st Floor)	Olav Tryggvasson II (1st Floor)	Haraldsalen (1st Floor)	Sverresborg (1st Floor)	Foaje (1st Floor)
08:30-09:00	Information				
09:00-10:40		OS 6A	OS 6B	OS 6C	PS 3A
10:40-11:00		**Coffee Break (Coffee and tea served at Foaje)**			
11:00-13:00		OS 7A	OS 7B	OS 7C	PS 3B
13:00-14:30	**Lunch & Conference Closing at Cicignon**				

Message from the General Chair

On behalf of the Organizing Committee, it is my great pleasure to welcome you to Trondheim and the 4th IEEE International Symposium on Wireless Communication Systems 2007 (ISWCS'07).

Trondheim is the third largest city in Norway. It holds a special place in Norwegian history and culture. Today, it is a modern city and the technology capacity of Norway with a highly respected university NTNU, many popular colleges and a research community that is rated among the best in Europe. One year ago, Trondheim became one of Europe's first wireless cities.

The ISWCS'07 provides a platform for leading wireless communication researchers and technologists to identify and discuss technical challenges and business opportunities in wireless communication systems. This year, the conference received an increased number of submissions and about 2/3 of the submissions were full papers. These numbers indicate that ISWCS is on the right path to greater success in the future. Another such indication is that a journal special issue on ISWCS'07 will be published by Springer Wireless Personal Communications.

From this year, ISWCS has become an IEEE-sponsored conference. Specifically, it is sponsored by the IEEE and the IEEE Vehicular Technology Society. In addition, the ISWCS'07 is technically co-sponsored by the IEEE Communications Society and the Nordic Radio Association. The ISWCS'07 has also received strong institutional support from the Norwegian University of Science and Technology (NTNU), the University of Agder, and the Simula Research Laboratory. Besides, the conference receives support from several patrons that include the City of Trondheim, the Research Council of Norway, Telenor Research and Innovation, The MathWorks and the European Research Consortium for Informatics and Mathematics. My sincere thanks go to them.

Without the contribution, support and help of many people, the conference and its potential success would not be possible. I am grateful to these people. Specifically, I would like to thank the conference General Co-Chairs Dr. Boon Sain Yeo and Dr. Victor Bahl, who encouraged and supported me to bring ISWCS'07 to Norway. I would also like to thank the Technical Program Co-Chair Dr. James Irvine who provided great help for the conference to obtain the IEEE sponsorships. I offer an additional dose of deep gratitude to the Technical Program Chair Dr. Matthias Pätzold and his technical program committee for providing the excellent technical program. Last but not least, I want to thank the rest of the Organizing Committee and people at NTNU Videre for working hard to make sure that ISWCS'07 offers the same high quality as the previous years.

Finally, I thank you for joining us at ISWCS'07 in Trondheim. I hope you take advantage of the local hospitality, meet and learn from your colleagues, and enjoy the conference and the city of Trondheim.

Yuming Jiang
General Chair, ISWCS'07
Norwegian University of Science and Technology (NTNU)

Message from the Technical Program Chair

It is a great honor and pleasure for me to write a few words of welcome on the occasion of the Fourth IEEE International Symposium on Wireless Communication Systems 2007 (ISWCS'07) in Trondheim, Norway.

The Technical Program Committee was very satisfied with the response to the Call for Papers. Altogether 369 papers have been submitted. This figure exceeds the number of submissions compared to previous ISWCS conferences and shows that this kind of event is on the right path to greater recognition and international popularity. As usual, the review process involved all members of the Technical Program Committee and many other reviewers, all of them were recognized experts in their respective fields. We have taken care that the topic of each submitted paper fell within the reviewers' area of expertise. The review process was in accordance with standard single blind peer-reviewing practices, i.e., the reviewers know who the authors of the manuscript are, but the authors do not have access to the information of who the reviewers are. As customary for ISWCS, the intention was to have at least 3 independent reviews for each paper. This requirement could be fulfilled for the majority of papers, but in some very few cases, we were satisfied with 2 reviews provided they were consistent in their conclusions. The result of the review process was that 170 papers have been accepted for publication, with 107 papers being presented orally and 63 papers as poster presentations. This means that with an acceptance rate of 46 percent, the review process was this time extremely selective and many good papers could not be included in the final program.

It was a great honor and pleasure for me to accept the invitation from the General Chair, Prof. Yuming Jiang, to serve as Technical Program Chair. People with experience in organizing conferences know that the organization of the technical part of a conference is a real challenge. To master this challenge requires an excellent team. For this conference, we were very fortunate that we had such a team.

I would like to express my gratitude to all colleagues, who have contributed to the efforts to make ISWCS'07 a successful and memorable event. My special thanks are devoted to the authors for expending their energy and time on writing high-quality papers that laid the foundations on which the conference was built. I am also very grateful to the invited and keynote speakers, tutorial lecturers, and session chairs for providing their expertise, which added a considerable amount of value to the conference that finally shaped its program. Furthermore, I would like to thank the members of the Technical Program Committee and the reviewers for helping to review the papers that enabled us to separate the wheat from the chaff. Last, but not least, my thank goes to the local organizers and the many other people involved in organizing the conference.

It is my great hope that this symposium fulfills your expectations, especially from the scientific point of view, and that it provides you with the right platform to meet friends and colleagues, as well as to find new collaborators or partners for joint ventures. In other words, I hope that you enjoy the ISWCS'07 and that you find it most rewarding.

Matthias Pätzold
Technical Program Chair, ISWCS'07
University of Agder (UiA)

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KEYNOTE SPEAKERS

Wednesday, 17th October 2007, 9:00 ~ 9:45, *Olav Tryggvasson II*

David Gesbert
Eurecom Institute, France

KS1: Adaptation, coordination and distributed resource allocation in interference-limited wireless networks

Abstract: A sensible design of wireless networks involves striking a good balance between an aggressive reuse of the spectral resource throughout the network and managing the resulting co-channel interference. Traditionally this problem has been tackled using a "dive and conquer" approach. The latter consists of deploying the network with a static or semi-dynamic pattern of resource reutilization. The chosen reuse factor, while sacrificing a substantial amount of efficiency, brings the interference to a tolerable level. The resource can then be managed in each cell so as to optimize the per cell capacity, using advanced air interface design.

In this talk we focus our attention on the overall network capacity as a measure of system performance. We consider the problem of resource allocation and adaptive transmission in multicell scenarios. As a key instance, the problem of joint scheduling and power control simultaneously in multiple transmit-receive links, which employ capacity-achieving adaptive codes, is studied. In principle, the solution of such an optimization hinges on tough issues such as the computational complexity and the requirement for heavy receiver-to-transmitter feedback and, for cellular networks, cell-to-cell channel state information (CSI) signaling. We give asymptotic properties pertaining to rate-maximizing power control and scheduling in multicell networks. We then present some promising leads for substantial complexity and signaling reduction via the use of newly developed distributed and game theoretic techniques.

Biography: Dr. David Gesbert is Professor in the Mobile Communications Dept., Eurecom Institute, France. He obtained the Ph.D degree from Ecole Nationale Superieure des Telecommunications, France, in 1997. From 1997 to 1999 he has been a research fellow at the Smart Antenna Research Group of the Information Systems Laboratory, Stanford University. In 1999, he was a founding engineer of Iospan Wireless Inc, San Jose, Ca.,a startup company pioneering MIMO-OFDM (now Intel). Between 2001 and 2003 he has been with the Department of Informatics, University of Oslo. D. Gesbert has published about 110 papers and several patents all in the area of signal processing, communications, and wireless networks, three of the papers receiving best paper awards. D. Gesbert was a co-editor of several special issues on wireless networks and communications theory, for IEEE JSAC (2003, 2007), EURASIP JASP (2004, 2007), Wireless Communications Magazine (2006). He is a member of the IEEE Signal Processing for Communications Technical Committee. He co-authored the book "Space time wireless communications: From parameter estimation to MIMO systems", Cambridge Press, 2006. He was co-organizer, with Prof. Dirk Slock, of the IEEE Workshop on Signal Processing Advances in Wireless Communications, 2006(Cannes, France).

Wednesday, 17th October 2007, 9:45 ~ 10:30, *Olav Tryggvasson II*

Hans Martin Ritt
The MathWorks

KS2: Development of complex wireless systems requires new development technologies

Abstract: Developers of signal processing and communication systems are facing a constantly increasing demand for more complex and powerful products that need to be developed in very short time frames. Some industry watchers have predicted an upcoming "productivity crisis" for the implementation of signal processing and other embedded systems in programmable logic or software, respectively. However, they often take a crisis view based on an incorrect measurement: the number of lines of code that an engineer can write in a day. This measure does not take into account the level of programming abstraction. Based on the technological evolution of the hardware combined with new ways to develop software, there have been always architectural and algorithmic improvements that create breakthrough performance advances. Each of these advances was made possible by new development tools that addressed the critical problems of the day.

Mastering the design of computationally intensive signal processing systems calls for a development environment that lets designers accurately model and simulate the behavior of an entire system, including the interaction of hardware and software subsystems as well as the environment in which the system must operate. Traditional procedural programming and hardware description languages and incremental extensions to those languages are not appropriate for modeling this level of algorithmic complexity. For decades, standard specifications, textbooks and engineers' whiteboards have used block diagrams to specify signal flow, timing and system architecture. It is not surprising, therefore, that graphical modeling tools are the natural way to specify, design and verify such signal processing systems.

Biography: Dr. Hans Martin Ritt has received his PhD in control engineering from the University of Technology Aachen focussing on the implementation of advanced control algorithms using automatic code generation tools. Holding the position of a solution manager at Ericsson he contributed to the introduction of the 3rd generation communication technology UMTS, starting the operation of one of the first networks in Germany. At The MathWorks he is holding the position of a Principal Application Engineer and a team leader covering a broad spectrum of applications based on the Model-Based design approach starting from the design of control systems in the automotive industry to signal processing systems in the communication industry. He manages a team of application engineers with more specific focus.

Thursday, 18th October 2007, 8:30 ~ 9:30, *Olav Tryggvasson II*

Andreas F. Molisch
Mitsubishi Electric Research Labs, and Lund University, Sweden

KS3: MIMO Antennas, Propagation Channels, and their Impact on System Design

Abstract: Wireless multiple-input - multiple-output (MIMO) systems, defined as systems that have multiple antenna elements at both link ends, can greatly enhance the robustness and spectral efficiency of wireless communications. While most of the literature has concentrated on signal processing and space-time coding for MIMO, the fundamental performance limits are determined by the propagation channel and the way it is "excited" and "sampled" by the transmit and receive antenna arrays, respectively. In this talk, we first give an overview of array design, in particular, the question of how close we can space antennas. Subsequently, we describe typical propagation channels and how they impact system capacity; we also consider ways to describe the interaction between antennas and channels. Throughout the talk, we will show how the antenna and channel properties impact system capacity, diversity, and other system performance parameters.

Biography: Dr. Andy Molisch is a Distinguished Member of Technical Staff at Mitsubishi Electric Research Labs, and also Professor and Chairholder for Radio Systems at the Department of Electro- and Information Technology at Lund University, Sweden. His areas of interest are wireless propagation, MIMO, UWB, and cooperative communications. He has authored four books, eleven bookchapters, some 100 journal papers, and numerous conference contributions, as well as 60 patents. He is active in standardization and has been chairman of several standardization organizations: IEEE 802.15.3a, IEEE 802.15.4a (chairman of channel modeling group), IEEE 802.11n, Multiband-OFDM alliance (chairman of scalability group), COST273 (chairman of the channel modeling group), and chairman of Commission C of URSI (International Union of Radio Science). Dr. Molisch is a Fellow of the IEEE, an IEEE Distinguished Lecturer, and recipient of several awards.

Thursday, 18th October 2007, 9:30 ~ 10:30, ***Olav Tryggvasson II***

Mario Gerla
University of California, Los Angeles, USA

KS4: Peer to Peer Urban Sensing from Mobile Platforms

Abstract: There has been growing interest in urban surveillance using vehicles that monitor the environment, classify the events, e.g., license plate reading, and exchange metadata with neighbors in a peer-to-peer fashion. The idea is to create a totally distributed index of all the events, to be accessed by users. For instance, the Department of Transportation extracts traffic congestion statistics; the Department of Health monitors pollutants, and; the Police carries out forensic investigations. Mobile, vehicular sensing differs significantly from fixed (wireless) sensing. The vehicles have no strict limits on battery life, processing power and storage capabilities. Moreover they can generate an enormous volume of data, making current sensor harvesting solutions inadequate. The talk describes MobEyes, a middleware solution that diffuses data summaries to create a distributed index of the massive sensed data base. We discuss the challenges of designing and maintain such a system, from information dissemination to harvesting, routing and security.

Biography: Dr. Mario Gerla received a graduate degree in engineering from the Politecnico di Milano in 1966, and the M.S. and Ph.D. degrees in engineering from UCLA in 1970 and 1973. He became IEEE Fellow in 2002. After working for Network Analysis Corporation, New York, from 1973 to 1976, he joined the Faculty of the Computer Science Department at UCLA where he is now Professor. His research interests cover distributed computer communication systems and wireless networks. He has designed and implemented various network protocols (channel access, clustering, routing and transport) under DARPA and NSF grants. Currently he is leading the ONR MINUTEMAN project at UCLA, with focus on robust, scalable network architectures for unmanned intelligent agents in defense and homeland security scenarios. He also conducts research on scalable TCP transport for the Next Generation Internet.

PANEL: Wireless Future

Thursday, 18th October 2007, 16:30 ~ 17:50, *Olav Tryggvasson II*
Panel Chair: Boon Sain Yeo, SensiMesh Pte Ltd, Singapore

Panel Members

Boon Sain Yeo
R&D Director, SensiMesh Pte Ltd, Singapore

Boon Sain Yeo received the B.Eng and Ph.D. degrees in Electrical and Electronics Engineering from University of Glasgow and Imperial College of Science, Technology and Medicine, respectively. . He has been with the Institute for Infocomm Research (I^2R, formerly also known as Centre for Wireless Communications, NUS and Institute for Communications Research), an institute under Agency for Science, Technology and Research, since 1998. From 2004 – 2005, he was appointed as the laboratory head of Wireless Sensor Networks Laboratory in the Networking Department. Since 2005, he has been seconded to lead the technology division of Wavex Technologies, focusing on wireless development and RFID, and to setup Wavex Innovations, the R&D arm of Wavex Technologies, under a government initiative to help technologically upgrade the small medium enterprise in Singapore. He was the the R&D director for Wavex Innovations and is currently, on a second secondment, the R&D director for SensiMesh, a start-up company dedicated to R&D for RFID, WSN and mesh technologies. He is also an adjunct Assistant Professor in NUS. His research interests are in technologies relating to wireless systems and network, and operational approaches to optimize telecommunication systems. He has been actively participating in numerous conferences, including, TPC co-chair for IEEE GLOBECOM 2004 Wireless symposium, TPC chair for IEEE GLOBECOM 2005 General symposium, TPC co-chair for IEEE GLOBECOM 2006 Wireless Symposium, General co-chair and Steering Committee Chair for ISWCS 2004, 2005, 2006 and 2007, General co-chair and Steering Committee Co-chair for ISWPC 2006 and 2007, General co-chair for VTC Spring 2008, TPC chair for WOCN 2005, Workshop chair for SensorWare 2006 and Organizing chair for IEEE MWCN 2003. He is also currently serving as an editorial board member for several reputable journals.

Stein Hansen
Vice President, Group Technology Telenor, Norway

Stein Hansen currently holds the position as Vice President in the Telenor Group, Head of Group Technology. Stein started his career in Telenor R&D, and had central international positions from the early beginning in the development of GSM as well as UMTS. Stein has had a number of operational Top Management positions working for mobile operators, including Technical Director of NetCom (Norway), Managing Director of Telenor Mobilnett (Norway), Mobile Planning & Implementation Director of VIAG Interkom[1] (Germany) as well as Chief Operating Officer of DiGi (Malaysia). He is currently at Telenor HQ as Vice President, Group Technology. He has had several Board of Director positions within the Telenor group through his career. Stein Hansen holds an M.Sc. degree in telecommunications from the Norwegian Institute of Technology, University of Trondheim. Stein is one of the pioneers in the field of GSM and UMTS, and has been in the mobile communications field since 1984. He was Telenor's representative in the GSM Permanent Nucleus (France) from 1986-1988[2]. He was later also the first Chairman of the ETSI committee responsible for developing UMTS in the early years from 1991-1993. Stein is currently a Board Member of the GSM Association (GSMA) and Chairman of its Executive

[1] Today O2 Germany
[2] Coordinating the European standardization work on GSM

Management Committee (EMC) since Jan 2006[3]. Stein is also a Board member of the Open Mobile Terminal Platform (OMTP) group since 2005.

Richard Savage
Director Business Development, Qualcomm Europe

Richard Savage is Director Business Development at Qualcomm Europe, where he is responsible for Scandinavia, Baltic States and Holland. Prior to joining Qualcomm, Richard has held similar positions for the last nine years at Ericsson Telecom AB, and Appload AB. Richard has lived in Sweden since 1996, prior to moving to Sweden he lived and worked in France with several companies including Microsoft, MicroWarehouse and Azlan.

Victor Bahl
Principal Researcher, Networking Research Group, Microsoft Research

Victor Bahl is a Principal Researcher and founding manager of the Networking Research Group in in Microsoft Research. He is responsible for directing research activities that push the state-of-art in the networking of devices and systems. He and his group build proof-of-concept systems, engage with academia, publish papers in prestigious conference, publish software for the research community, and work with product groups to influence Microsoft's products. His personal research interests are in wireless systems and mobile networking. In addition to building several seminal systems, he has authored over 75 papers and 70 patent applications (45 have issued). Dr. Bahl is the founder and past-Chair of ACM SIGMOBILE ; the founder and past Editor-in-Chief of ACM Mobile Computing and Communications Review, and the founder and steering committee chair of ACM/USENIX Mobile Systems Conference (MobiSys) Conference; he serves and has served on the Steering Committee of IEEE DySPAN, IEEE COMSWARE, IEEE ISWCS, IEEE ISWC, ACM SenSys, ACM MobiCom, and on the Technical Program Committee of over 60 international conferences and workshops. He has served on the board of six IEEE and ACM journals and on several National Science Foundation and National Research Council panels. He has served as the General Chairman of ACM SIGCOMM 2008, IEEE ISWCS 2007, IEEE COMSWARE 2006, and ACM MobiCom 1999; as Program Chair of IEEE Symposium on Wearable Computers, IEEE Wireless Mobile Multimedia and ACM Vehicular Ad Hoc Networks. In 2006, he was nominated by Microsoft for Intellectual Property Owners Association's National Inventor of the Year Award. He received Digital's prestigious Doctoral Engineering Award (1995-97) and ACM SIGMOBILE's Distinguished Service Award (2001). In 2003, he became an ACM Fellow for "Contributions to wireless communication systems, and leadership in the mobile computing and communications community". He is an IEEE Communication Society's 2007-09 Distinguished Lecturer; an ACM Distinguished Speaker (2007-08),and has served as the president of the electrical engineering honor society Eta Kappa Nu-Zeta Pi. Prior to joining Microsoft, he was with Digital (1998-97) where he shipped several seminal multimedia products. He received his PhD from the University of Massachusetts, Amherst in 1997.

[3] Re-elected for 2007-2008

Ralf R. Müller
NorwegianUniversity of Science and Technology, Norway

Ralf R. Müller received the Dipl.-Ing. and Dr.-Ing. degree with distinction from University of Erlangen-Nuremberg in 1996 and 1999, respectively. From 2000 to 2004, he directed a research group at Forschungszentrum Telekommunikation Wien (ViennaTelecommunicationsResearchCenter) in Vienna, Austria and taught as an adjunct professor at Vienna University of Technology. Since 2005 he has been a full professor at the Department of Electronics and Telecommunications at the NorwegianUniversity of Science and Technology (NTNU) in Trondheim, Norway. He held visiting appointments at Princeton University, U.S.A., Institute Esurecom, France, the University of Melbourne, Australia, The University of Oulu, Finland, The National University of Singapore, and Babes-BolyaiUniversity, Cluj-Napoca, Romania. Dr. Müller received the Leonard G. Abraham Prize (jointly with Sergio Verdú) for the paper "Design and Analysis of Low-Complexity Interference Mitigation on Vector Channels" from the IEEE Communications Society. He was presented awards for his dissertation "Power and Bandwidth Efficiency of Multiuser Systems with Random Spreading" by the Vodafone Foundation for Mobile Communications and the German Information Technology Society (ITG). Moreover, he received the ITG award for the paper "A Random Matrix Model for Communication Via Antenna Arrays" as well as the Philipp-Reis Award (jointly with Robert Fischer). Dr. Müller has published some 100 papers on multiuser communications in international journals and conferences and served as an associate editor for the IEEE Transactions on Information Theory from 2003 to 2006.

Jarle Boe
Texas Instrument (Oslo), Norway

Jarle Boe has more than 10 years experience from the wired and wireless semiconductor industry. He is currently working for Texas Instruments(TI) Low Power RF group. Prior to joining TI he was working for wireless networking pioneer Chipcon that was acquired by TI in January 2006. Jarle's work includes ZigBee networks and locationing in wireless networks, tools and semiconductor development, marketing positions and support management.

TUTORIALS

T1: Multipath Characterization of Antennas and Mobile Terminals for Diversity and MIMO Systems

Tuesday, 16th October 2007, 09:00 ~ 12:30, *Tavern*

The reverberation chamber has for many years found application in the EMC area. Recently, we have shown that it with great advantage can be used also for antenna measurements as it emulates effectively an isotropic multi-path propagation environment. The lecture will give the basic theory of reverberation chambers, and show how the chamber can used to measure radiation efficiency, free space radiation impedance, and diversity gain of antennas; total radiated power and receiver sensitivity of mobile phones and other wireless or mobile terminals (GSM, CDMA, DECT, Bluetooth, UMTS); and channel capacity of MIMO antenna systems. The chamber is the only known measurement instrument for realistically measuring diversity gain and channel capacity; the alternative being to drive measurement instruments around in an actual urban environment. A major advantage with this new measurement method is that the measurements fast and easily can be performed when the antenna or phone is located in different talk positions relative to a head phantom or other environments.

The reverberation chamber with antenna measurement procedures have been commercialized by the company BluetestAB (www.bluetest.se).

Presenter: Per-Simon Kildal
Chalmers University of Technology, Gothenburg, Sweden

Per-Simon Kildal received the Ph.D. and Doctor Technicae degrees from the Norwegian Institute of Technology (NTH) in 1982 and 1990. From 1979 to 1989, he was SINTEF research institute in Norway. Since 1989, he has been a Professor at Chalmers University of Technology, Gothenburg, Sweden. Kildal is Fellow of IEEE since 1995, and he has done several services to the IEEE Antennas and Propagation Society. He has authored more than 200 papers in IEEE or IEE journals and conferences, concerning antenna theory, analysis, design and measurement. His textbook *Foundations of Antennas - A Unified Approach* (Lund, Sweden: Studentlitteratur, 2000) has been well received. Kildal has done the electrical design and analysis of two very large antennas: The 120-m long and 40-m wide cylindrical parabolic reflector antenna of the EISCAT Scientific Association, and the Gregorian dual-reflector feed of the 300-m diameter radio telescope in Arecibo. Kildal is the originator of the concept of soft and hard surfaces through which he and his coworkers preceded much of the recent research on electromagnetic bandgap surfaces and metamaterials. The last seven years Kildal and his group at Chalmers have pioneered the development of the reverberation chamber into an accurate measurement tool for characterizing antennas and wireless terminals subject to Rayleigh fading. Kildal has founded two companies: COMHATAB (www.comhat.com) and BluetestAB (www.bluetest.se).

Presenter: Jan Carlsson
SP Swedish National Testing and Research Institute, Borås, Sweden

Jan Carlsson (M'98) was born in Sweden, on May 6, 1962. He received the M.S.E.E. and Ph.D. degrees from Chalmers University of Technology, Göteborg, Sweden, in 1986 and 1998, respectively. From 1986 to 1990, he was an EMC-Engineer with Ericsson Radar Electronics AB, Mölndal, Sweden. Currently he is the Head of Research at the EMC Department, SP Swedish National Testing and Research

Institute, Borås, Sweden. He is also an Adjunct Professor of Computational Electromagnetics in the Department of Signals and Systems, Chalmers University of Technology. His research is in the area of computation techniques for electromagnetic problems as well as new measurement techniques involving reverberation chamber, especially for applications in EMC and antennas. He is one of the authors of the EMMA Handbook (EMC handbook issued by the Swedish Defence Material Administration). Jan Carlsson has many years experience as a lecturer of different short courses, including both EMC and new measurement techniques for antennas. From 2002-2004 he was the Chairman of the Swedish EMC Chapter. He is currently a Member of the Swedish National Committee for Radio Science (SNRV), Section E, and Applied Computational Electromagnetics Society (ACES).

T2: Ultra-Wideband Technology and Its Standardization for Wireless Personal Area Networks

Tuesday, 16th October 2007, 14:00 ~ 17:30, *Tavern*

A radio communication system is classified into the ultra-wideband (UWB) category when it occupies a frequency bandwidth of more than 20% of its central frequency or larger than 500MHz. Since its commercial use was approved by FCC in 2002, UWB has gathered tremendous interests in both academic researches and industrial developments. A number of standardization bodies including IEEE802, ECMA, and ISO have worked on UWB based standards. Besides FCC, regulatory authorities in Japan, EU, and other countries or areas issued their own UWB regulations. These activities have been accelerating the commercialization for UWB. Among a number of distinguished characteristics, UWB is essentially able to provide high data-rate communications and high precision ranging because of its nature of ultra wide-band occupancy in frequency domain and extremely narrow pulse in time domain. This tutorial gives an overview on UWB related issues including technology, standardization, and regulation. More attentions are put on its applications in wireless personal area networks (WPAN) including both communications and ranging issues. Standardization activities on high-rate UWB and low-rate UWB are reviewed. Emphasis will be put on IEEE 802.15.4a, which is a UWB standard approved in March 2007 as an alternative PHY for low-rate WPAN. Main features and parameters of IEEE 802.15.4a will be described in detail. Recently, body area network (BAN) was proposed as a new standard candidate and is studied within IEEE 802.15.MBAN. In which, UWB is also considered as a competitive technology. A brief guidance on IEEE 802.15.MBAN will be given in this tutorial.

Presenter: Huan-Bang Li
National Institute of Information and communications Technology, Japan

Huan-Bang Li received the B.S. degree from Northern Jiao Tong University, Beijing, China in 1986. He received the M.S. and the Dr. of Eng. degrees from Nagoya Institute of Technology, Nagoya, Japan in 1991 and 1994 respectively. He joined the Communications Research Laboratory (CRL), Japan in 1994 (now, National Institute of Information and communications Technology: NICT). He is now a senior researcher of NICT. His research interests include mobile satellite communications, coding, modulation, UWB, medical ICT, etc.. From 1999 to 2000, he was a Visiting Scholar at Stanford University, CA, USA. He currently serves as the vice chairman of IEEE 802.15.MBAN. He received the Young Engineer Award and the Excellent Paper Award of IEICE Japan in 1996 and 1998, respectively, and the Distinguished Patent Award from the Ministry of Science and Technology Agency of Japan in 2000.

T3: From Cognitive Radios to Cognitive Wireless Networks

Tuesday, 16th October 2007, 09:00 ~ 12:30, *Austråt*

This tutorial starts by giving a quick historical background on the cognitive radios. We describe what is meant by spectrum agile radios and by full cognitive radios ("Mitola Radios"). The main emphasis on the tutorial is to show what are the implications and the current research results on building cognitive wireless networks. The current work has been mostly cognitive radio and game theory specific. In this tutorial we outline how cognitive techniques can be used to build out full cross-layer and network wide optimization methods. The tutorial illustrates how concepts from multi-objective optimization and machine learning can be used to shape the design of cognitive and self-configuring networks. The tutorial is emphasizing the architectural concepts and emerging new methodologies. The tutorial also provides attendees with knowledge of the most important concepts and open research questions in this emerging field. As such it is also suited for beginning graduate students.

Presenter: Petri Mähönen
Ericsson/RWTH Aachen University, Germany

Petri Mähönen is currently a full professor and holds Ericsson Chair of Wireless Networks at the RWTH Aachen University in Germany. Before joining to RWTH Aachen in 2002, he was a research director and professor at the Centre for Wireless Communications and the University of Oulu. He has studied and worked in the United States, United Kingdom and Finland. He has been a principla investigator in several international research projects, including initiating and leading several large European Union research projects. Dr. Mähönen has published more than 150 papers in international journals and conferences and has been invited to deliver research talks at many universities, companies and conferences. He is a senior member of IEEE and ACM, and fellow of RAS. He is inventor or co-inventor for over 20 patents or patent applications. In 2006, he was awarded Telenor research prize. He has been particularly active in cognitive wireless network research. He has been serving in different roles in relevant cognitive communications domain conferences, such as DySPAN, CogNet and CrownCom. He has been also guest-editor for several special issues in the field. He is currently also a research area coordinator and one of the principal investigators for a newly formed Ultra High Speed Mobile Information and Communication (UMIC) research cluster at RWTH, which is one of the German national excellence clusters established in 2006. One of the research domains in UMIC cluster is also cognitive radio network technologies. His present research interest include cognitive wireless networks, embedded intelligence, mathematical physics inspired analysis methods, performance evaluation of comple networks and future (wireless) network access technologies.

Presenter: Marina Petrova
RWTH Aachen University, Germany

Marina Petrova works as a chief research scientist at the Department of Wireless Networks at the RWTH Aachen University. She graduated in Electronics and Telecommunications engineering from the University of St. Cyril and Methodius, Skopje, Macedonia. Her research interest are focused on cognitive wireless networks, cognitive radios and adaptive wireless systems technologies. The topic of her Ph.D. thesis work at the RWTH Aachen has been also the multi-parameter optimization methods for cognitive radio networks. As part of her research work she has participated in the several international cooperative projects and industry projects in the field of wireless communications and cognitive radios. In Aachen she has also lead the research work that has been done towards the prototype implementation of gnuRadio based cognitive resource manager for cognitive radios. He has also served in technical program and organizing committees of conferences, among those IEEE DySPAN, IEEE Crowncom, the leading conferences in the field of cognitive radios and networks.

T4: Multiuser Communications

Tuesday, 16th October 2007, 14:00 ~ 17:30, *Austråt*

Multiuser communication is developed using single-user communication methods as building blocks. The tutorial addresses the multiple-access channel, the broadcast channel, as well as more complicated multiuser setups. The availability of various amounts of channel state information at different sides of the multiuser channel is decisive and its various implications are explained. The often fuzzily defined notion of "multiuser diversity" is classified into different effects corresponding to different fading conditions. The overall aim is to give a systematic view of multiuser communications.

Presenter: **Ralf R. Müller**
NorwegianUniversity of Science and Technology, Norway

Ralf R. Müller received the Dipl.-Ing. and Dr.-Ing. degree with distinction from University of Erlangen-Nuremberg in 1996 and 1999, respectively. From 2000 to 2004, he directed a research group at Forschungszentrum Telekommunikation Wien (ViennaTelecommunicationsResearchCenter) in Vienna, Austria and taught as an adjunct professor at Vienna University of Technology. Since 2005 he has been a full professor at the Department of Electronics and Telecommunications at the NorwegianUniversity of Science and Technology (NTNU) in Trondheim, Norway. He held visiting appointments at Princeton University, U.S.A., Institute Esurecom, France, the University of Melbourne, Australia, The University of Oulu, Finland, The National University of Singapore, and Babes-BolyaiUniversity, Cluj-Napoca, Romania. Dr. Müller received the Leonard G. Abraham Prize (jointly with Sergio Verdú) for the paper "Design and Analysis of Low-Complexity Interference Mitigation on Vector Channels" from the IEEE Communications Society. He was presented awards for his dissertation "Power and Bandwidth Efficiency of Multiuser Systems with Random Spreading" by the Vodafone Foundation for Mobile Communications and the German Information Technology Society (ITG). Moreover, he received the ITG award for the paper "A Random Matrix Model for Communication Via Antenna Arrays" as well as the Philipp-Reis Award (jointly with Robert Fischer). Dr. Müller has published some 100 papers on multiuser communications in international journals and conferences and served as an associate editor for the IEEE Transactions on Information Theory from 2003 to 2006.

T5: Introduction to ITS (Intelligent Transportation Systems) Communication Solutions

Tuesday, 16th October 2007, 09:00 ~ 12:30, *Sverresborg*

Cooperative vehicle-infrastructure systems will allow vehicles to cooperate directly with other nearby vehicles, and with the immediate roadside infrastructure, thus sharing information on the latest traffic information for greater safety, efficiency and a better environment. Each equipped vehicle will be able to connect and communicate via local ad hoc networks of vehicles and roadside equipment in the vicinity, and also via an always-on network connection to access a wide range of journey support and other services. The pre-requisite is a harmonised technology for vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication and networking. CVIS will develop a multi-channel terminal capable of connecting with a wide range of potential carriers, including cellular networks (GPRS, UMTS), mobile wireless local area networks (WLAN, or Wi-Fi), short range microwave beacons (DSRC) or infra-red (IR). This will be based on the new international "CALM" (ISO) standards, ensuring full interoperability between different makes of car and of traffic management systems.

The tutorial will give an introduction to the CALM (Continuous Access Long and Medium range (see http://www.calm.hu/ for further reference) standard and its implementation in the CVIS project (Co-operative Vehicle-Infrastructure Systems, - a 6. FW EU Integrated Project, involving more than 50 partners (http://www.cvisproject.org/) and summarizes current status, both in the development of the standard and in the project. The main focus in the tutorial will be the communication aspects (not so much attention will be paid to the CVIS applications.)

Presenter: Runar SØRÅSEN
Q-Free, Noway

Runar SØRÅSEN is a Sivilingeniør/M.Sc in Electronic Engineering from Norwegian University of Science and Technology (NTNU). Currently he is Technical Project Manager at Q-Free's R&D department, participating in the European research project CVIS, and in several related national research projects. Runar has 10 year experience from the semiconductor industry, both as design engineer and project manager. He was Senior Design Engineer in Atmel Corp. from 2001 to 2006, developing analog periferi for microcontrollers.

Presenter: Per Jarle Furnes
Q-Free, Norway

Per Jarle Furnes, born 1968, got a master degree in Microelectronics, NTH - Trondheim in 1991 and has been in Q-Free since 1992. Mr. Furnes has been involved in international standardisation since 1994 and is still active member of working groups within CEN and ISO. Mr. Furnes has hold various positions within the organisation ranging from project management, leading the technology development department responsible for all research and product development programmes inside Q-Free, and currently business development, responsible for new strategies within Q-Free group.

T6: RFID Systems

Tuesday, 16th October 2007, 14:00 ~ 17:30, *Sverresborg*

Radio Frequency Identification (RFID) has been around for decades and has been generally regarded as a matured technology ready for market adoption and deployment. However, the adoption of RFID has not received the whelming response as the market and players have eagerly anticipated. What went wrong with this technology, despite its advantages over competing technologies? Indeed, RFID is a technology constrained by many differing environmental factors, of which need to be considered, before a successful system can be commissioned. The objective of the tutorial will unravel the technical, marketing and practical aspects underpinning RFID systems. The tutorial will also attempt to provide analysis of the differing technical specifications and applications governing RFID and Wireless Sensor Networks (WSN).

The objective of the tutorial will unravel and discuss the technology, marketing and practical aspects underpinning RFID systems. The tutorial will start off by providing extensive coverage on the different facets of RFID, with strong focus on the standards underlying LF, HF, UHF and active tag. It will then be followed with an in-depth focus and emphasis on HF system. It will also highlight the co-existance of different RFID technologies (LF, HF, UHF and active tags), in today's markets. It will provide a detailed understanding of the technical information unpinning the RFID systems, with special emphasis on HF given that this is the more provened and matured technology. The successful deployment of National Library Board of Singapore, a benchmark in world RFID library deployment, will be discussed and will be used as a case study to illustrate the economics and technical aspects of the potential of RFID systems. The tutorial will also attempt to provide some practical demonstrations on the design of HF circuitries and tuning of antenna, under different environmental influences. The tutorial will also provide differentiating factors between Wireless Sensor Networks (WSN) and RFID, both passive and active. It is worth noting that RFID has always been pushed for by the industry and WSN by the academia. However, there has been in increasing interest in WSN by the industry and RFID by the academia. The tutorial will conclude with the ongoing trend and to provide a visionary convergence approach between RFID and wireless sensor networks and ways and applications for its inter-working.

Presenter: **Boon Sain Yeo**
SensiMesh Pte Ltd, Singapore

Boon Sain Yeo received the B.Eng and Ph.D. degrees in Electrical and Electronics Engineering from University of Glasgow and Imperial College of Science, Technology and Medicine, respectively. . He has been with the Institute for Infocomm Research (I^2R, formerly also known as Centre for Wireless Communications, NUS and Institute for Communications Research), an institute under Agency for Science, Technology and Research, since 1998. From 2004 – 2005, he was appointed as the laboratory head of Wireless Sensor Networks Laboratory in the Networking Department. Since 2005, he has been seconded to lead the technology division of Wavex Technologies, focusing on wireless development and RFID, and to setup Wavex Innovations, the R&D arm of Wavex Technologies, under a government initiative to help technologically upgrade the small medium enterprise in Singapore. He was the the R&D director for Wavex Innovations and is currently, on a second secondment, the R&D director for SensiMesh, a start-up company dedicated to R&D for RFID, WSN and mesh technologies. He is also an adjunct Assistant Professor in NUS. His research interests are in technologies relating to wireless systems and network, and operational approaches to optimize telecommunication systems. He has been actively participating in numerous conferences, including, TPC co-chair for IEEE GLOBECOM 2004 Wireless symposium, TPC chair for IEEE GLOBECOM 2005 General symposium, TPC co-chair for IEEE GLOBECOM 2006 Wireless Symposium, General co-chair and Steering Committee Chair for ISWCS 2004, 2005, 2006 and 2007, General co-chair and Steering Committee Co-chair for ISWPC 2006 and 2007, General co-chair for VTC Spring 2008, TPC chair for WOCN 2005, Workshop chair for SensorWare 2006 and Organizing chair for IEEE MWCN 2003. He is also currently serving as a editorial board member for several reputable journals.

ORAL PRESENTATION SESSIONS

ORAL SESSION 1

Oral Session 1A – Coding/Decoding

Wednesday, 17th October 2007, 11:00 ~ 12:40, Olav Tryggvasson II
Session Chair: Antonio Rodrigues, IT/IST, Technical University of Lisbon, Portugal

18942 Progressive Hypercube Decoding
Francisco Monteiro, Ian Wassell, University of Cambridge

93314 Optimum Reed-Solomon Erasure Coding in Fault Tolerant Sensor Networks
Ali Fakoorian, Hassan Taheri, University of Amirkabir

38074 EXIT Charts for PUM Woven Turbo Codes
Chris Nelson, Lina Fagoonee, Lancaster University

24291 Layered LDGM Codes: A Capacity-Approaching Structure for Arbitrary Rates
Miguel González-López, F. J. Vázquez-Araújo, Luis Castedo, Universidad de A Coruña; Javier Garcia-Frias, University of Delaware

38702 Concatenated Trellis and Coordinate Interleaved Differential Space-Time Block Codes for OFDM
Kenan Aksoy, Ümit Aygölü, Istanbul Technical University

Oral Session 1B – Wireless Sensor Networks

Wednesday, 17th October 2007, 11:00 ~ 12:40, Haraldsalen
Session Chair: Alberto Zanella, Istituto di Elettronica e di Ingegneria dell'Informazione e delle Telecomunicazioni (I.E.I.I.T.), Italy

33697 Energy Consumption Optimization in Data Transmission from Correlated Sensor Nodes
Liuguo Yin, Changmian Wang, Geir E. Øien, Norwegian University of Science and Technology

60171 An Efficient Key Predistribution Scheme in Wireless Sensor Networks
Dai Hangyang, Xu Hongbing, University of Electronic Science and Technology of China

49612 A Cluster-Based Approach to Fault Detection and Fault Recovery in Wireless Sensor Networks
Gayathri Venkataraman, Sabu Emmanuel, Srikanthan Thambipillai, Nanyang Technological University

79275 MEPA: A New Protocol for Energy-Efficient, Distributed Clustering in Wireless Sensor Networks
Hung Ngo, Sungyoung Lee, Young-Koo Lee, Kyung Hee University

74021 Bluetooth Sensor Network Positioning System with Dynamic Calibration
T. Fernández-Caramés, Javier Rodas, Carlos J. Escudero, Daniel I. Iglesia, Universidad de A Coruña

Oral Session 1C – MIMO

Wednesday, 17th October 2007, 11:00 ~ 12:40, Sverresborg
Session Chair: Ralf Müller, Norwegian University of Science and Technology (NTNU), Norway

65311 Spatial Capacity Estimation for Correlated MIMO Channels Based on Measured SISO Data Records
Andreas Knopp, Christian A. Hofmann, Robert T. Schwarz, Mohamed Chouayakh, Berthold Lankl, Munich University of the Bundeswehr

23995 Measurements on the Impact of Sparse Multipath Components on the LOS MIMO Channel Capacity
Andreas Knopp, Robert T. Schwarz, Christian A. Hofmann, Mohamed Chouayakh, Berthold Lankl, Munich University of the Bundeswehr

57944 Link Adaptation with Distributed Jacobi Eigenbeamforming for MIMO Systems
Eduardo Zacarías, Stefan Werner, Risto Wichman, Helsinki University of Technology

23337 Average Error Probability of MIMO Diversity Systems in the Presence of Multiple Interferers
Daniel Figueiredo, Zihuai Lin, Troels B. Sørensen, Aalborg University

35157 Audio-Visual Wireless Streaming Platform for the Residential Environment Employing Mesh and MIMO Extensions
Ioannis Sarris, Mitsubishi ITE VIL; Inn Inn Er, Kong Peng Yong, Institute for Infocomm Research; Charline Guguen, Thomson

ORAL SESSION 2

Oral Session 2A - OFDM

Wednesday,17th October 2007, 14:00 ~ 15:40, Olav Tryggvasson II
Session Chair: Geir Øien, Norwegian University of Science and Technology (NTNU), Norway

82159 Error Propagation Mitigation for Iterative Channel Tracking, Detection and Decoding of BICM-OFDM Systems
Ido Nevat, Jinhong Yuan, University of New South Wales

91960 Queueing Analysis of OFDM Subcarrier Allocation in Wireless Multimedia Networks
Yan Zhang, Simula Research Laboratory; Yifan Chen, Nanyang Technological University

95650 Fast and Accurate OFDM Time and Frequency Synchronisation
Adrian Langowski, Poznan University of Technology

64437 Optimization of the Pulse Shape of OFDM Systems Using the Arrow-Hurwicz Algorithm
Raouia Ayadi,; Mohamed Siala, SUP'COM; Inès Kammoun, LETI Department - ENIS

38539 Coordinated Sub-Carrier and Band Hopping in OFDMA Based Systems
Muhammad Imadur Rahman, Aalborg University; Ragnar Reynisson, Motorola Denmark; Daniel Figueiredo, Ramjee Prasad, Aalborg University

Session 2B – Quality of Service

Wednesday, 17th October 2007, 14:00 ~ 15:40, Haraldsalen
Session Chair: Hans-Jürgen Zepernick, Blekinge Institute of Technology, Sweden

23073 Evaluation of Perceived QoS with Multimedia Applications in a Heterogeneous Wireless Network
Nemanja Vucevic, Francisco Bernardo, Anna Umbert, Lukasz Budzisz, Universitat Politècnica de Catalunya

73795 An Implementation of the User-Centric QoS Management Approach in Wireless Home Networks
Aleksej Spenst, Thorsten Herfet, Jochen Miroll, Saarland University

63424 User QoS-Based Multi-Channel Assignment Schemes under Multimedia Traffic Conditions
Javier Gozálvez, Maria del Carmen Lucas-Estañ, Joaquín Sánchez Soriano, University Miguel Hernández

46391 QoS Provisioning in IEEE 802.11e WLANs Through Reactive Monitoring
Filippo Cacace, Giulio Iannello, Luca Vollero, Massimo Vellucci, Università Campus Bio-Medico di Roma

77051 Optimization of QoS-Aware Packet Schedulers in Multi Service Scenarios over HSDPA
Daniela Laselva, Nokia Siemens Networks; Jens Steiner, Wirtek; Fahad Khokhar, University of Aalborg ; Troels E. Kolding, Jeroen Wigard, Nokia Siemens Networks

Oral Session 2C - Location-Based Services & Positioning
Wednesday, 17th October 2007, 14:00 ~ 15:40, Sverresborg
Session Chair: Christoph Mecklenbräuker, Technical University Wien, Austria

65054 On CBM-ICC Service Provision in UCWW
Ivan Ganchev, Mairtin O'Droma, Ning Wang, University of Limerick

98808 A Bayesian Approach for RF-Based Indoor Localisation
Widyawan, Martin Klepal, Dirk Pesch, Cork Institute of Technology

51624 Road-Constrained Target Tracking in GSM Networks
Miao Zhang, Stefan Knedlik, Otmar Loffeld, University of Siegen

18800 An Optimal Strategy for Power Sensitive Localization in Ad Hoc Networks
Paula Tarrío, Ana M. Bernardos, José R. Casar, Universidad Politécnica de Madrid

18887 The Potential for Location-Based Services with Wi-Fi RFID Tags in Citywide Wireless Networks
Henrik Ljøgodt Moen, NTNU; Thomas Jelle, Trådløse Trondheim AS

ORAL SESSION 3

Oral Session 3A – Modulation & Equalization
Wednesday, 17th October 2007, 16:00 ~ 17:40, Olav Tryggvasson II
Session Chair: Christoph Mecklenbräuker, Technical University Wien, Austria

25003 Turbo Equalization with Irregular Turbo Codes
Vladimir Trajkovic, Minyue Fu, Peter Schreier, University of Newcastle

88709 Low-Complexity Soft-Output Reduced-State Equalization for EDGE
Ayman Abdel-Samad, MIMOS Berhad

34176 Rate 2/3 Trellis-Coded 8-ary Elliptical Phase Shift Keying Modulation
Yantao Qiao, Chunyi Song, Shigeru Shimamoto, Waseda University

28649 Pre-Equalization of Continuous Phase Modulation for Multipath Fading Channels
Baris Ozgul, Mutlu Koca, Hakan Delic, Bogazici University; Gordon Stüber, Georgia Institute of Technology

57955 Modulation Classification in Multipath Fading Environments
Lin Yang, Xuchu Dai, University of Science and Technology of China

Oral Session 3B –WiMAX & Ad Hoc Networks
Wednesday, 17th October 2007, 16:00 ~ 17:40, Haraldsalen
Session Chair: Chin-Tser Huang, University of South Carolina, USA

91205 Interference Mitigation Strategies for WiMAX Networks
Nicola Riato, Nokia Siemens Networks SpA; Federico Serrelli, Politecnico di Milano; Andrea Sala, Nokia Siemens Networks SpA; Antonio Capone, Politecnico di Milano

44033 Performance Evaluation of IEEE 802.16 WiMAX Link With Respect to Higher Layer Protocols
Faqir Zarrar Yousaf, Kai Daniel, Christian Wietfeld, University of Dortmund

35786 Circuit Elimination Based Link State Routing in Mobile Ad Hoc Networks
Yaoda Liu, Hans-Peter Schwefel, CTIF, Aalborg University; Frank Li, UniK, Norway; Anders Nickelsen, CTIF

22671 Delay-Transmission Probability Tradeoffs in IEEE 802.11 Based Ad Hoc Networks
Wenjing Wang, Mainak Chatterjee, University of Central Florida; Kevin Kwiat, AFRL

82826 Assessment of Coexistence Performance for WiMAX Broadband in High Altitude Platform Cellular System and Multiple-Operator Terrestrial Deployments
Zhe Yang, Abbas Mohammed, Tommy Hult, Blekinge Institute of Technology; David Grace, University of York

Session 3C – Mobile Channels & Capacity
Wednesday, 17th October 2007, 16:00 ~ 17:40, Sverresborg
Session Chair: Serguei Primak, University of Western Ontario, Canada

41177 A Comparison of Spherical Versus Plane-Wave Multiple-Plateau Diffraction Solution for Predicting Path Loss in Urban Environments
José-Víctor Rodríguez, José-María Molina García-Pardo, Leandro Juan-Llacer, Universidad Politécnica de Cartagena

32166 Approximate Solutions to the Distribution of the Fading Intervals of Lognormal Processes
Néji Youssef, SUP'COM; Matthias Pätzold, Kun Yang, University of Agder

28827 The Impact of Shadowing on the Capacity of Mobile Fading Channels
Gulzaib Rafiq, Matthias Pätzold, Agder University College

29226 Channel Capacity for Single Branch Receivers Operating in Generalized Fading Scenarios
Daniel Benevides da Costa, Michel Daoud Yacoub, State University of Campinas

20724 Complexity Comparison of MIMO Channel Modelling Methods
Pekka Kyösti, Elektrobit; Tommi Jämsä, Elektrobit Testing Ltd

ORAL SESSION 4

Oral Session 4A – Channels & Measurements & Estimation
Thursday 18th October 2007 11:00 ~ 12:40, Olav Tryggvasson II
Session Chair: Andreas Molisch, Mitsubishi Electric Research Laboratories, USA/ Lund University, Sweden

90172 Car-to-Car Radio Channel Measurements at 5 GHz: Pathloss, Power-Delay Profile, and Delay-Doppler Spectrum
Alexander Paier, Vienna University of Technology; Johan Karedal, Lund University; Nicolai Czink, Vienna University of Technology; Helmut Hofstetter, Freelance; Charlotte Dumard, Thomas Zemen, Forschungszentrum Telekommunikation Wien (ftw.); Fredrik Tufvesson, Lund University; Andreas Molisch, Mitsubishi Electric Research Labs/Lund University; Christoph Mecklenbräuker, ftw..

28701 Design of Measurement-Based Wideband Mobile Radio Channel Simulators
Dmitry Umansky, Matthias Pätzold, Agder University College

36943 Empirical Distribution Approach to the Robustness Measure for Non-Stationary Data
Hyeon-Cheol Lee, Korea Aerospace Research Institute; Guillaume Raux, Don R. Halverson, Texas A&M University

10297 Blind Carrier Frequency Offset Estimation for Cross QAM Constellations
Stefania Colonnese, Gianpiero Panci, Stefano Rinauro, Gaetano Scarano, University of Rome "Sapienza"

32119 Efficient Sum-of-Sinusoids-Based Simulation of Mobile Fading Channels with Asymmetrical Doppler Power Spectra
Carlos Adrian Gutierrez-Diaz-de-Leon, Politechnic University of Catalonia; Matthias Pätzold, University of Agder

Oral Session 4B –MAC & Cross-Layer Design

Thursday 18th October 2007 11:00 ~ 12:40, Haraldsalen
Session Chair: Yan Zhang, Simula Research Laboratory, Norway

72438 Design and Analysis of Enhanced Grouping DCF Scheme for the MAC Layer Enhancement of 802.11n with Ultra-High Data Rate
Ting Kuo Chang, Feipei Lai, Hsiu-Hui Lee, National Taiwan University

66079 Using Directional Antenna to Realize Multi-Relay MAC for Wireless Ad Hoc Networks
Yong Wang, Hao Zhu, Florida International University

44334 Cross-Layer Interactions in UMTS Evolved UTRAN (E-UTRAN)
Paul Bucknell, Philips Research Laboratories

51643 Cross-Layer Resource Allocation for MC-CDMA
Virginia Corvino, University of Bologna; Velio Tralli, University of Ferrara; Roberto Verdone, University of Bologna

69704 Joint Adaptive Modulation, Diversity Combining, and Power Control for Uplink Transmission in Two-Cell Wireless Networks
Anders Gjendemsjo, Norwegian University of Science and Technology; Hong-Chuan Yang, University of Victoria; Mohamed-Slim Alouini, Texas A&M University at Qatar; Geir E. Øien, Norwegian University of Science and Technology

Oral Session 4C – Energy/Power Aware Design

Thursday 18th October 2007 11:00 ~ 12:40, Sverresborg
Session Chair: Serguei Primak, University of Western Ontario, Canada

25892 Topology Generation and Power Assignment in IR-UWB Networks
Daniel Bielefeld, Rudolf Mathar, RWTH Aachen University

69861 On Achievable Data Rates and Optimal Power Allocation in Fading Channels with Imperfect CSI
Serguei Primak, University of Western Ontario; Kareem Baddour, Tricia Willink, Communications Research Centre; Khaled Almustafa, The University of Western Ontario

59991 Cooperative Power Saving Strategies in Wireless Networks: An Agent-Based Model
Federico Albiero, Marcos Katz, VTT - Technical Research Centre of Finland; Frank Fitzek, University of Aalborg

70489 Energy-Efficient Adaptive Route Configuration in Short-Range Wireless Ad Hoc Networks
Even Krogsveen, Changmian Wang, Geir E. Øien, Norwegian University of Science and Technology; Saska Lindfors, Helsinki University of Technology

15864 Energy-Aware Routing Optimization in Ad Hoc Wireless Networks Under QoS Constraints
Raffaele Rugin, University of Ferrara; Antoine Dejonghe, IMEC Belgium; Gianluca Mazzini, Velio Tralli, University of Ferrara

ORAL SESSION 5

Oral Session 5A - Antennas

Thursday, 18th October 2007, 14:00 ~ 15:40, Olav Tryggvasson II
Session Chair: Per-Hjalmar Lehne, Telenor, Norway

58396 Performance Analysis of Transmit Diversity Systems with Multiple Antenna Replacement
Kihong Park, Young-Chai Ko, Korea University; Hong-Chuan Yang, University of Victoria

37988 Link Performance of an ESPAR-Antenna Array in Rich Scattering and Clustered Channels
Robert Bains, Ralf Müller, Norwegian University of Science and Technology; Antonis Kalis, Athens Information Technology

26328 Analysis of Antenna Array Receivers Configurations for Satellite Earth Station Modems
Miguel A. Salas Natera, Ramon Martínez Rodríguez-Osorio, Leandro de Haro Ariet, Universidad Politécnica de Madrid

85172 Cross Slot Antenna with U-Shaped Tuning Stub for Ultra Wideband Applications
Dawood Javan, Islamic Azad University of Mashhad; Nader Sargolzaei, Azad University of Mashhad

99458 Diversity Efficiency of Multimode Antennas Impacted by Finite Pattern Correlation and Branch Power Imbalances
Oliver Klemp, Delphi Delco Electronics Europe GmbH; Hermann Eul, Infineon

Oral Session 5B – Sensor & Body Area Networks

Thursday, 18th October 2007, 14:00 ~ 15:40, Haraldsalen
Session Chair: Huan-Bang Li, National Institute of Information and Communications Technology, Japan

11641 IEEE Body Area Networks for Medical Applications
Bin Zhen, Huan-Bang Li, NICT; Ryuji Kohno, Yokohama National University

45793 Privacy Protection Mechanisms for Hybrid Hierarchical Wireless Sensor Networks
Anelia Mitseva, Aalborg University; Matthias Gerlach, Fraunhofer FOKUS; Neeli Prasad, Aalborg University

89715 Comparisons of ZigBee Personal Area Network (PAN) Interconnection Methods
Sewook Jung, Alexander Chang, Mario Gerla, UCLA

19635 A QoS-Aware Routing Service Framework for Biomedical Sensor Networks
Xuedong Liang, University of Oslo; Ilangko Balasingham, Norwegian University of Science and Technology

39695 Cognitive Temporary Bypassing for Reliable Transmission in Wireless Ad Hoc Networks
Yasushi Yamao, Kenichi Nagao, University of Electro-Communications

Oral Session 5C – Coding & Detection

Thursday, 18th October 2007, 14:00 ~ 15:40, Sverresborg
Session Chair: Pål Orten, Thrane & Thrane, Norway

12085 Spatial Loading in V-BLAST Systems with Limited Feedback and ZF-OSIC Detection
Maurizio Magarini, Politecnico di Milano

46760 Automotive Ultrasoic Sensor Array for Short-Range Targets Detection
Hiroyuki Hatano, Takaya Yamazato, Masaaki Katayama, Nagoya University

13009 SINR Analysis for Full-Rate Linear Dispersion Code Using Linear MMSE
Mabruk Gheryani, Zhiyuan Wu, Yousef Shayan, Concordia University

94096 On the Optimized Patent-Free LDPC Code Design for Content Distribution Systems
Dejan Vukobratovic, Vojin Senk, University of Novi Sad

87341 Enhanced Energy Detector for IEEE 802.22 WRAN Systems Using Maximal-to-Mean Power Ratio
Guanbo Zheng, Ning Han, Xiaoge Huang, Sung Hwan Sohn, Jae Moung Kim, Inha University

ORAL SESSION 6

Oral Session 6A – Wireless Systems

Friday, 19th October 2007, 9:00 ~ 10:40, Olav Tryggvasson II
Session Chair: Valeri Kontorovich, CINVESTAV, Mexico

57410 System Concept and Service Architecture in Pervasive Environments Based on WWRF Requirements
Klaus David, University of Kassel

65186 Wireless Vehicular Adaptive Radio Resource Management Policies in Congested Channels
Miguel Sepulcre, Javier Gozálvez, University Miguel Hernández

99587 Lab and Research Activities at Wireless Trondheim
Steinar Andresen, John Krogstie, Norwegian University of Science and Technology; Thomas Jelle, Trådløse Trondheim AS

75441 Analyzing IKEv2 Performance when Protecting Mobile IPv6 Signaling
Zoltán Faigl, Budapest University of Technology and Economics; Stefan Lindskog, Anna Brunstrom, Karlstad University

28153 Applications of Parameterized Packet Error Models for Simulating Mobile DVB-H Reception in An Urban Environment
Jussi Poikonen, University of Turku

Oral Session 6B – Scheduling & Cooperative Networks

Friday, 19th October 2007, 9:00 ~ 10:40, Haraldsalen
Session Chair: Mike Faulkner, Victoria University, Australia

64921 Scheduling Algorithms for Increased Throughput Guarantees in Wireless Networks
Vegard Hassel, Telenor R&I; Sebastien de la Kethulle de Ryhove, Geir E. Øien, Norwegian University of Science and Technology

69512 Amplify-and-Forward Space-Time Coded Cooperation via Incremental Relaying
Behrouz Maham, University of Oslo; Are Hjørungnes, UniK - University Graduate Center

52064 Downlink Cooperative Communication Using Differential Relaying
Manav R. Bhatnagar, University of Oslo; Are Hjørungnes, UniK - University Graduate Center

56624 Efficient Configuration of Multi-Branch Wireless Cooperative Networks
Javad Vazifehdan, Delft University of Technology; Hamid Reza Shafiee, American University in Dubai

31323 A Bandwidth-Efficient Coded User-Cooperation Scheme for Flat Block Fading Channels
Khuong Ho Van, Tho Le-Ngoc, McGill University

Oral Session 6C - Wireless Networks
Friday, 19th October 2007, 9:00 ~ 10:40, Sverresborg
Session Chair: Yan Zhang, Simula Research Laboratory, Norway

97016 A Simplified Approach to Multicast Forwarding Gateways in MANET
Yannick Lacharité, Communications Research Centre Canada; Lars Landmark, UniK University Center Norway; Maoyu Wang, Communications Research Centre Canada

52112 Comparative Analysis of T-QoMIFA and HMRSVP
Esam Alnasouri, Andreas Mitschele-Thiel, Ali Diab, Technische Universität Ilmenau

49634 CHRIS: CHannel and Radio Interface Switching for Multi-Radio Wireless Mesh Network
Chengchen Hu, Tsinghua University; Kai Miao, John Vicente, Sanjay Rungta, John Ye, Intel Corporation

44953 Improving RED Performance During Handover in Wireless IP Networks
Dagang Li, Johan Theunis, Kristof Sleurs, Jan Potemans, Emmanuel Van Lil, Antoine Van de Capelle, Katholieke Universiteit Leuven

40064 Peak Load Reduction on the Mobile Networks by Applying New Pricing Policies
Kinan Ghanem, Nadir Zamin Khan, Andreas Mitschele-Thiel, Technische Universität Ilmenau

ORAL SESSION 7 Friday 19th October 2007 11:00 ~ 13:00

Oral Session 7A – Transmission Technologies
Friday, 19th October 2007, 11:00 ~ 13:00, Olav Tryggvasson II
Session Chair: Pål Orten, Thrane & Thrane, Norway

39003 Level Crossing Rates and Average Fade Durations for Multibranch Diversity Receivers Operating on κ - μ Fading Channels
Daniel Benevides da Costa, Michel Daoud Yacoub, State University of Campinas

47264 A Novel Low Complexity Linear Precompensation Technique for Multi-User DSL Transmissions
Meryem Ouzzif, Issam Wahibi, Jérôme Le Masson, France Telecom Research & Development; Samir Saoudi, ENST Bretagne

18702 Diversity Gain Analysis of a Novel Dual-Frequency Multiple Access Relay Transmission Scheme
Babak H. Khalaj, Sharif University of Technology; Javier Del Ser, Pedro M. Crespo, Jesus Gutierrez-Gutierrez, CEIT and TECNUN (University of Navarra)

95331 Demonstration of Time-Reversal in Indoor Ultra-Wideband Communication: Time Domain Measurement
Ali Khaleghi, Ghaïs El Zein, Ijaz Haider Naqvi, Institut National des Sciences Appliquées

38617 On the Impact of Fixed Point DSP Implementation on Required Channel Estimator Complexity in Communication Receivers
Asghar Havashki, Per G. Kjeldsberg, Geir E. Øien, Lars Lundheim, Norwegian University of Science and Technology

23538 Parallel Block Signal Processing in High Speed Wireless Communication Systems
Klaus Hueske, University of Dortmund; Christian Vincent Sinn, University of Sydney; Jürgen Götze, University of Dortmund

Oral Session 7B - CDMA

Friday, 19th October 2007, 11:00 ~ 13:00, Haraldsalen
Session Chair: Neji Youssef, Ecole Supérieure des Communications de Tunis (SUPCOM), Tunisia

57848 Distance-Optimal Oversaturated CDMA Signature Ensemble
Jarkko Paavola, Valery Ipatov, University of Turku

40070 Slow and Fast Adaptation of Partial Equalization for MC-CDMA Systems
Barbara Masini, WiLab, University of Bologna; Flavio Zabini, University of Bologna; Andrea Conti, University of Ferrara

53062 Effect of MAI and Frequency Offset on the Performance of Coded MC-CDMA Synchronous Downlink Systems with MSK Modulation
Mohamad Abou El-Nasr, Arab Academy for Science and Technology (AAST); Heba Shaban, Virginia Tech (VT- MENA), AAST; Mohab A. Mangoud, AAST

52000 Single-User Receiver for Signature-Interleaved DS CDMA in Multipath Channel
Alexey Dudkov, Turku Centre for Computer Science (TUCS)

12032 Asynchronous Oversaturated Group Orthogonal CDMA Using Chip Interleaving with Zero Padding
Alexey Dudkov, Turku Centre for Computer Science (TUCS); Jarkko Paavola, University of Turku

27359 Downlink DSTBC-WCDMA in a Fast Time-Dispersive Channel
Edwin M. Umali, Yasushi Yamao, University of Electro-Communications (UEC Tokyo)

Oral Session 7C – VoIP & Misc

Friday, 19th October 2007, 11:00 ~ 13:00, Sverresborg
Session Chair: Steinar Andresen, Norwegian University of Science and Technology, Norway

95700 Dynamic Packet Bundling for VoIP Transmission over Rel'7 HSUPA with 10ms TTI Length
Oscar Fresan, Magister Solutions OY; Chen Tao, Nokia Technology Platforms; Karri Ranta-aho, Nokia Siemens Networks; Tapani Ristaniemi, Jyväskylä University

74556 Securing VoIP Services in Multi-Hop Wireless Mesh Networks
Yi Xian, Chin-Tser Huang, University of South Carolina

61533 Secure Priority Based Inter-Vehicle Communication MAC Protocol for Highway Safety Messaging
Chakkaphong Suthaputchakun, Aura Ganz, University of Massachussets

20177 A Hashing-Based Anti-Collision Algorithm for RFID Tag Identification
Giulio Binetti, Gennaro Boggia, Luigi Alfredo Grieco, Pietro Camarda, Politecnico di Bari

32537 A Novel Extraction Technique of Long Term Memory Effects in Solid State Amplifiers Based on Compound DynamicVolterra Models Structure
Zhour Madini, Abderazzak Bennadji, Edouard Ngoya, University of Limoges

POSTER PRESENTATION SESSIONS

POSTER SESSION 1A: Transmission Technologies 1
Wednesday,17th October 2007, 14:00 ~ 15:40, *Foaje*

11087 Error Rate Estimation for DS-IR and DS-UWB over Frequency Selective Channels
Lorenzo Piazzo, Francesco Nuzzolo, University of Rome

19766 Asymptotically Optimal Sum-Rate of Random Unitary Beamforming with Double Thresholds
Hyung-Ki Sung, Jinhee Lee, Young-Chai Ko, Korea University

20967 Capacity-Based Link Design of MIMO Radio Systems
Akiyo Yoshimoto, Takeshi Hattori, Sophia University

22611 Analysis of the Achievable Rate for a Multiuser System with Multiple Antennas
Alberto Zanella, IEIIT-CNR; Enrica Salbaroli, University of Bologna

23063 Frame-Synchronization for OFDM-Transmission with Sectorized Antenna Reception over Rapidly Fading Channels
Peter Klenner, Karl-Dirk Kammeyer, University of Bremen

26338 A Novel Low-Complexity Dynamic Frequency Selection Algorithm for Cognitive Radios
Sara Bahramian, Babak H. Khalaj, Sharif University of Technology

32068 Availability of Channel Reciprocity for Antenna Selection in OFDM TDD Systems
Yuan Zhu, Beijing University of Posts and Telecommunications; Nokia; Chunye Wang, Nokia Networks; Dacheng Yang, Beijing University of Posts and Telecommunications

52784 Performance Enhancement of Multiuser Time Reversal UWB Communication System
Ijaz Haider Naqvi, Ali Khaleghi, Ghaïs El Zein, IETR/INSA de Rennes

62031 An Efficient Fixed Complexity QRD-M Algorithm for MIMO-OFDM Using Per-Survivor Slicing
Thorben Detert, Rohde & Schwarz

48280 Acquisition of an Unknown Hopping Code in an Ultra-Wideband FH-OFDM System
Paavo Hahtola, Antti Anttonen, Aarne Mämmelä, VTT Technical Research Centre of Finland

95398 An Adaptive Cooperative Spectrum Sensing Scheme Based on the Optimal Data Fusion Rule
Lei Chen, Jun Wang, Shaoqian Li, University of Electronic Science and Technology of China

POSTER SESSION 1B: Wireless Networks 1
Wednesday, 17th October 2007, 16:00 ~ 17:40, *Foaje*

16614 Security and AAA Architecture for WiFi-WiMAX Mesh Network
Abed Samhat, France Telecom R&D; Miloud Abdi, T&T Consulting

17144 Trust Integrated Cooperation Model for Mobile Ad Hoc Networks
Venkat Balakrishnan, Vijay Varadharajan, Uday K Tupakula, Phillip Lucs, Macquarie University

31140 HSDPA Link Adaptation Improvement Based on Node-B CQI Processing
David Martin-Sacristan, Jose F. Monserrat, Polytechnic University of Valencia; Daniel Calabuig, Narcis Cardona, Technical University of Valencia

34022 Load-Balanced Cluster-Based Cooperative MIMO Transmission for Wireless Sensor Networks
Tianshi Gao, Lin Zhang, Yi Gai, Xiuming Shan, Tsinghua University

40349 Coverage Estimations in a WLAN-Based Open Broadband Access Network (OBAN)
Per H. Lehne, Terje Ormhaug, Telenor R&D; Olav Østerbø, Telenor R&I

44750 Genetic Algorithm to Optimize Node Placement and Configuration for WLAN Planning
Timo Vanhatupa, Marko Hännikäinen, Timo D. Hämäläinen, Tampere University of Technology

50593 A Distributed Probability Collectives Optimization Method for Multicast in CDMA Wireless Data Networks
Mohammad Hossein Ameri Mehr, Babak H. Khalaj, Sharif University of Technology

55821 A Threshold-Based Hybrid Routing Protocol for MANET
Jing Xie, Luis Girones Quesada, Yuming Jiang, Norwegian University of Science and Technology

72931 EK-DYMOv6: Implementation of DYMO with PacketBB Conformance in IPv6 Environment
Sutaek Oh, Dongkyun Kim, Hong-Jong Jeong, Kyungpook National University

75169 Enhanced Operation of DQMAN Based Wireless Ad Hoc Networks
Jesus Alonso, CTTC; Elli Kartsakli, Universitat Politècnica de Catalunya; Alex Cateura, UPC; Christos Verikoukis, CTTC; Luis Alonso, UPC

86474 Interference Aware Routing Protocols over Ad Hoc UWB Networks
Floriano De Rango, Peppino Fazio, Fiore Veltri, Salvatore Marano, University of Calabria

POSTER SESSION 2A: Transmission Technologies 2

Thursday, 18th October 2007, 11:00 ~ 12:40, *Foaje*

11127 Soft Versus Hard Interference Cancellation in MMSE OSIC MIMO Detector: A Comparative Study
Jun Wang, Shaoqian Li, University of Electronic Science and Technology of China

63896 Space-Time Adaptive MMSE Multiuser Decision Feedback Detectors with Multiple Feedback Interference Cancellation for CDMA Systems
Yunlong Cai, Rodrigo de Lamare, University of York

71756 Multiple Antennas Bluetooth System for RSSI Stabilization
Javier Rodas, T. Fernández-Caramés, Daniel I. Iglesia, Carlos J. Escudero, Universidade Da Coruña

54307 Constrained Constant Modulus RLS-Based Blind Adaptive Beamforming Algorithm for Smart Antennas
Lei Wang, Rodrigo de Lamare, University of York

80186 Prefiltered Turbo Equalization with SINR Mismatch
Asri Shaheem, Western Australian Telecommunications Research Institute; Hans-Jürgen Zepernick, Blekinge Institute of Technology; Manora Caldera, Western Australian Telecommunications Research Institute

81356 Power Constrained Channel Optimized Vector Quantisers Used for Bandwidth Expansion
Pål Anders Floor, Tor A. Ramstad, Norwegian University of Science and Technology; Niklas Wernersson, Royal Institute of Technology (KTH)

82394 On the Performance of One Bit Time Reversal for Multi-User Wireless Communications
Hung Tuan Nguyen, Aalborg University

90848 Linear Pre-Whitening Detector for Space-Time Block Codes over Time-Selective Fading Channels
Lingyang Song, University of York; Are Hjørungnes, UniK - University Graduate Center; Manav R. Bhatnagar, University of Oslo

92827 Power Consumption Model for Linear RF Power Amplifiers with Rectangular M-QAM Modulation
Mikko Talonen, Saska Lindfors, Helsinki University of Technology

94415 Low-Complexity Blind Adaptive MIMO Receivers for CDMA Systems with Space-Time Block-Codes in Multipath Channels
Rodrigo de Lamare, University of York; Raimundo Sampaio-Neto, PUC-RIO

96926 A Detect-And-Avoid Method for Single-Carrier UWB Systems
Kenichi Takizawa, National Institute of Information and Communications Technology (NICT); Yasuhisa Yamamoto, Aoyama Gakuin University; Keren Li, Huan-Bang Li, Ryuji Kohno, NICT

POSTER SESSION 2B: Wireless Networks 2

Thursday, 18th October 2007, 14:00 ~ 15:40, *Foaje*

20897 Relay Strategies for High Rate Space-Time Code in Cooperative MIMO Networks
M. K. Arti, Ranjan Bose, Indian Institute of Technology; Manav R. Bhatnagar, University of Oslo; Are Hjørungnes, UniK - University Graduate Center

21373 On Improving Perceived User Throughput in Heterogeneous HSPA, GERAN and WLAN Scenarios
Rickard Ljung, TeliaSonera; Oriol Sallent, Jordi Perez-Romero, Universitat Politecnica de Catalunya (UPC)

44654 QoS-CROMA: An On-Demand Time-Slotted MAC Protocol with QoS Support for Wireless Ad Hoc Networks
Floriano De Rango, Annalisa Perrotta, Salvatore Marano, University of Calabria

53230 Performance Analysis of Location-Based Loading Control for Downlink FH-OFDMA Systems
Sungho Jeon, Broadcasting Technical Research Institute, KBS; Younghyun Jeon, Samsung Electronics Co.; Sanghoon Lee, Yonsei University

59647 Multipath Routing Using Isochronous Medium Access Control with Multi Wakeup Period for Wireless Sensor Networks
Takashi Matsuda, Takafumi Aonishi, Takashi Takeuchi, Hiroshi Kawaguchi, Chikara Ohta, Masahiko Yoshimoto, Kobe University

65414 Tracking a Mobile Target with a Selected Pair of Sensors
Naresh Sharma, Vaishali P. Sadaphal, Bijendra N. Jain, Indian Institute of Technology

77249 Enhancement of MBMS Through Macro Diversity Schemes in a Microcell Environment
Nuno Pratas, António Rodrigues, IT/IST, Technical University of Lisbon

79933 Multiple-Access Relay Channel with Network Coding and Non-Ideal Source-Relay Channels
Dereje H. Woldegebreal, Holger Karl, University of Paderborn

80036 Supervisory and Notification Aggregator Service Enabler in a Fixed Mobile Convergent Architecture
Charis Konstantinides, Charalambos D. Charalambous, University of Cyprus

86414 MDRP: A Content-Aware Data Exchange Protocol for Mobile Ad Hoc Networks
Stephan Eichler, Technische Universität München

95642 A Smart Antenna Module Using OMNeT++ for Wireless Sensor Network Simulation
Kerem Kucuk, Adnan Kavak, Halil Yigit, Kocaeli University

POSTER SESSION 3A: Coding, Estimation & Fading Channels

Friday, 19th October 2007, 9:00 ~ 10:40, *Foaje*

45356 Reed-Solomon Decoding Algorithms and Their Complexities at the DVB-H Link-Layer
Tero Jokela, Eero Lehtonen, University of Turku

64521 Error Correction and Concealment for JPEG 2000 Video Transmitted over Wireless Networks
Giuseppe Baruffa, Paolo Micanti, Fabrizio Frescura, University of Perugia

44372 Performance Comparison of Space-Time Coded MIMO-OFDM Systems Using Different Wideband MIMO Channel Models
Yuanyuan Ma, Matthias Pätzold, University of Agder

89862 Blind Adaptive Constrained Reduced-Rank Estimation Algorithms for Constant Modulus Signals Applied to CDMA Interference Suppression
Rodrigo de Lamare, University of York; Raimundo Sampaio-Neto, PUC-RIO; Martin Haardt, TU Ilmenau

76066 Iterative Joint Channel Estimation and Multiuser Detection for Wireless MIMO-OFDM Systems: Performance in a Real Indoor Scenario
Pierluigi Salvo Rossi, Norwegian University of Science and Technology; Parisa Pakniat, Lund University; Ralf Müller, Norwegian University of Science and Technology; Ove Edfors, Lund University

83055 On the Impact of the Pilot Density in the Channel Estimation of MC-CDMA Systems
Carlos Ribeiro, Polytechnic Institute of Leiria; Atilio Gameiro, Instituto de Telecomunicações / University of Aveiro

10864 EMOS Platform: Real-Time Capacity Estimation of MIMO Channels in the UMTS- TDD Band
Raul de Lacerda, Leonardo Sampaio, Raymond Knopp, David Gesbert, Mérouane Debbah, Institut Eurecom

24380 Novel Joint Blind Channel and Carrier Offset Estimation Method for CDMA Systems
Dimitris Vlachos, National Technical University of Athens; Sivitos Stamatis, University of Athens, Greece; M. G. Hadjinicolaou, School of Engineering and Design, Brunel University

55027 A MIMO Mobile-To-Mobile Channel Model Derived from a Geometric Street Scattering Model
Ali Chelli, Matthias Pätzold, University of Agder

99847 Terrain and Clutter Impact on Joint Statistical Properties of Azimuth Spread and Delay Spread in Macro-Cell Bad Urban Environment
Pedro Vieira, Paula Queluz, António Rodrigues, IT/IST, Technical University of Lisbon

POSTER SESSION 3B: Networks, Systems & Services

Friday, 19th October 2007, 11:00 ~ 13:00, *Foaje*

18014 Strategies for Effective Frequency Allocations for Satellite Communications
Maria Siddiqua, Pakistan Space & Upper Atmosphere Research Commission; Sara Tariq Sheikh, National University of Sciences and Technology

21610 Habitual Behavior-Based Opportunistic Data Forwarding in Wildlife Tracking
Chia-Mu Yu, Academia Sinica and National Taiwan University; Chun-Shien Lu, Academia Sinica; Sy-Yen Kuo, National Taiwan University

39382 On Optimal Slot Allocation for Reservation TDMA MAC Protocol in Shadow Fading Environment
James Gadze, Niki Pissinou, Garth Crosby, Florida International University

81168 A Fair Scheduling Algorithm to Improve Stability Region with Zero-Forcing Beamforming for A Multiuser MIMO Wireless Systems
Augusto Foronda, Chikara Ohta, Hisashi Tamaki, Kobe University

58871 A Predictive Scheduler for FDD Systems Based on the Windowed Empirical CDF
Stefano Sorrentino, Nokia Siemens Networks S.p.A.; Umberto Spagnolini, Politecnico di Milano

76172 Unnecessary Competition in Multi-Hop Wireless Networks
Jie Xu, Guofang Tu, Graduate University of Chinese Academy of Sciences; Yuming Jiang, Norwegian University of Science and Technology

94214 Throughput Performance of Two-Way Relaying in IEEE 802.11 Networks
Azadeh Ettefagh, Marc Kuhn, Armin Wittneben, Swiss Federal Institute of Technology (ETH)

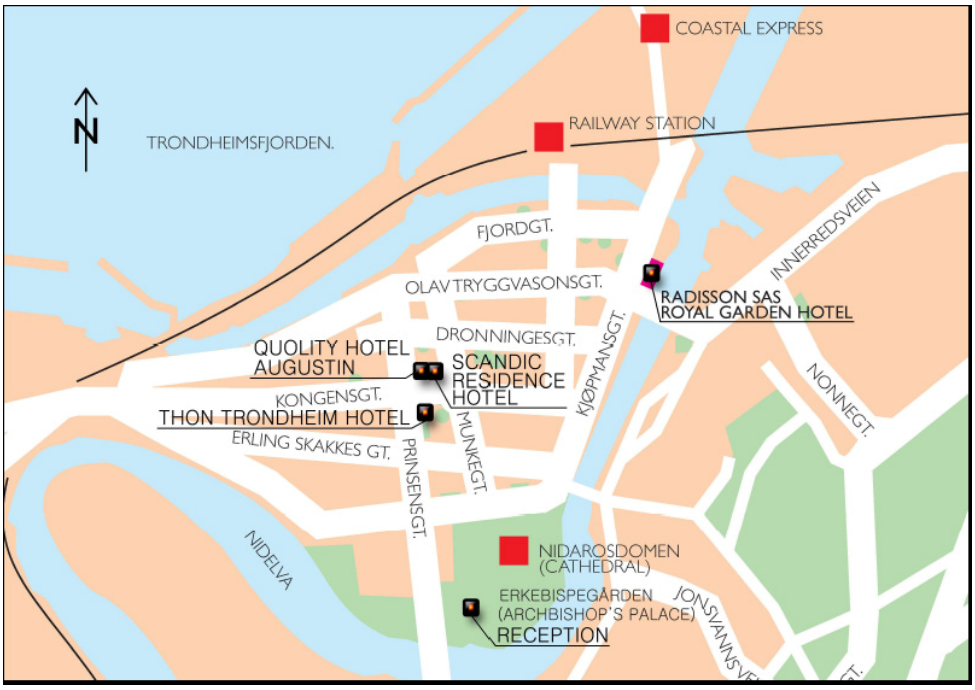
96396 Evaluation of Uplink Performance for WiMAX Broadband System Using High Altitude Platforms
Zhe Yang, Abbas Mohammed, Blekinge Institute of Technology

72588 Analysis of Cross-Layer Optimization Between Application and Link Layer
Andreas Saul, Gunther Auer, DoCoMo Euro-Labs

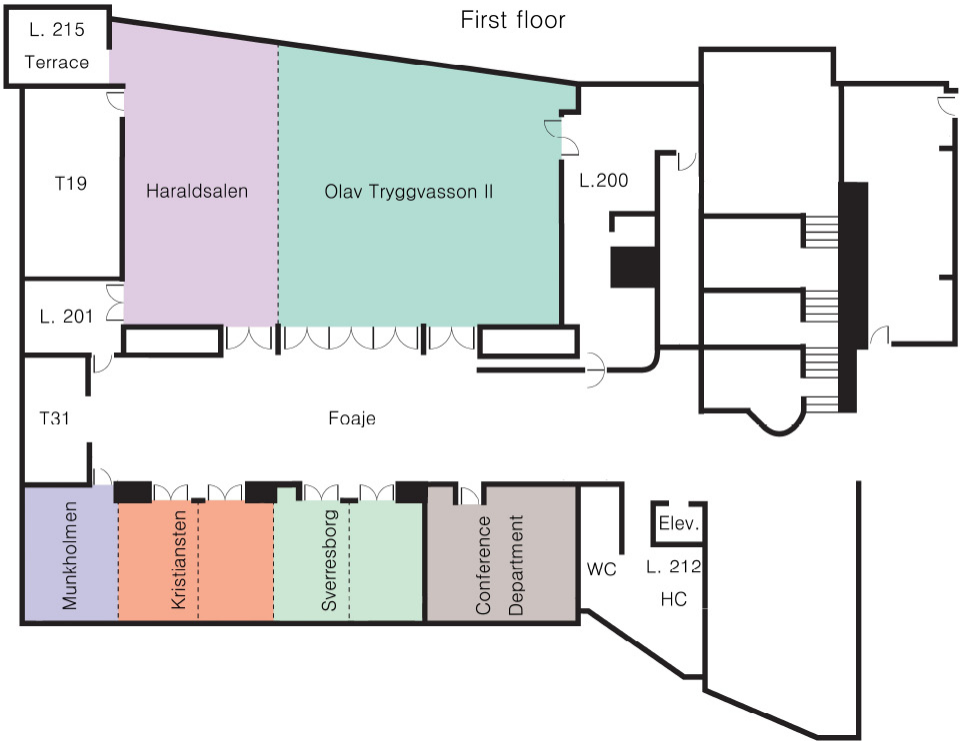
VENUE

The conference will take place at Radisson SAS Royal Garden Hotel, Trondheim. You can access the hotel homepage *http://www.radissonsas.com* to learn more information. The airport bus (Flybuss) stops in front of the hotel and runs every 15 minutes. For other hotels reserved by the conference to Radisson SAS Royal Garden Hotel, the location map is shown below.

The welcome reception will be hosted by The City of Trondheim (Trondheim Kommune) at Archbishop's Palace (Erkebispegården). The conference dinner will be at Radisson SAS Royal Garden Hotel.



The conference layout (on the first floor of Radisson SAS Royal Garden Hotel)



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Telenor Research and Innovation

Telenor Research and Innovation (R&I) contributes to the long-term global competitive strength of Telenor's current and future business, by facilitating innovation and providing input to strategic development.

R&I is an innovation hub for Telenor with particular focus on strategically driven innovations with a long-term perspective (2-3 years), innovations that do not fit into existing business areas or business lines, and innovations that are considered strategically important by Group management, but which challenge existing line operations and business models.

R&I is a competence resource centre for the whole organisation, offering expertise and advice, challenges to management on existing strategies and business mind set. The activities include experimentation, testing and demonstration facilities. R&I offers world class research in defined areas of value to Telenor operations, based on R&I´s own research, analyses, and experimentation, and on cooperation with leading companies and research organizations.

The organisation consists largely of five research units which reflect the broad R&I field of competence. These units are Business Models, Products and Markets, Service Platforms, Network Technologies and Commercialisation. The work is carried in interdisciplinary projects. A large number of initiatives and programs are related to Telenor's current and future global mobile operations, both technically as to mobile systems, wireless networks and service platform technologies, and with regards to customers knowledge, user networks, and future markets and services. The R&I centre in Malaysia was established in 2006 to enlarge the R&I scope and initiate closer studies of emerging markets and new customer segments, with the aim of supporting Telenor's global operations.

The Commercialisation unit is established to strengthen Telenor's ability to profitably commercialise new ideas in the marketplace. New initiatives can either be realised within the Telenor organisation, or they are established as new business in independent companies, often in cooperation with third parties. R&I has considerable collaboration with third parties, both nationally and internationally.

Telenor:
Headquartered in Oslo, Norway, Telenor is an international provider of high quality telecommunications, data and media communication services. Telenor is one of Norway's largest companies with revenues in 2006 of approx. NOK 91.1 billion (USD 14.8 billion) and a work force of more than 32,000 domestically and abroad. Telenor is listed at the Oslo Stock Exchange (TEL).

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