



The 2005 International Workshop on Convergent Technologies
(IWCT'05)

6 – 10 June 2005 Oulu, Finland

PROGRAMME AT A GLANCE

Monday 6 June

Tutorials

TS101

TS126

08.00-08.45	Registration and coffee	08.00-08.45	Registration and coffee
08.45-16.15	TUTORIAL 1, FULL DAY OPTIMAL SUBSPACE-BASED SIGNAL PROCESSING Richard J. Vaccaro, <i>University of Rhode Island, USA</i>	08.45-12.00	TUTORIAL 2, HALF DAY ITERATIVE ("TURBO") ALGORITHMS ON FACTOR GRAPHS Ezio Biglieri, <i>Politecnico di Torino, Italy</i>
09.45-10.00	Coffee in Datania	09.45-10.00	Coffee in Datania
10.00-12.00	TUTORIAL 1	10.00-12.00	TUTORIAL 2
12.00-13.00	Lunch in Datania	12.00-13.00	Lunch in Datania
13.00-14.00	TUTORIAL 1	13.00-16.15	TUTORIAL 3, HALF DAY ULTRAWIDEBAND STANDARDS Ted Rappaport, <i>WNCG, University of Texas at Austin, USA</i>
14.00-14.15	Coffee in Datania	14.00-14.15	Coffee in Datania
14.15-16.15	TUTORIAL 1	14.15-16.15	TUTORIAL 3
16.15-16.30	Break		
16.30-18.00	IEEE DISTINGUISHED LECTURE SERVING THE FUTURE MOBILE SOCIETY – WIRELESS TECHNOLOGY EVOLUTION & KEY AREAS OF RESEARCH Javan Erfanian, <i>Bell Mobility, Canada</i>		

Tuesday 7 June

Technical Sessions

Lecture Room TS101		Lecture Room TS127		Demos
08.30-10.00	PLENARY SESSION 1			
08.40-09.20	COOPERATIVE COMMUNICATION: FUNDAMENTAL LIMITS AND ENABLING TECHNOLOGIES Behnaam Aazhang, <i>Rice University, USA</i>			
09.20-10.00	CONVERGENCE ON 4G Ramjee Prasad, <i>Aalborg University, Denmark</i>			
10.00-10.30	Coffee in TS128	10.00-10.30	Coffee in TS128	Demos in TS128
10.30-12.00	TECHNICAL SESSION 1 Invited Session			
10.30-11.00	* A CDMA REVERSE-LINK RATE CONTROL ALGORITHM WITH FAIRNESS GUARANTEE Raymond Yim, Oh-Soon Shin and Vahid Tarokh, <i>Harvard University, USA</i>			
11.00-11.30	* MAXIMIZING THE DIVERSITY ORDER IS NO LONGER A REASONABLE CRITERION FOR BROADBAND WIRELESS LINK DESIGN Tad Matsumoto, <i>CWC, University of Oulu, Finland</i>			
11.30-12.00	* HOW DIFFERENT ARE UWB CHANNELS FROM CONVENTIONAL WIDEBAND CHANNELS? Ulrich Schuster and Helmut Bölcskei, <i>Swiss Federal Institute of Technology (ETH), Switzerland</i>			
12.00-13.00	Lunch in Datania	12.00-13.00	Lunch in Datania	
13.00-14.30	TECHNICAL SESSION 2 Invited Session			
13.00-13.30	* CONVERGENCE IN MOBILE AND WIRELESS NETWORKS: A PERSPECTIVE Sastri Kota, <i>Harris Corporation, USA</i>			
13.30-14.00	* ON THE DEFINITION OF THE FOURTH GENERATION WIRELESS COMMUNICATIONS NETWORKS: THE CHALLENGES AHEAD Marcos Katz, <i>Samsung Electronics, Korea</i> and Frank H.P. Fitzek, <i>Aalborg University, Denmark</i>			
14.00-14.30	* DEVELOPMENT OF OFDM/TDMA-BASED BROADBAND WIRELESS ACCESS SYSTEMS - DYNAMIC PARAMETER CONTROLLED OFDM/TDMA (DPC-OF/TDMA) SYSTEM Seiichi Sampei, <i>Osaka University, Japan</i> and Hiroshi Harada, <i>National Institute of Information and Communications Technology, Japan</i>			
14.30-15.00	Coffee in Datania	14.30-15.00	Coffee in Datania	Demo in Datania

* invited paper

Tuesday 7 June

Technical Sessions

Lecture Room TS101		Lecture Room TS127		Demos
15.00-16.40	TECHNICAL SESSION 3 Enhanced PHY1	15.00-16.40	TECHNICAL SESSION 4 Ad hoc / WLAN	
15.00-15.20	SOFT-ITERATIVE ESTIMATION OF STRUCTURED CHANNELS: PERFORMANCE ANALYSIS AND COMPARISON Simone Ferrara, <i>CWC, University of Oulu, Finland</i> ; Monica Nicoli and Umberto Spagnolini, <i>Politecnico di Milano, Italy</i>	15.00-15.20	PERFORMANCE EVALUATION OF AN ORIGINAL ACCESS METHOD FOR WIRELESS HOME AREA NETWORK Nadir Hakem and Michel Misson, <i>IUT Clermont-Fd, France</i>	
15.20-15.40	UWB NON-COHERENT HIGH DATA RATES TRANSCIEVER ARCHITECTURE AND IMPLEMENTATION Jean-Baptiste Doré and Bernard Uguen, <i>IETR - Institut d'Électronique et de Télécommunications de Rennes, France</i> ; Stéphane Paquelet and Stéphane Mallégo, <i>Mitsubishi ITE-TCL, France</i>	15.20-15.40	ON CLUSTERED AD HOC NETWORKS: LINK-STATE CLUSTERING ALGORITHM AND ENERGY PERFORMANCE STUDY Gao Chao and Riku Jäntti, <i>University of Vaasa, Finland</i>	
15.40-16.00	A FREQUENCY DOMAIN MULTIUSER DETECTION STRATEGY FOR SHORT-RANGE SYSTEMS BASED ON ULTRA-WIDEBAND COMMUNICATIONS Simone Morosi and Tiziano Bianchi, <i>University of Firenze, Italy</i>	15.40-16.00	SERVICE DISCOVERY OVER OLSR IN MOBILE AD HOC NETWORKS Maria Isabel Vara and Jose Maria Cabero, <i>Fundación Robotiker, Spain</i> ; and Jose Luis Jodra, <i>UPV-EHU University, Spain</i>	
16.00-16.20	ANALYSIS OF LOCATION ACCURACY INCLUDING SYSTEMATIC ERRORS Harri Saarnisaari, <i>CWC, University of Oulu, Finland</i>	16.00-16.20	PERFORMANCE EVALUATION OF AN ADAPTIVE NARROWBAND INTERFERENCE CANCELLER FOR IEEE802.11b WIRELESS NETWORKS Z. Zeng, B. Allen and A. H. Aghvami, <i>King's College London, UK</i>	
16.20-16.40	FPGA PROTOTYPE IMPLEMENTATION OF INTERFERENCE CANCELLATION BASED I/Q MISMATCH COMPENSATOR IN LOW-IF RECEIVERS Juha Suviola, Mikko Valkama and Markku Renfors, <i>Tampere University of Technology, Finland</i>	16.20-16.40	PERFORMANCE EVALUATION OF A RECONFIGURABLE RADIO PLATFORM IN A FIELD TEST AND IN A SIMULATION UTILIZING MEASURED CHANNEL DATA Toshiyuki Nakanishi and Seiichi Sampei, <i>Osaka University, Japan</i> ; Juha Yitälö, <i>CWC, University of Oulu, Finland</i> ; and Jukka-Pekka Nuutinen, <i>Elektrobit Testing Ltd., Finland</i>	
19.00-24.00	BANQUET IN MAIKKULA MANSION			

Wednesday 8 June

Technical Sessions

Lecture Room TS101		Lecture Room TS127		Demos
08.30-10.00	PLENARY SESSION 2			
08.40-09.20	PERSPECTIVES AND CHALLENGES IN ICT João Da Silva, <i>European Commission, Belgium</i>			
09.20-10.00	UBIQUITOUS CONTENT: THE RENAISSANCE OF THE WIRELESS ERA Theodore S. Rappaport, <i>University of Texas at Austin, USA</i>			
10.00-10.20	Coffee in TS128	10.00-10.20	Coffee in TS128	Demos in TS128
10.20-12.10	TECHNICAL SESSION 5 Systems B3G	10.20-12.00	TECHNICAL SESSION 6 Enhanced PHY2	
10.20-10.50	* A NEW LOOK AT MOBILE COMPUTING Kimmo Raatikainen, <i>University of Helsinki, Helsinki Institute for Information Technology and Nokia Research Center, Finland</i>	10.20-10.40	MULTIUSER AND INTERCARRIER INTERFERENCE SUPPRESSION IN OFDM DOWNLINK Yu Fu, <i>University of Alberta, Canada</i> ; Witold A. Krzymieñ, <i>University of Alberta & TRILabs, Canada</i> ; and Chintha Tellambura <i>University of Alberta, Canada</i>	
10.50-11.10	FEASIBILITY OF DVB-H DEPLOYMENT ON EXISTING WIRELESS INFRASTRUCTURE David Gómez-Barquero, <i>Polytechnic University of Valencia, Spain</i> and Aurelian Bria, <i>Royal Institute of Technology, Sweden</i>	10.40-11.00	COMPLEXITY EVALUATION OF MMSE BASED DETECTOR FOR LST ARCHITECTURES Markku Myllylä, Mikko Vehkaperä and Markku Juntti, <i>CWC, University of Oulu, Finland</i>	
11.10-11.30	MIGRATION ROADMAP TO AMBIENT NETWORKS Phillip Eardley, <i>BT Group, UK</i> ; Wilfried Speltaker, <i>Lucent Technologies, Germany</i> ; Bryan Busropan, <i>TNO, Netherlands</i> ; Nick Papadoglou, <i>Vodafone Group, UK</i> ; Helena Flygare and Peter Karlsson, <i>TeliaSonera, Sweden</i> ; and David Moro, <i>Telefónica Investigación y Desarrollo, Spain</i>	11.00-11.20	PERFORMANCE OF MMSE TURBO EQUALIZATION USING MULTI-DIMENSIONAL SINGLE PARITY-CHECK CODES IN SIMO FREQUENCY-SELECTIVE FADING CHANNELS Mehdi Bennis and Tad Matsumoto, <i>CWC, University of Oulu, Finland</i>	
11.30-11.50	MULTICAST/BROADCAST OPPORTUNITIES IN BEYOND-3G NETWORKS Francesco Meago, <i>Siemens Mobile Communications (SMC), Italy</i> ; Aurelian Bria, <i>Royal Institute of Technology (KTH), Sweden</i> ; Ingo Karla, <i>Alcatel (A-SEL), Germany</i> ; Per Magnusson, <i>Ericsson AB (EAB), Sweden</i> ; Remco Litjens, <i>TNO Information and Communication Technology, Netherlands</i> ; and Haitao Tang, <i>Nokia, Finland</i>	11.20-11.40	IMPROVED SCHEME OF OPEN LOOP TRANSMIT DIVERSITY (STTD) IN THE DS-CDMA CASE Sylvie Mayrargue, <i>CEA-LETI, France</i> and Thierry Clessienne, <i>France Télécom R&D, France</i>	
11.50-12.10	THERMAL NOISE MODULATION FOR INTRINSIC SECURE RADIO COMMUNICATIONS Luca Simone Ronga and Lorenzo Mucchi, <i>University of Florence, Italy</i>	11.40-12.00	ULTRA-WIDEBAND INDOOR CHANNEL MODELING USING TIME-VARYING AUTOREGRESSIVE PROCESS Attaphongse Taparugssanagom and Lassi Hentilä, <i>CWC, University of Oulu, Finland</i> , and Seppo Karhu <i>Telecommunication Laboratory, University of Oulu, Finland</i>	
12.10-13.00	Lunch in Datania	12.00-13.00	Lunch in Datania	

* invited paper

Wednesday 8 June

Technical Sessions

Lecture Room TS101		Lecture Room TS127		Demos
13.00-14.20	PLENARY SESSION 3			
13.00-13.40	WIRELESS NETWORK CODING: THE NEXT REVOLUTION Anthony Ephremides, <i>University of Maryland, USA</i>			
13.40-14.20	A UNIFIED VIEW OF RECEIVERS FOR CODED SIGNALS Ezio Biglieri, <i>Politecnico di Torino, Italy</i>			
14.20-14.50	Coffee in Datania	14.20-14.50	Coffee in Datania	Demo in Datania
14.50-16.50	TECHNICAL SESSION 7 Invited Session	14.50-16.50	TECHNICAL SESSION 8 Networks	
14.50-15.20	* DIAGNOSTIC METHODS - GENERAL PURPOSE TOOLS FOR CONCENTRATED SIGNAL PROCESSING Markku Juntti, Harri Saarnisaari, Johanna Vartiainen, Janne Lehtomäki and Markus Myllylä, <i>CWC, University of Oulu, Finland</i>	14.50-15.20	* EFFICIENT OPERATION OF WIRELESS PACKET NETWORKS USING NETWORK CODING Desmond S. Lun and Muriel Medard, <i>MIT - Massachusetts Institute of Technology, USA</i> and Raif Koetter, <i>University of Illinois, USA</i>	
15.20-15.50	* ULTRA WIDEBAND: APPLICATIONS, TECHNOLOGY AND FUTURE PERSPECTIVES Ben Allen, <i>King's College London, UK</i> ; Tony Brown, <i>University of Manchester, UK</i> ; Katja Schwieger and Ernesto Zimmermann, <i>University of Dresden, Germany</i> ; Wasim Malik and David Edwards, <i>University of Oxford, UK</i> ; Laurent Ouvry, <i>LETI, France</i> and Ian Oppermann, <i>CWC, University of Oulu, Finland</i>	15.20-15.50	* IS 4G TARGETTING THE FUTURE Yuri Ismailov, <i>Ericsson Research, Sweden</i> and Aruna Seneviratne, <i>NICTA - National ICT Australia, Australia</i>	
15.50-16.20	* VLSI ARCHITECTURES AND RAPID PROTOTYPING TESTBEDS FOR WIRELESS SYSTEMS Joseph R. Cavallaro, <i>Rice University, USA</i> and <i>CWC, University of Oulu, Finland</i>	15.50-16.10	ZERO-AIC HEADER COMPRESSION WITH MULTIPLE DESCRIPTION CODING FOR 4G WIRELESS NETWORKS Tatiana Kozlova Madsen, Yasushi Takatori, Frank H.P. Fitzek and Ramjee Prasad, <i>Aalborg University, Denmark</i> and Marcos Katz, <i>Samsung, Korea</i>	
16.20-16.50	* RECEIVER ANONYMITY: ANONYMOUS CHANNELS Jin Tamura, Kazukuni Kobara and Hideki Imai, <i>University of Tokyo, Japan</i>	16.10-16.30	ADVANCED HANDOVER MANAGEMENT IN AMBIENT NETWORKS Tiziana Toniatti, Francesco Meago and Alberto Periccioni, <i>Siemens, Italy</i> ; Shintaro Uno, <i>Motorola, Japan</i> ; Eranga Perera and Rokhsana Boreli, <i>NICTA - National ICT Australia, Australia</i>	
		16.30-16.50	ANALYSIS OF TCP/IP OVER WCDMA WIRELESS SYSTEMS UNDER POWER CONTROL, MAI AND LINK LEVEL ERROR RECOVERY C. Fischione, F. Graziosi and F. Santucci, <i>University of L'Aquila, Italy</i> ; N. Möller, K.H. Johansson and H. Hjalmarsson, <i>Royal Institute of Technology, Sweden</i>	
18.30-20.00	WELCOME RECEPTION AT THE CITY HALL			

* invited paper

Thursday 9 June

Cooperative Research Forum

Lecture Room TS101		Lecture Room TS127		Demos
09.00-10.00	PLENARY SESSION 4			
09.00-09.30	UPDATE ON WIRELESS WORLD RESEARCH FORUM AND LOOK AT CONVERGENCE OF DIGITAL INDUSTRIES <i>Mikko Uusitalo, Nokia Research Center, Finland and WWRF Chairman</i>			
09.30-10.00	CHALLENGES IN WIRELESS COMMUNICATIONS RESEARCH – CWC PERSPECTIVES <i>Matti Latva-aho, CWC, University of Oulu, Finland</i>			
10.00-10.30	Coffee in TS128	10.00-10.30	Coffee in TS128	Demos in TS128
10.30-12.30	SPECIAL SESSION 1 RESEARCH PARTNERS			
10.30-11.00	ADVANCED TESTING OF FUTURE WIRELESS COMMUNICATION SYSTEMS <i>Juha Ylitalo, Elektrobit Testing Ltd, Finland</i>			
11.00-11.30	TOWARDS 4G: CHALLENGES AND OPPORTUNITIES <i>Ari Hulkkonen, Elektrobit Group Plc, Finland</i>			
11.30-12.00	FUTURE NETWORKS - TRENDS FROM TEST AND MEASUREMENT POINT OF VIEW <i>Jouko Sankala, Nethawk, Finland</i>			
12.00-12.30	WHAT DO WE MEAN WHEN WE SAY CONVERGENCE <i>Heikki Ailisto, VTT Electronics, Finland</i>			
12.30-13.30	Lunch in Datania	12.30-13.30	Lunch in Datania	

Thursday 9 June

Cooperative Research Forum

Lecture Room TS101		Lecture Room TS127		Demos
13.30-15.30	SPECIAL SESSION 2 WWRF			
13.30-14.00	ULTRA WIDEBAND: TECHNOLOGY AND FUTURE PERSPECTIVES <i>Editor: Ben Allen, King's College London, UK</i>			
14.00-14.30	REAL-TIME ADAPTATION TO THE CHANNEL ALONG BROADBAND MULTI-ANTENNA TRANSMISSION CHAINS: STATE OF THE ART AND POTENTIAL <i>Volker Jungnickel, Fraunhofer HHI, Germany</i>			
14.30-15.00	MULTI-DIMENSIONAL RADIO CHANNEL MEASUREMENT AND MODELLING FOR FUTURE MOBILE AND SHORT-RANGE WIRELESS SYSTEMS <i>Editors: Tommi Jämsä, Elektrobit, Finland; Juha Ylitalo, CWC, University of Oulu, Finland; Reiner S. Thomä, TU Ilmenau, Germany and Angeliki Alexiou, Bell Labs / Lucent, UK</i>			
15.00-15.30	DUPLEXING, RESOURCE ALLOCATION AND INTER-CELL COORDINATION: DESIGN RECOMMENDATIONS FOR NEXT GENERATION SYSTEMS <i>Editor: Angeliki Alexiou, Bell Labs Wireless Research / Lucent Technologies, UK</i>			
15.30-16.00	Coffee in Datania	15.30-16.00	Coffee in Datania	

Friday 10 June

Industry Day

08.30-12.45	INDUSTRY DAY Bus tour includes visits to: - Centre for Wireless Communications, CWC 4G Lab - Elektrobit Ltd - Nokia Mobile Phones - NetHawk
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