5 - 9 DECEMBER • HOUSTON, TEXAS, USA



ENERGIZING GLOBAL COMMUNICATIONS

FINAL PROGRAM

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TECHNICAL SYMPOSIA PROGRAM-AT-A-GLANCE

Tuesday, December 6										
10:00	- 12:00	13:30 -	- 15:30	16:00 - 18:00						
AHSN01	GRB 322 A/B	AHSN04	GRB 322 A/B	AHSN07	GRB 322 A/B					
AHSN02	GRB 330 A/B	AHSN05	GRB 330 A/B	AHSN08	GRB 330 A/B					
AHSN03	GRB 332 A	AHSN06	GRB 332 A	AHSN09	GRB 332 A					
CQRM01	GRB 332 F	CQRM03	GRB 332 F	CQRM05	GRB 332 F					
CQRM02	GRB 342 A	CQRM04	GRB 342 A	CRN03	GRB 332 B					
CRN01	GRB 332 B	CRN02	GRB 332 B	CSS03	GRB 332 C					
CSS01	GRB 332 C	CSS02	GRB 332 C	CSWS03	GRB 332 D					
CSWS01	GRB 332 D	CSWS02	GRB 332 D	СТ03	GRB 332 E					
CT01	GRB 332 E	CT02	GRB 332 E	NGN03	GRB 342 A					
NGN01	GRB 342 B	NGN02	GRB 342 B	ONS01	GRB 342 B					
SAC 01	GRB 342 C	SAC03	GRB 342 C	SAC04	GRB 342 C					
SAC 02	GRB 342 D	SAC05	GRB 342 D	SAC06	GRB 342 D					
SPC01	GRB 342 E	SPC02	GRB 342 E	SPC03	GRB 342 E					
WC01	GRB 342 F	WC05	GRB 342 F	WC09	GRB 342 F					
WC02	GRB 350 D/E/F	WC06	GRB 350 D/E/F	WC10	GRB 350 D/E/F					
WC03	GRB 351 A/B	WC07	GRB 351 A/B	WC11	GRB 351 A/B					
WC04	GRB 351 D/E	WC08	GRB 351 D/E	WC12	GRB 351 D/E					
WN01	GRB 351 C/F	WN04	GRB 351 C/F	WN07	GRB 351 C/F					
WN02	GRB 350 B	WN05	GRB 350 B	WN08	GRB 350 B					
WN03	GRB 362 A	WN06	GRB 362 A	WN09	GRB 362 A					

Wednesday, December 7											
8:00 -	10:00	13:30 -	- 15:30	16:00 - 18:00							
AHSN10	GRB 322 A/B	AHSN12	GRB 322 A/B	AHSN14	GRB 322 A/B						
AHSN11	GRB 330 A/B	AHSN13	GRB 330 A/B	AHSN15	GRB 330 A/B						
CQRM06	GRB 332 F	CQRM07	GRB 332 F	CQRM08	GRB 332 F						
CRN04	GRB 332 A	CRN06	GRB 332 A	CRN08	GRB 332 A						
CRN05	GRB 332 B	CRN07	GRB 332 B	CRN09	GRB 332 B						
CSS04	GRB 332 C	CSS05	GRB 332 C	CSS06	GRB 332 C						
CSWS04	GRB 332 D	CSWS05	GRB 332 D	CSWS06	GRB 332 D						
CT04	GRB 332 E	CT05	GRB 332 E	СТ06	GRB 332 E						
NGN04	GRB 342 A	NGN05	GRB 342 A	NGN06	GRB 342 A						
ONS02	GRB 342 B	ONS03	GRB 342 B	ONS04	GRB 342 B						
SAC07	GRB 342 C	SAC09	GRB 342 C	SAC11	GRB 342 C						
SAC08	GRB 342 D	SAC10	GRB 342 D	SPC04	GRB 342 D						
SPC05	GRB 342 E	SPC06	GRB 342 E	SPC07	GRB 342 E						
WC13	GRB 342 F	WC17	GRB 342 F	WC21	GRB 342 F						
WC14	GRB 350 D/E/F	WC18	GRB 350 D/E/F	WC22	GRB 350 D/E/F						
WC15	GRB 351 A/B	WC19	GRB 351 A/B	WC23	GRB 351 A/B						
WC16	GRB 351 D/E	WC20	GRB 351 D/E	WC24	GRB 351 D/E						
WC38	GRB 362 A	WC39	GRB 362 A	WC40	GRB 362 A						
WN10	GRB 351 C/F	WN12	GRB 351 C/F	WN14	GRB 351 C/F						
WN11	GRB 350 B	WN13	GRB 350 B	WN15	GRB 350 B						

Thursday, December 8										
8:00 -	10:00	13:30 -	- 15:30	16:00 - 18:00						
AHSN16	GRB 322 A/B	AHSN18	GRB 322 A/B	AHSN20	GRB 322 A/B					
AHSN17	GRB 330 A/B	AHSN19	GRB 330 A/B	AHSN21	GRB 330 A/B					
CQRM09	GRB 332 F	CQRM10	GRB 332 F	CRN14	GRB 332 A					
CRN10	GRB 332 A	CRN12	GRB 332 A	CRN15	GRB 332 B					
CRN11	GRB 332 B	CRN13	GRB 332 B	CSWS07	GRB 332 C					
CSS07	GRB 332 C	CSS08	GRB 332 C	CT11	GRB 332 D					
СТ07	GRB 332 D	СТ09	GRB 332 D	CT12	GRB 332 E					
СТ08	GRB 332 E	CT10	GRB 332 E	CQRM11	GRB 332 F					
NGN07	GRB 342 A	NGN08	GRB 342 A	NGN09	GRB 342 A					
ONS05	GRB 342 B	ONS06	GRB 342 B	ONS07	GRB 342 B					
SAC12	GRB 342 C	SAC13	GRB 342 C	SAC14	GRB 342 C					
SPC08	GRB 342 D	SPC10	GRB 342 D	SPC12	GRB 342 D					
SPC09	GRB 342 E	SPC11	GRB 342 E	WC33	GRB 342 E					
WC25	GRB 342 F	WC29	GRB 342 F	WC34	GRB 342 F					
WC26	GRB 350 D/E/F	WC30	GRB 350 D/E/F	WC35	GRB 350 D/E/F					
WC27	GRB 351 A/B	WC31	GRB 351 A/B	WC36	GRB 351 A/B					
WC28	GRB 351 D/E	WC32	GRB 351 D/E	WC37	GRB 351 D/E					
WC41	GRB 362 A	WC42	GRB 362 A	WN20	GRB 351 C/F					
WN16	GRB 351 C/F	WN18	GRB 351 C/F	WN21	GRB 350 B					
WN17	GRB 350 B	WN19	GRB 350 B							

Energizing Global Communications

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ENERGIZING GLOBAL COMMUNICATIONS



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PROGRAM-AT-A-GLANCE

									IEEE GLOBECOM 2011													
	M	IOND.	AY.			TUESDAY WEDNESDAY USAN DOGU DOGU										п	IURSDAY		FRI	DAY		
8:00-9:30 9:3010:00	T U T R	W O R K S U	G E O S S	124011 GLOBECOM WELCOME & OPENING CEREMONY KEYNOTE: John Donovan CTO, AT&T (General Assemb) Theater) COTTE BRAS 93:01000					8:00-10:00	TECHNICAL SYMPOSIA (20)	IF&E Smart Grid Forum GRB 310A/B	IF&E IF&E IF&E IF&E IF&E IF IF					TECHNICAL SYMPOSIA (29)	IF&E Social Networking Forum GRB 310A/B	IF&E - 1.T.P. Dense Small Cell Deploy-ments in Future Radio Access Networks GRB 320A/B	IF&E - LT.P. MathWorks Comm Theory & 4G Wireless Systems (Part 2) GRB 320D/E	T U T O R	W O R K S
		0	WK						10:00-10:30			CC	FFEE BREAK 10	:00+10:30				COFFEE B	REAK 10:00+10:30		I A	0
	LS	s	S P	TECHNICAL	Exec	utive Forum o	n Cloud Comp	uting	10:30-11:00			IEEE GLOBECO	OM 2011 Best Pa	per Awards Cerem	iony			KENNOTE	maral Accombly The	inter)	LS	s
10:00-12:00	(3)	(10)	(1)	(20)		GRB 310	A/B/D/E		11:00-12:00		E	KEYNOTE - (General Assembly Theater) 10:30-11:30 Professor Laurence Mitslein Assistant Dire Ericsson Chair Professor University of California, San Diego						10:30-11:30: Pre Assistant Directo	r, CISE Directorate,	(3)	(9)	
12:00-13:30	(For V Ane	LUNC Regis Vorksh endees	H tered op Only	8	AW Lilton Americas -	ARDS LUNCH Lanier Grand Ba 12:00-13:30	:ON Il Roem (GiH/Jil	0	12:00-13:30		LUNCH BREAK										LUNCH (For Registered Workshop Attendees Only)	
13:30-15:30	ТИТО	WORK	G E O S S	TECHNICAL SYMPOSIA (20)	IF&E Undersea Cable Infrastructure (UCI) Forum GRB 310A/B	IF&E Broadband Forum 1 GRB 310D/E	IF&E - LT.P. Fujitsu GRB 310 C/F	IF&E Cloud Security Forum GRB 320A/B	13:30-15:30	TECHNICAL SYMPOSIA (20)	IF&E IPr6 Forum Session I GRB 310A/B	IF&E Access Networks Forum I GRB 310D/E	IF&E Tutorial Receivers, Transmitters, Modulation and Noise - Fundamentals GRB 310 C/F	IF&E Medical Communications: Technologies & Challenges GRB 320A/B	IF&E - LT.P. National Instruments Test Bed Framework GRB 320D/E	IF&E - 1.T.P Next Gen: Emergency Communications GRB 320 C/F	TECHNICAL SYMPOSIA (20)	IF&E Next Gen. Services Overlay Net Forum GRB 310A/B	IF&E - LT.P. Cyber Security GRB 320A/B	IF&E - I.T.P. National Instruments Test Bed Framework GRB 320D/E	T U T O	W O R K
15:30-16:00	R	H				COFFEE BREAD	ζ		15:30-16:00				COFFEE BRE/	ΛK	· · · · ·			COF	FEE BREAK		R	H
16:00-18:00	A L S (3)	O P S (10)	К S P (1)	TECHNICAL SYMPOSIA (20)	IFa Broadbani GRB 3	&E d Forum II HOD/E	IF SDR I GRB :	&E Forum 1 320A/B	16:00-18:00	TECHNICAL IF&E IF&E IF&E IF&E IF&E IF&E IF&E IF&E					TECHNICAL SYMPOSIA (20)	IF&E SDR Forum II GRB 320A/B	IF&E NASA on Space GRB :	+ LT.P. Power Efficiency 310A/B	A L S (3)	O P S (9)		
EVENING	WI RE: E O! 19	ELCO CEPT XHIB PEND :30-22	ME TON IT NG 500		G	OLD RECEPTIO GRB 310 C/F 17:30-19:30	N		EVENING	G CONFERENCE BANQUET Hilton Americas - Lanier-Grand Ball Room (G/IU/Rs) 19:00-23:00												

PATRONS



Energizing Global Communications





General Chair Lee Roy F. Gaspard, Jr., Shell IT International, Inc., USA



Workshop Co-Chair Jiangzhou Wang, University of Kent, UK



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Chinese Academy of



Keynote Speakers Co-Chair Haohong Wang, Cisco Systems, USA



Local Arrangements Co-Chair Kerim Koseoglu, Aramco Services Company, USA



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Exhibition Co-Chair / **GIMS** Advisor Steve Bourg, Crescent Consultants, Inc., USA



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Tutorial Co-Chair / GITC Advisor Abbas Jamalipour, University of Sydney, Australia



Vice-Chair University, USA



Student Travel Grants Chair Wenye Wang, North Carolina State University, USA



Tutorial Co-Chair Jiang (Linda) Xie, University of North Carolina, Charlotte, USA



Executive Forum Chair Johan Krebbers. Shell International, B.V., Netherlands



Publicity Chair Qinghe Du. Xian Jiao Tong University, China



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EEE Global Communications Conference

Industry Forums Dhadesugoor R. Vaman, Prairie View A&M



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Cognitive Radio

Natasha Devroye,

University of Illinois,

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Networks Symposium



Communication Theory Symposium Co-Chair Riccardo Raheli, University of Parma, Italy

Communication

Co-Chair

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Hopkins University, USA

Communications and

System Security



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Next Generation

Symposium Co-Chair

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Networking

Anwar Walid,



Ad Hoc and Sensor Networking Symposium Co-Chair Jiming Chen, Zhejiang University, China



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Symposium Co-Chair Yi Qian, University of Nebraska - Lincoln, USA

Communications and

System Security Symposium Co-Chair Xinwen Fu. University of Massachusetts Lowell, USA



Next Generation Networking Symposium Co-Chair Zhenghao Zhang, Florida State University, USA

Next Generation

Symposium Co-Chair

College of William and

Networking

Qun Li.

Marv. USA



Communication Multimedia Applications Symposium Co-Chair Pascal Lorenz, University of Haute Alsace,

Marcus Brunner,

Communication

Zhi (Gerry) Tian,

Co-Chair

USA

Theory Symposium

Michigan Tech University,

NEC Lab Europe, Germany

France



Communications and



Illinois Institute of Technology, USA



Optical Networks and Systems Symposium Co-Chair Maode Ma Nanyang Technological University, Singapore



Optical Networks and Systems Symposium Co-Chair Mounir Hamdi, Hong Kong University of Science and Technology, Hong Kong



Cognitive Radio Networks Symposium Co-Chair F. Richard Yu. Carleton University, Canada



Communication Theory Symposium Co-Chair Ali Ghrayeb, Concordia University, Canada



QoS, Reliability, and Modeling Symposium Co-Chair Stefano Giordano, University of Pisa, Italy



Optical Networks and Systems Symposium Co-Chair Vinod Vokkarane, University of Massachusetts. Dartmouth, USA

Communication Software, Services, & Multimedia Applications Symposium Co-Chair

Communications and System Security Symposium Co-Chair Dijiang Huang,

Arizona State University, USA

Communications QoS, Reliability, and Modeling Symposium Yu Cheng, Illinois Institute







Ad Hoc and Sensor Networking Symposium Co-Chair Sidi-Mohammed Senouci, USA Orange Labs, France



Ad Hoc and Sensor Networking Symposium Co-Chair Damla Turgut, University of Central Florida. USA



Ad Hoc and Sensor

Networking

Symposium

Jalel Ben Othman.

Cognitive Radio

Versailles University, France

Networks Symposium

University of California,

Co-Chair

Co-Chair

Qing Zhao,

Davis. USA



Ontario, Canada

Communication

Xianbin Wang,

Software, Services, &

Symposium Co-Chair

Multimedia Applications

University of Western Software, Services, &





Optical Networks and Systems Symposium Co-Chair Jong-Dug Shin, Soongsil University, Korea



Wireless Communications Symposium Co-Chair Xinbing Wang, Shanghai Jiaotong

University, China



Wireless Networking Symposium Co-Chair Shiwen Mao, Auburn University, USA



Selected Areas in Communications Symposium Satellite & Space **Communications Track** Chair Igor Bisio, University of Genoa, Italy



Signal Processing for Communications Symposium Co-Chair Yunxin (Jeff) Li, NICTA, Australia



Wireless Communications Symposium Co-Chair Tony Quek, Institute for Infocomm Research, Singapore



Wireless Networking Symposium Co-Chair Chonggang Wang, InterDigital Communications, USA



Access Network Track **Track Chair** Xavier Fernando, **Ryerson Communications** Research Lab, Canada



Signal Processing for Communications Symposium Co-Chair Hung Nguyen, The Aerospace Corporation, USA



Wireless Communications Symposium Co-Chair Vincent Wong, University of British Columbia, Canada



Wireless Networking Symposium Co-Chair Sunghyun Choi, Seoul National University, Korea



Power Line **Communications Track Track Chair** Ralf Lehnert, Dresden University of Technology, Germany



Signal Processing for Communications Symposium Co-Chair Nallanathan Arumugam, King's College London, UK



Wireless Communications Symposium Co-Chair Wei Song, University of New Brunswick, Canada



Wireless Networking Symposium Co-Chair Jian Tang, Syracuse University, USA



Data Storage Track **Track Chair** Alexandros Dimakis, University of Southern California, USA



Wireless Communications Symposium Co-Chair Daji Qiao, Iowa State University USA



Wireless Communications Symposium Co-Chair Matti Latva-Aho, University of Oulu, Finland



Selected Areas in Communications Symposium **Green Communication** Systems and Network Track **Track Chair** Jaafar M.H. Elmirghani, University of Leeds, UK



Social Networks Track **Track Chair** Neeli Prasad, Aalborg University, Denmark



WELCOME MESSAGE FROM THE GENERAL CHAIRS



Howdy!

It is our great pleasure to invite you to attend the IEEE Global Communications Conference in Houston, TX, USA.

Lee Roy F. Gaspard, Jr

Ross Anderson

Themed "Energizing Global Communications," IEEE GLOBECOM 2011 Global Communications Conference and Exhibition and Industry Forum entails the delivery and presentation of 1,070 technical symposia papers, 11 tutorials, 19 workshops, panels of experts, and industry related forum and presentations as a comprehensive technical and educational agenda. Additionally, IEEE GLOBECOM 2011 has expanded the agenda of its 54th annual event to be held from December 5 - 9 in Houston, Texas with the introduction of the new Industry Forum & Exposition designed specifically to further the real-world (practitioner's) telecommunications knowledge. The conference program is most inclusive for industry professionals, academics, researchers, scientists, and government officials.

John Donovan, Chief Technology Officer of AT&T; Dr. Laurence B. Milstein, Ericsson Chair Professor of the University of California at San Diego; John Elbon, Vice President and General Manager, Space Exploration at Boeing; and Dr. Farnam Jahanian, Assistant Director and CISE Directorate, of NSF are the compelling keynote speakers complementing an outstanding technical symposia and Industry Forums.

We have also dedicated ourselves to making IEEE GLOBECOM 2011 the ideal networking and growth experience for professionals serving nearly every communications area, no matter their expertise. Our goal is to provide each attendee with a forum that offers unrivalled educational value and superior personal networking, idea exchange, and career-advancement opportunities. For instance, the conference's Industry Forums will provide broad-interest programming focused on the telecommunication industry's latest innovative technology implementations, complex IT business systems, regulatory impact assessments, economic models, and engineering methods used by industry practitioners. In addition, the Executive Forum will offer numerous insights into challenges and strategies currently confronting today's industry.

Each year, IEEE GLOBECOM seeks to build on the success of the previous year's event by highlighting the newest developments and achievements. We built our 2011 agenda with presentations that not only showcase next-generation research, but also methodologies that will solve societal communication problems on an international level. 'Energizing Global Communications' is the driving force behind the thoughts, ideas and leadership that are continuing to shape the global communications community and industry.

As Chairs, we wish to thank members of the Organizing Committee, the Technical Program Committee, ComSoc staff members, Conference presenters and speakers, and the many other volunteers who have worked tirelessly preparing to host this conference. We collectively look forward to when you arrive in Houston to participate in the IEEE GLOBECOM 2011 Conference.

We welcome you to visit the conference website, www.ieee-globecom.org, for program details, registration information and/or to network with colleagues or other attendees via Twitter, Facebook, LinkedIn.

We look forward to seeing you at IEEE GLOBECOM 2011.

Lee Roy F. Gaspard, Jr. General Chair IEEE GLOBECOM 2011 Shell IT International, Inc., USA

Ross Anderson Vice Chair IEEE GLOBECOM 2011 IEEE ComSoc, USA

MESSAGE FROM THE TECHNICAL PROGRAM CHAIR



Xi Zhang

On behalf of the Technical Program Committee, I would like to welcome you to the 54th Annual IEEE Global Telecommunications Conference, themed "Energizing Global Communications", held in Houston the Energy Capital City of the United States.

IEEE GLOBECOM 2011 will showcase a technical program consisting of 12 symposia on special topics, keynote speeches, tutorials and workshops covering many exciting aspects of telecommunications and new emerging technologies. This year we received 2,923 paper submissions, out of which 1,070 papers have been accepted with an average acceptance rate of 36.61%. The final technical symposia program is the result of a rigorous review process, with each paper received at least three reviews from the respective research community. We also received 47 tutorial and 33 workshop proposals, among which 11 tutorial and 19 workshop proposals have been accepted. The papers for the technical symposia will all be orally presented with lecture style in 179 technical sessions. All accepted papers for oral presentations will be published in the conference proceedings.

I would like to express my sincere appreciation and thanks to all the symposia, tutorial, and workshop co-chairs, the technical program committee members, and the external reviewers for their great efforts in the paper review process. I would like to thank all the authors who submitted their papers to IEEE GLOBECOM 2011. I would also like to thank the IEEE GLOBECOM 2011 Executive Committee for its full support. Special thanks to Lee Roy F. Gaspard, Jr., General Chair; Ross Anderson, Vice General Chair; Abbas Jamalipour, GITC Advisor; and Weihua Zhuang, Symposia Chair; who gave their strong supports to IEEE GLOBECOM 2011 Technical Programs.

I look forward to seeing you all in Houston!

Xi Zhang

Texas A&M University, USA Technical Program Committee Chair IEEE GLOBECOM 2011

KEYNOTE SPEAKERS

Tuesday, 6 December 2011 • 8:30 – 9:30 • Room: GRB General Assembly A/B/C Chair: Lee Gaspard, Shell, USA



John Donovan

Chief Technology Officer, AT&T

Mobile Innovation: Advancing the Mobile Broadband Experience

The future of communications will be driven by mobility, and specifically innovations on three fronts: Network and Cloud, Integrated Software and Devices and User Interfaces. The cumulative experience of advances in these areas will weave mobile communications even more tightly into the fabric of our global economy and our daily lives. John Donovan will show applications and devices that AT&T is working on today in its labs and innovation centers that illustrate the industry developments it's helping to drive. He'll close by sharing his vision for where these developments will take the enterprise and consumer mobile broadband experience in 2020 and beyond.

Biography: Mr. Donovan is chief technology officer for AT&T. In this role, he oversees the company's global technology direction and innovation road map, including product development, network and engineering operations, AT&T Labs and the security and intellectual property organizations.

Mr. Donovan previously was executive vice president of product, sales, marketing and operations at Verisign Inc., a technology company that provides Internet infrastructure services. At VeriSign, Mr. Donovan was responsible for leading VeriSign's global sales organization, driving the expansion of broad solutions offerings, and integrating a global professional services capability.

Before that, he was chairman and CEO of inCode Telecom Group Inc., where he helped shape strategic direction and positioning for wireless network operators around the globe. Previously, Mr. Donovan was a partner with Deloitte Consulting, where he was the Americas Industry Practice director for telecom. He is chairman of the board of the Alliance for Telecommunications Industry Solutions (ATIS), and is a director on the board of The Wholesale Applications Community (WAC).

He has authored two books, The Value Enterprise, published in January 1998, and Value Creating Growth, published in 1999. Donovan received a B.S.E.E. from the University of Notre Dame and earned an M.B.A. in finance from the University of Minnesota.



Wednesday, 7 December 2011 • 11:00 – 12:00 • Room: GRB General Assembly A/B/C Chair: Xi Zhang, Texas A&M University, USA

Laurence B. Milstein

Ericsson Chair Professor, University of California, San Diego

PHY-APP Cross-Layer Design for Mobile Video

This talk will focus on cross-layer design for mobile video transmission, and is motivated by the tremendous demands that video users have placed on the capacity of wireless networks in recent years. The emphasis is on joint optimization of the physical and application layers for levels of mobility ranging from fixed wireless to vehicular speeds. The basic philosophy of the cross-layer design is first discussed, and then various examples are presented for both scalable and non-scalable video. These examples include the joint optimization of single-carrier MIMO systems in conjunction with motion-compensation techniques for scalable video, and OFDM-based video-slice to subcarrier-mapping techniques for nonscalable video. Metrics for evaluation of the usefulness of the cross-layer approach will include both the performance of individual users and the capacity gain of multiplexed users.

Biography: Laurence B. Milstein (S66, M68, SM77, F85) received his B.E.E. degree from the City College of New York, NY, in 1964, and his M.S. and Ph.D. degrees in electrical engineering from the Polytechnic Institute of Brooklyn, NY in 1966 and 1968, respectively.

From 1968 to 1974, he was with the Space and Communications Group of Hughes Aircraft Company, and from 1974 to 1976, he was a member of the Department of Electrical and Systems Engineering, Rensselaer Polytechnic Institute, Troy, NY. Since 1976, he has been with the Department of Electrical and Computer Engineering, University of California at San Diego, La Jolla, where he is the Ericsson Professor of Wireless Communications Access Techniques and former Department Chairman, working in the area of digital communication theory with special emphasis on spread-spectrum communication systems. He has also been a consultant to both government and industry in the areas of radar and communications.

Dr. Milstein was an Associate Editor for Communication Theory for the IEEE Transactions on Communications, an Associate Editor for Book Reviews for the IEEE Transactions on Information Theory, an Associate Technical Editor for the IEEE Communications Magazine, and the Editor-in-Chief of the IEEE Journal on Selected Areas in Communications. He has been a member of the board of governors of both the IEEE Communications Society and the IEEE Information Theory Society, and was the Vice President for Technical Affairs in 1990 and 1991 of the IEEE Communications Society. He is also a former Chair of the IEEE Fellows Selection Committee, and is a recipient of the 1998 Military Communications Conference Long Term Technical Achievement Award, an Academic Senate 1999 UCSD Distinguished Teaching Award, an IEEE Third Millennium Medal in 2000, the 2000 IEEE Communication Society Armstrong Technical Achievement Award and various prize paper awards.

Energizing Global Communications

KEYNOTE SPEAKERS

Thursday, 8 December 2011 • 10:30 – 11:15 • Room: GRB General Assembly A/B/C Chair: Mahmoud Daneshmand, AT&T, USA



Farnam Jahanian

Assistant Director, CISE Directorate, NSF

Innovating for Society: Realizing the Promise of Computing and Communications

The computing discipline is at the center of an ongoing societal transformation. The explosive growth of scientific and social data, wireless connectivity at broadband speeds for billions of mobile endpoints, and seamless access to computational resources in the "cloud" are transforming the way we work, learn, play, and communicate. Advances in computation and data-enabled techniques will continue to accelerate the pace of scientific discovery and engineering innovation, with the impact becoming more pervasive throughout society for decades to come.

We can envision a day where static infrastructure, such as buildings or factories, have been transformed into smart spaces that continuously adapt to consumption, growth, usage, and environmental stimuli through the use of networked instrumentation and distributed software control. We can imagine improved quality of life through personalized healthcare and assistive technologies, enabled in part by robust, usable, and trustworthy wearable mobile devices integrated with instrumented environments. We can anticipate that during a time of natural disaster or national emergency, unmanned search, rescue, and recovery will save lives and minimize loss through the use of autonomous, highly coordinated, and remotely

operated robotic systems. By developing rich ecological and environmental distributed monitoring systems, we can create accurate models that support forecasting and management of increasingly stressed watersheds and ecosystems. These are just a few examples of advances that promise to reshape our world with more responsive, precise, and scalable systems to augment human capabilities, work in dangerous or inaccessible environments, provide large-scale and distributed coordination, and enhance societal well-being.

I will focus my talk on some of the technological and societal trends that are shaping our future and providing new opportunities for foundational research. I will further explore how these advances serve as key drivers of economic competitiveness and how they will be crucial to achieving national priorities in environmental sustainability, smart transportation, education and life-long learning, and national security.

Biography: Farnam Jahanian leads the National Science Foundation Directorate for Computer and Information Science and Engineering (CISE). He is on leave from the University of Michigan, where he holds the Edward S. Davidson Collegiate Professorship and served as Chair for Computer Science and Engineering from 2007 – 2011 and as Director of the Software Systems Laboratory from 1997 – 2000. His research on Internet infrastructure security formed the basis for the Internet security company Arbor Networks, which he co-founded in 2001. He served as Chairman until its acquisition by Tektronix Communication in 2010.

Dr. Jahanian guides CISE, with a budget of over \$600 million, in its mission to uphold the nation's leadership in computer and information science and engineering through its support for fundamental and transformative advances. Dr. Jahanian is also co-chair of the Networking and Information Technology Research and Development (NITRD) Subcommittee of the National Science and Technology Council Committee on Technology, providing overall coordination for the activities of 14 government agencies.

Dr. Jahanian holds a master's degree and a Ph.D. in Computer Science from the University of Texas at Austin. He is a Fellow of the Association for Computing Machinery (ACM), the Institute of Electrical and Electronic Engineers (IEEE) and the American Association for the Advancement of Science (AAAS).

INDUSTRY FORUMS • TUESDAY

		TUESDAY 6 December				WEDNES 7 Decen	THURSDAY 8 December	
8:00-9:30		WELCOME & KEYNOTE		8:00-10:00	Smart Grid ITS		ITS	Social Networking
9:30-10:00	(OFFEE BREA	K					
				10:00-10:30		COFFEE E	COFFEE BREAK	
10:00-12:00	Executive F	Forum on Cloud	Computing	10:30-12:00		KEYNC	KEYNOTE	
12:00-13:30	AW	ARDS LUNCH	EON	12:00-13:30	LUNCH BREAK			LUNCH BREAK
13:30-15:30	UCI Broadband Cloud II Security			13:30-15:30	IPv6 I	Access Networks	Medical Communication	NGSON
15:30-16:00	C	OFFEE BREA	к	15:30-16:00	COFFEE BREAK			COFFEE BREAK
16:00-18:00	Cyber Broadband SE		SDR I	16:00-18:00	IPv6 II	Access Networks II	Knowledge Management	SDR II

Tuesday, 6 December 2011 • 10:00 – 12:00 • Room: GRB 310 A/B/D/E Executive Forum on Cloud Computing

Organizer: Johan Krebbers, Shell International, B.V., Netherlands

Executive Forum on Cloud Computing presents forward looking and innovative ideas and practices, industry challenges, industry direction, industry needs to the Global Communications community. The Global Community is challenged for action as a whole to address identified opportunities. Cloud computing represents a new frontier in the confluence of computing, networking, and software systems. The underlying global deployment of Cloud computing resources and services and the un-bounded global service demand represent grand opportunities for Cloud Computing customers and new challenges to service providers. Cloud Computing Forum speakers are industry leaders who can paint/ integrate a futuristic vision of technology, industry/ market solutions, and business systems and application to solve business, society, or governmental needs.

Moderator: Johan Krebbers, Shell International, B.V., Netherlands Panelists: Kazuhiro Gomi, CEO & President, NTT America Hossein Eslambolchi, Chairman & CEO, 2020 Venture Partners LLC

Tuesday, 6 December 2011 • 13:30 – 15:30 • Room: GRB 310 A/B Undersea Cable Infrastructure (UCI) Forum The Key for Global Infrastructure Resiliency Organizers: Spilios E. Makris, Nick Lordi, and Arun Handa, Telcordia Technologies, USA

In December 2006, a series of undersea cable outages after an earthquake near Taiwan led to significant disruptions to international communications. These disruptions were widespread and large enough to cause a substantial shortage of international bandwidth and significant network congestion as traffic was rerouted to the remaining operating undersea cable systems.

This industry forum will:

- Explore the major issues facing service providers and large enterprise networks, such as global financial institutions, as they seek ways to ensure a diverse, resilient end-to-end global infrastructure, as well as how their suppliers are helping them face these challenges.
- Identify and understand potential geographic vulnerabilities as a precursor to a comprehensive vulnerability assessment of the ones undersea cable infrastructure, consisting of cable landing stations, cable segments and supporting infrastructure.
- Discuss diversity, which is often limited at cable landing stations and deep sea cable paths.

Specifically,

- How can a service provider or financial institution ensure global diversity for their physical and logical paths?
- How can other assets, such as telecommunications "hotels" be used to enhance undersea cable infrastructure diversity?
- How do you mitigate risk, with diverse physical routes, logical routes, data back up sites, and in what combination?

 Identify potential undersea cable infrastructure mitigation strategies in conjunction with industry and the challenges associated with the implementation of such strategies is a crucial first step in mitigating risk.

In particular,

- How does one "build in" resiliency to your network assets?
- What assets could one use, from a service provider and equipment vendor, to facilitate resiliency?
- Discuss recent efforts at the Alliance for Telecommunications Industry Solutions (ATIS) Performance, Reliability, and Quality Committee (PRQC) to standardize metrics in an effort to ensure robust UCI and the end-to-end integrity of the global telecommunications network infrastructure and explore how we could leverage that PRQC work to promote international adoption of UCI-related ATIS Standard?

Moderator: Nick Lordi, Chief Scientist, Telcordia Technologies, USA

Panelists:

Ronald J. Rapp, Director, Cable Engineering and Technology, TE SubCom Peter Cornell, Vice President, Global Network Field Operations, AT&T Alasdair Wilkie, Director, Marine & Projects, Hibernia Atlantic Andy Yates, Global Head of Network Architecture, Internal Technology, NYSE Euronext

Tuesday, 6 December 2011 • 13:30 - 15:30 • Room: GRB 310 D/E

Broadband Forum II PON Solutions - Platform for Multi-service Excellence

Organizer: George Dobrowski, Senior Analyst, Huawei, USA; Board of Directors, Broadband Forum

Fiber based access solutions have increased the broadband reach into uncharted territories. As today's fasting growing broadband access technology, fiber demands new standards, tools and creative solutions to help contain the costs and headaches of deployments. Rarely simple, fiber deployments frequently are a mix of hybrid xDSL/PON solutions. Service Providers look to the industry to define a common architecture and management platform to ensure cost effective rollouts, equipment options and capable service management. This Forum will focus on:

- Latest in GPON/EPON standards, conformance/certification and interoperability
- Network management tools and architecture options
- Hybrid Network solutions
- TR-069 PON device management
- Moderator: George Dobrowski,

Senior Analyst, Huawei, USA; Board of Directors, Broadband Forum

Panelists:

Energizing Global Communications

Christophe Alter, Orange France Telecom, Broadband Forum Technical Committee Chair Greg Bathrick,

Director Business Development, PMC-Sierra; Co-Chair Broadband Home

Tuesday, 6 December 2011 • 13:30 – 15:30 • Room: GRB 320 A/B Cloud Security Forum Is Cloud Computing a Trusted Computing? Organizer: David Wei, Fordham University, USA

Cloud computing is an innovative Internet-based computing paradigm that enables application software to be delivered as services over the Internet. Cloud users are thus able to move out their data and software to a remote Cloud to deploy scalable and elastic service on demand with no need of provisioning a data center. This cost-effective computing paradigm removes the need for service providers to plan ahead for provisioning and allows companies to start small and then increase computing or storage resources only when there is a need. However, as the users' data and software are outsourced to centralized massive data centers, IT security specialists warn that Cloud is becoming particularly attractive to cyber crooks. As a matter of fact, cloud security has been cited as the top concern by the cloud users. Service availability and data confidentiality have been the top concerns among those cloud computing security issues. However, on the other hand, due to the needed extra computing, security controls often incur a certain amount of performance degradation in cloud computing where performance is crucial and its computation and communication complexities are already high. This poses challenges to the system developers to preventing privacy leaks, performing data auditing, and guaranteeing high availability in the face of different security attacks. In fact security issues may drive how we define and develop cloud computing solutions.

There have been a few studies investigating the fundamental properties of the cloud security issues, but a great deal of work still remains to be done. We thus provide this forum for the discussion of recent research results on a broad range of topics relevant to cloud security, including data auditing, searchable data encryption, hypervisor protection, cloud forensics, disaster recovery, just to name a few.

Moderator: David Wei, Fordham University, USA

Panelists:

Roxana Geambasu, Columbia University, USA Pak-Ching Lee, Chinese University of Hong Kong, China James Hughes, Huawei Technologies Mooi Choo Chuah, Lehigh University, USA Vinod Vaikuntanathan, University of Toronto, Canada

Tuesday, 6 December 2011 • 16:00 – 18:00 • Room: GRB 310 D/E Broadband Forum I Obtaining the Full Potential of xDSL Organizer: George Dobrowski,

Senior Analyst, Huawei, USA; Board of Directors, Broadband Forum

xDSL is an access technology that empowers broadband to reach more people worldwide than any other technology. With good stability, proactive management tools, multiple speed and configuration options, today's xDSL based network continues to evolve with the ever-changing needs of the user. In this session, we will explore the latest techniques to achieve the rate, reach and QoS goals of today's progressive providers.

Topics covered will include:

- VDSL2 and ADSL2plus testing and interoperability
- · Bonding and Vectoring
- Hybrid xDSL/fiber solutions including the new G.hn technology using reverse power feed and the need for addressing electrical safety requirements
- DSL Quality Suite -ensuring more than speed
- TR-069—management capabilities reaching beyond the gateway may drop this pending potential speakers

Moderator: George Dobrowski,

Senior Analyst, Huawei, USA; Board of Directors, Broadband Forum Panelists:

Russ Gundrum, Project Manager, AT&T

Ernie Gallo, Project Manager for Product Development, Telcordia Technologies Amir Fazlollahi, Principal Engineer, Futurewei Technologies, USA

Tuesday, 6 December 2011 • 16:00 – 18:00 • Room: GRB 320 A/B SDR Forum I

Software Defined Radio/Cognitive Radio Technology for Public Safety/Homeland Security

Organizer: Fred Frantz, Director, National Law Enforcement and Corrections Technology Communications Center of Excellence (COE)

There are a number of challenges faced by developers and users of public safety/homeland security communications systems today. There are interoperability challenges caused by incompatible radio systems; limited spectrum available to accommodate rapidly growing communications requirements (such as real-time video to/from police cars and mobile command centers), rapidly evolving technologies, typically within a fiscally challenging environment. Software defined radio and cognitive radio technology (SDR/CR) has the potential to significantly address these challenges. Already SDR-based multiband radios are changing and enhancing approaches to achieving interoperability, and cognitive, reconfigurable radios can provide significant flexibility that is critical for communications needed to manage a rapidly evolving incident.

The objective of this forum is to highlight public safety/homeland security communications requirements, identify opportunities for application of SDR/CR technology in addressing those requirements, leverage SDR/CR research and development that originated to address other requirements (such as defense and commercial requirements), and identify areas where additional research is needed.

Moderator: Fred Frantz, Director, National Law Enforcement and Corrections Technology Communications COE

Panelists:

P. Allan Sadowski, IT Manager, North Carolina State Highway Patrol Tom Sorley, Deputy Director for Radio Communications Services, City of Houston Allen B. MacKenzie, Associate Professor, Wireless at Virginia Tech

Wednesday, 7 December 2011 • 8:00 – 10:00 • Room: GRB 310 A/B Smart Grid Forum

Standards, Technologies, and Platforms for Emerging Smart Grid Deployments

Organizer: Stan McClellan, Texas State University, USA

This panel will explore issues related to deployment of industry-standard platforms, control and system management technologies, and the status of communication standards & cyber-security in the emerging Smart Grid. The emphasis on speedy deployment of Smart Grid infrastructure has resulted in competing standards, interoperability issues, and complex architectural paradigms. As a result, modern usage of the grid is exposing difficulties that conventional Smart Grid technologies may be ill-equipped to handle. The panelists will present viewpoints which stem from real-world deployment of mission-critical infrastructure including Smart Grid systems, unique perspective on grid stability and/or security, particularly pertaining to mobile systems, platform or technology implementation, and standardization issues.

Sample Key Questions/Issues to be explored:

- How do conventional network & system management technologies intersect with Smart Grid systems?
- What is the role of industry-standard platform and networking technologies in the Smart Grid?
- What issues do Smart Grid systems face in terms of national, regional, or international standardization?
- What are the dominant perspectives in various competing standards influences?
- How do user-driven or demand-control systems affect the stability and operation
- of the Smart Grid, and which technologies are most prevalent in that arena? • What are the requirements of end-to-end, integrated management for the
- provision of secure Smart Grid systems?Do conventional network security paradigms fall short in the unique case of Smart Grid systems?

Moderator: Stan McClellan, Texas State University, USA Panelists:

Don Shaver, Fellow, Texas Instruments, on "Status & Evolution of Smart Grid Standards"

Jim Lansford, Architect, CSR Technology, on "A Pragmatic View of Wireless Standards for "Smart Stuff"

IEEE Global Communications Conference

Ken Laberteaux, Senior Principal Scientist, Toyota Research Institute – North America, on "Vehicle-Grid interactions: Opportunities and Challenges" **Phil Powell**, Director, Conservation & Load Management Research, Dominion Virginia Power, on "The Engineering App: Making the Grid do Something Smart now that you have a Smart Grid"

Robert Peterson, Engineering Manager, Pedernales Electric Cooperative, on "Requirements for Effective Smart Grid Implementation"

Wednesday, 7 December 2011 • 8:00 – 10:00 • Room: GRB 310 D/E Intelligent Transportation Systems (ITS) Forum Advanced Communications Technologies and Applications for ITS Organizers: David Wei, Fordham University, USA Kshirasagar Naik, University of Waterloo, Canada Teruo Higashino, Osaka University, Japan

Road transportation is playing an important role in the rapid development of economy and society. The three basic costs of a transportation system can be succinctly represented as delay, money, and loss of lives. In order to reduce the costs in a transportation system, it is important to provide drivers useful information so that they can make the best decisions in terms of their route, their speed, and so on. There have been fragmented efforts at providing assistance to motorists in the form of automatic toll collection and GPS (global positioning system) assisted driving. However, such systems are largely static, in the sense that actual road conditions have no impact on the quality of routes they produce. A novel concept in the form of an Intelligent Transportation System (ITS), based on wireless communications, the Internet, the GPS, and sensor networks, is gradually emerging to take a shape. The central idea in an ITS system is to deliver useful information to all kinds of motorists, such as ordinary car drivers, drivers of emergency vehicles, drivers of transit vehicles, drivers of service vehicles, and the police. Useful information to motorists involve physical conditions of road segments, traffic conditions along road segments, roadblocks including accidents and repair works, and availability of services along their paths, to name a few. An ITS system is expected to shorten driving time, make driving safe, make availability of medical assistance and other helps quicker, assist law enforcement, and contribute to a better environment.

Given the vast expanse of an ITS system and the seemingly large cost of deploying such a system, it is important that different parties cooperate in such an endeavor. Several governments or organizations around the world, including the U.S. Department of Transportation, the Vehicle, Road and Traffic Intelligence Society of Japan, and ERTICO of ITS Europe have defined their own ITS architecture. Those initial thrusts on ITS have motivated researchers and engineers to identify key problems that must be addressed for an ITS system to be successful. There have been ongoing research on different aspects of ITS systems, but a great deal of work still remains to be done. The goal of this forum is to provide an open discussion for the recent research results on a broad range of topics relevant to ITS architecture, network support, communication-based information technologies, and application development.

The proposed speakers will be experts from academic institutions, automobile makers, electronics and telecommunications firms, and government agencies involved in the research, development and design of ITS technologies.

Moderators: David Wei, Fordham University, USA Teruo Higashino, Osaka University, Japan

Panelists:

Hiroshi Shigeno, Keio University, Japan Fredrik Tufvesson, Lund University, Sweden Russell Hsing, Telcordia Technologies, USA Shinichi Takeda, Central Japan Railway, Japan Javier Gozalvez, UWICORE Laboratory, University Miguel Hernandez of Elche, Spain

Wednesday, 7 December 2011 • 13:30 - 15:30 (Session I); 16:00 - 18:00 (Session II) • Room: GRB 310 A/B IPv6 Forum The BIG SHIFT to the IPv6 INTERNET

Organizer: Latif Ladid, President IPv6 Forum

On February 3, 2011, the IANA (Internet Assigned Numbers Authority-www.iana.org) has allocated the last IP address blocks from the global IPv4 central address pool, ending all debates over when this would happen. Several months remain before

Regional Registries consume all their remaining regional IPv4 address pools, with recent trends suggesting that Asia, Europe, and North America will exhaust in that order within a month or two on either side of July 1, 2011.

"The Internet has become the global communication network, now is the time to sustain its growth and stability by integrating IPv6. IPv6 adds great value to IPv4" states Dr. Vint Cerf, Honorary Chair, IPv6 Forum.

The eventuality of this day was foreseen by the IETF almost 20 years ago, and a replacement was developed. In 1999 the IPv6 Forum was established by the IETF IPv6 Task Force with the mission to educate and promote the new protocol, and now that we have reached the end of the IPv4 free pool, that mission is more urgent than ever. The IPv4 based Internet will not stop working, but it will stop growing, while the IPv6 based Internet is designed to grow for generations to come.

In our daily lives, failure of the Internet infrastructure or restrictions on its capabilities to add new users or support the worldwide economy are no longer acceptable. Therefore, the IPv6 Forum recommends to all people involved in ICT, that now is the time to leverage 2011 and 2012 for planning and rolling out the new version of the Internet Protocol. Enabling IPv6 in all ICT environment is not the end game but is now a critical requirement for continuity in all Internet business and services going forward. Production quality deployments will take time, starting late and accelerating the process will compromise quality and significantly raise the costs. The last thing that everyone should avoid is to have to rapidly deploy an unnecessarily costly IPv6 infrastructure to sustain growth and communicate with customers, suppliers, and partners.

Transition planning and adoption of IPv6 is now critical to the on-going stability and growth of Internet Protocol based ICT, not only in the public Internet but in every facet of your office, home and mobile electronic existence where TCP/IP and other IP protocols are used. Training, management, support, billing, security and applications development need to be engaged to allow you to be IPv6 ready.

This call is more critical to developing nations that strive to modernize their critical Internet infrastructure making it future proof and protecting their investments.

Session I: The IPv6 Transition Models & Benefits Moderator: Latif Ladid, President IPv6 Forum

Panelists:

Ron Broersma, Chief Engineer, Defense Research and Engineering Network (DREN), on "Experiences with Deployment of IPv6 into Production Networks"

Scott Hogg, Director, Global Technology Resources, Inc. Chair, Rocky Mountains IPv6 Task Force, on "IPv6 Security for Broadband Access, Wireless and ISPs" Stan Barber, Chair, Texas IPv6 Task Force, on "IPv6 in the Real World: Running an

IPv6-enable Web Site" Yanick Pouffary, IPv6 Forum Fellow; Chair, IPv6 Ready & Enable Programs, on "The IPv6 Benefits - Explained by one the original IETFers"

Session II: The IPv6 Drivers & Applications Moderator: Latif Ladid, President IPv6 Forum

Panelists:

Energizing Global Communications

Yurie Rich, CTO, Nephos6, on "Scalability - Why the Smart Grid needs IPv6" Stephan Lagerholm, Co-Chair, Texas IPv6 Task Force, on "IPv6 in LAN Environments"

John Loughney, Principle Engineer, Nokia Research Center, San Jose, on "IPv6 in 3GPP & 4G" $\,$

Wolfgang Fritsche, Head of Internet Competence Center at IABG, on "IPv6 in the Safety Sector"

Wednesday, 7 December 2011 • 13:30 – 15:30 • Room: GRB 310 D/E Access Networks Forum I

Fiber to the Distribution Point and G.fast - The Next Generation of Broadband Access

Organizer: Kevin Schneider, CTO, ADTRAN, Inc, USA

Communications Service Providers around the world are seeking to deploy ultra high bandwidth solutions throughout their networks to achieve national objectives, global broadband competitiveness and to enable new and exciting applications and services. At the same time, they are also trying to go "green" by selecting products that consume less power. To achieve their goals, operators urgently need new ultra high performance solutions they can deploy quickly and cost effectively.

INDUSTRY FORUMS • WEDNESDAY

Fiber to the Home (FTTH) is a successful solution to meet these demands for a subset of residences (estimated at 30% to 50% in the most favorable environments) but the economics and cost of deployment have become an insurmountable challenge in many high cost areas. Fiber to the Node (FTTN) and Fiber to the Cabinet (FTTC) solutions are being deployed in areas where the economics and deployment challenges limit FTTH deployment. FTTH /FTTC leverages fiber deployment in the existing feeder plant, and with the nodes providing services to several hundred subscribers, the cost of fiber deployment can be spread over that number, keeping cost per subscriber fairly low. However, with copper loop lengths reaching 1 km or more, even with the latest advances in technology, the data rate that can be offered is often less than 100 Mbps per twisted pair, well below what is projected to be needed in the future.

As each deployment topology is different, operators need a full toolbox of solutions that goes beyond FTTH and FTTN/FTTC to achieve national broadband targets on a wide scale basis. A new product category is required that can deliver data rates of 100 Mbps and up quickly and cost-effectively, utilizing the existing copper where it is cost prohibitive to replace it with the fiber required for FTTH. This deployment model, which brings fiber to the distribution point nearest to the home has been referred to as Fiber to the Distribution Point or FTT-DP.

While initial solutions have already reached the market, standards bodies have recently recognized the need and have started developing requirements and technology for these ultra high performance solutions. The Broadband Forum (BBF) has been developing requirements for such a solution and recently requested that the ITU-T start a standards development program when the requirements are completed. Requirements mentioned to date are for maximum loop lengths of 200m with typical loop lengths of 30-50m, providing 500 Mbps on 30 m loops. In response, the ITU-T started a project to study/define a very high data rate solution for very short copper access loops, which has been named G.fast.

This forum will engage senior representatives of companies that are involved in various phases of the FTT-DP/G.fast development process: Service Providers, Equipment Providers, Chipset Providers, and the theoretical work that underlies the technology.

Moderator: Don Clarke, Network Innovation Strategy Manager, BT Research and Technology

Panelists:

Vernon Reed, Lead Member of Technical Staff, AT&T Labs Chano Gomez, Director, Business Development, Lantiq Kevin Schneider, Chief Technology Officer, ADTRAN, Inc, USA

Wednesday, 7 December 2011 • 13:30 – 15:30 • Room: GRB 320 A/B Medical Communications Forum Medical Communications - Technologies and Challenges

Organizer: Charles Willis, University of Texas MD Anderson Cancer Center, USA

Like many other industries, the 21st century healthcare industry is highly dependent on information technology. Healthcare somewhat differs from other industries in special requirements for privacy, unique regulations by federal, state, and local authorities, and in the possibility of particularly dire consequences in the event of failures of the technology. The healthcare industry is not a large enough market force to drive technological changes, but rather leverages technological advancements from industries, such as the consumer electronics industry, the telecommunications industry, and the banking industry. This forum will discuss the medical informatics, imaging informatics, plays in the synthesis of imaging information and in the development and monitoring of treatment.

Moderator: Charles E. Willis, Associate Professor, Department of Imaging Physics, UT M. D. Anderson Cancer Center. Houston

Topic 1: Medical Informatics: a 40,000 foot view

Jiajie Zhang, PhD, Dr. Doris L. Ross Professor and Associate Dean for Research, Director, National Center for Cognitive Informatics and Decision Making in Healthcare, School of Biomedical Informatics, University of Texas Health Science Center at Houston

Topic 2: Imaging Informatics

Charles E. Willis, PhD, Associate Professor, Department of Imaging Physics, UT M. D. Anderson Cancer Center. Houston

Topic 3: The Electronic Medical Record

Charles Suitor, MS, Director, Electronic Medical Records, EMR Development & Support, UT M. D. Anderson Cancer Center. Houston

Topic 4: How informatics enables the modern practice of Radiology Kevin W. McEnery, MD, Professor, Department of Diagnostic Imaging, UT M. D. Anderson Cancer Center. Houston

Panel Discussion: All

Wednesday, 7 December 2011 • 16:00 - 18:00 • Room: GRB 310 D/E

Access Networks Forum II The Convergence of Wireline and Wireless Access Networks -Recent Advance and Challenges of Fiber Penetration into Carrier Ethernet, MSOs, Smart Grid and Mobile Backhaul. Organizer: Frank Chang, Vitesse, USA

In recent years, the fiber penetration into broadband end users has opened the discussion about seamless integration of wireline and wireless access networks to provide both increased mobility and bandwidth for broadband services in the broadband access arena. This panel will provide exposure to those individuals interested in key insights and challenges of wireless/wireline access convergence and learning about the latest in networking technologies, particularly for the service provider and carrier Ethernet technologies. A wide range of industry leaders representing many different perspectives will be hand to present and entertain questions.

Potential topics will focus on broadband access and service delivery architecture, technologies, solutions and applications. The discussion will cover, but is not limited to:

- Market Analysis and drivers for wireline and wireless access.
- · Recent PON std developments, testing, and deployment status
- Next-gen PON access development
- DPoE or DOCSIS-PON, or RFoG for MSOs
- Time transport with 1588v2
- Synchronization in Wireless Backhaul
- CPRI Architecture and PON into wireless backhaul
- Cost-effective optical transceivers
- Carrier Ethernet access technologies
- Application of UniPON for mobile internet
 Triple network convergence requirements

Moderator: Frank Chang, Vitesse, USA

Panelists:

Julie Kunstler, Principal Analyst at Ovum Research

Dong Liu, Director, Strategic Mktg and Bus Development of Access business, Qualcomm Yuanqiu Luo, Huawei Technologies

Pat Diamond, Independent Consultant

Bernd Hesse, Sr Director, Strategic Bus Development of LG-Ericsson Chris Pfistner, Director, Global Access Business Division of NeoPhotonics Naoto Yoshimoto, R&D Sr. Manager, NTT Access Network Service Systems Laboratories

Wednesday, 7 December 2011 • 16:00 – 18:00 • Room: GRB 320 A/B KM Forum

Knowledge Management in Customer Care

Organizer: Jon Wright, James Fan, Jennifer Lam, Steve Polston, AT&T

Three decades of explosive growth in networking technologies, devices, and services over the past three decades has turned customer care into a highly knowledge-intensive exercise for service providers. Supporting human agents in this environment is challenging in its own right, but the development of self-support channels has added an additional level of complexity. In addition, the value of understanding the data generated from the various forms of customer care is now recognized and accepted.

This forum will discuss emerging technologies with the potential to significantly improve the customer experience, and, just as importantly, help managers understand the complex events and that are happening in customer care.

Topics covered will include:

- Text Analytics in the Contact Center
- Cross channel analysis in Customer Care
- Content Modeling for deeper contextual understanding
- Deep question and answering systems
- Building and Maintaining complex knowledge structures
- Increasing relevance for self-service support with a knowledge-based approach

Moderator: Jon Wright,

Principal Member of Technical Staff, AT&T Labs - Research, AT&T

Panelists:

Peggy Zagelow, IBM Content Analytics Development, USA Ian Hersey, CTO, Attensity, USA Lars Hard, CTO & Founder, ExpertMaker, Sweden

Thursday, 8 December 2011 • 8:00 - 10:00 • Room: GRB 310 A/B

Social Networking Forum Social Computing Applications and Mobile Networks: A Convergence Scenario

Organizers: Seshadri Mohan and **Nitin Agarwal**, University of Arkansas, Little Rock, USA

The forum will focus on the phenomenal growth of social computing applications and the need to incorporate awareness of social networks within wireless networks. The recent advancements in socio-technical systems have induced behavioral changes among the users. It is imperative to adapt the networks to cater to such behavioral changes. By becoming aware of the capabilities of wireless networks and devices, user experience in their interaction with social networks can be enhanced. The forum will focus on the trends, the standardization efforts in wireless and social computing applications arena that could facilitate the convergence of social and mobile networks.

This forum aims to invite industry speakers that will provide the participants an in-depth understanding of the following aspects of the convergence scenario:

- The varied nuances taking place in the rapidly growing field of social computing applications,
- · A taxonomy of social computing applications,
- Induced behavioral changes due to advances in socio-technical systems and its effects on network infrastructure
- · Network-aware social computing applications the challenges and opportunities,
- A framework architecture for convergence of wireless networks and social applications,
- Standardization in the wireless networking arena that facilitates the development
 of network-aware social applications, thereby facilitating the convergence of
 social applications and mobile networks; The part of the forum on standardization
 efforts will include
- 3GPP standardization of IP Multimedia Subsystems
- IETF QoS Standards
- 3GPP QoS Classifications
- GSMA IP Packet Exchange Solution
- 13 Forum activities
- ETSI TISPAN NGN
- End-to-end QoS solutions as a means of creating network-aware social applications
- · Performance parameters for social networking applications
- Future trends

Moderator: Seshadri Mohan, University of Arkansas at Little Rock, USA

Thursday, 8 December 2011 • 13:30 – 15:30 • Room: GRB 310 A/B Next Generation Services Overlay Networks (NGSON) Forum

Organizer: Mehmet Ulema, Manhattan College, NY, USA

Next generation service overlay network (NGSON) provides a framework and necessary functions to support context-aware, dynamically adaptive, and self-organizing networks over Internet Protocol (IP)-based networks. NGSON is envisioned to include advanced service and transport level routing and forwarding

schemes that are independent of the underlying networks such as IMS, NGN, P2P overlay or WEB to transmit NGSON signaling messages and/or media among its users and services. Recognizing he importance of this issue, many standards organizations have been addressing various aspects of the issue under different frameworks and terminology. NGSON is the IEEE's official name for this effort under IEEE Project 1903. A number of equipment vendors, telecom operators, and research organizations have been working on this project to standardize various aspects under P 1903. As of this writing, the Working Group is about to wrap up the functional architecture for NGSON.

The panelists will discuss various aspects of NGSON, as well as the status of NGSON standardization effort. Panelists will be invited to address any of, but not limited to, the following or related topic areas:

- NGSON architecture for wire line and wireless networks
- Status of NGSON standards
- Status of, and experiences with, NGSON implementation and testbed
- NGSON applications and services for both wire line and wireless IP-based networks
- Security issues with NGSON
- NGSON Service Routing
- NGSON Service Composition
- Dynamic Adaptation in NGSON
- Context Awareness in NGSON
- Self-Organization in NGSON
- QoS and Performance Issues in NGSON
- NGSON Network and Service Management
- NGSON interactions with IMS, P2P, etc

Moderator: Mehmet Ulema, Manhattan College, NY, USA

Panelists:

Rick Townsend, Huawei Technologies, USA F. Joe Lin, Telcordia Technologies, USA Li Yan, Huawei Technologies, China Jong Hwa Yi, ETRI, South Korea Wu Bin, ChinaMobile, China

Thursday, 8 December 2011 • 16:00 – 18:00 • Room: GRB 320 A/B SDR Forum II

Cognitive Radio in Software Defined Radio (CR/SDR)

Organizers: R. Muralidharan, General Manager, Tata Power SED India D R Vaman, PV A&M University, USA

This Forum will discuss the critical issues that need to be addressed in order to commercialize the Cognitive Radio in Software Defined Radio (CR/SDR). These issues include:

- Trust verification
- Synchronization of dynamically variable components at each layer using cross layer controls
- Frequency synchronization in a broad spectrum where CR function is deployed
 Optimal consideration for CR design that minimizes the spectrum conflicts with
- power efficiency and bandwidth efficiency
- Finally, can an industry which owns a spectrum through government auction allow CR to be implemented that has some issues with malicious radios entering the system?

The panel members are well versed in both military environment and commercial environment with active participation in SDR forum and Future Warrior radio deployments. They have been involved one way or another in the design of CR/SDR much ahead of many organizations due to their dual association in industry and DoD. The members of IEEE who attend this panel will get significant and thriving discussions on different positions taken by the panel members.

Moderators: R. Muralidharan, General Manager, Tata Power SED India D R Vaman, PV A&M University, USA

Panelists:

Lawrence B Milstein, Professor, Univ of California at San Diego Vincent J Kovarik Jr., PrismTech, USA John Glossner, General chair, SDR'11 WInncomm & CTO at Optimum Semiconductor



INDUSTRY TECHNICAL PRESENTATIONS

	TUESDAY			WEDNE	SDAY	,	THURSDAY			
	6 December			7 Dece	ember	8 December				
8:00-9:30	WELCOME & KEYNOTE		IF&E - I.T.P. Mathworks			ial – Receivers,	IF&E - I.T.P. MathWorks Comm Theory 8	IF&E – I.T.P Dense Small Cell		
9:30–10:00	COFFEE BREAK	8:00-10:00	Comm Theory & 4G Wireless Systems (Part 1) GRB 320 D/E				4G Wireless Systems (Part 2) GRB 320 D/E	Deployments in Future Radio Access Networks GRB 320 A/B		
	Frontine Front	10:00-10:30	0	COFFEE BREAK				COFFEE BREAK		
10:00-12:00	on Cloud Computing	10:30-12:00		KEYNOTE			KEYNOTE			
12:00-13:30	AWARDS LUNCHEON	12:00-13:30		LUNCH	BREA	LUNCH BREAK				
13:30-15:30		13:30-15:30	IF&E - I.T.P. National Instruments Test Bed Framework GRB 320 D/E	Tutor Recei Transr & No GRB C/	rial – ivers, nitters bise 310 'F	IF&E - I.T.P. Next Gen: Emergency Comm GRB 320 C/F	IF&E - I.T.P. National Instruments Test Bed Framework GRB 320 D/E	IF&E - I.T.P. Cyber Security GRB 320 A/B		
15:30-16:00	COFFEE BREAK	15:30-16:00	COFFEE BREAK				COFFEE BREAK			
16:00-18:00 16:00-18:00 Tutorial – Rece Transmitters & GRB 310 C				eivers, k Noise C/F	ll Real & Tra G	F&E - I.T.P Time Tracking nsport Location RB 320 C/F	IF&E – I.T.P. NASA on Space Power Efficiency GRB 310 A/B			

Wednesday, 7 December 2011 • 8:00 - 10:00 • Room: GRB 320 D/E How Basic Communications Theory Turns into a 4G Wireless System (Part 1)

Organizer: Dhadesugoor R. Vaman,

TI Endowed Chair Professor and Director of ARO CeBCom,

Prairie View A&M University

Presenters: Dr. Houman Zarrinkoub, Ph.D., and Idin Motedayen-Ava Mathworks

Starting from underlying mathematical principles, we will discuss the iterative process of analysis, design and optimization involved in the development and implementation of major components of 4G LTE wireless systems. The demonstration example will start with a simple communications system composed of just a modem (modulation and demodulation) and an AWGN (additive-white-Gaussian-noise) channel and progressively add components to approach a bare bones prototype of a 4G LTE system.

Highlights of the presentation include:

- Modeling, simulation and visualizing the performance of the communications system in MATLAB
- Using the Communications System Toolbox to incorporate components such as Modulators, Chanel models, Convolution coding/Viterbi Decoder, Turbo Encoder/Decoder, MIMO and OFDM into your model
- System-level throughput analysis with adaptive modulation based on channel characteristics
- Accelerating the speed of your MATLAB simulation at each step through parallel processing, code generation and using efficient algorithms

Wednesday, 7 December 2011 • 8:00 - 10:00 & 13:30 - 15:30 & 16:00 - 18:00 • Room: GRB 310 C/F

Tutorial on Radio Receivers, Transmitters, Modulation and Noise – A Review of the Fundamentals

Organizer: Dhadesugoor R. Vaman, TI Endowed Chair Professor and Director of ARO CeBCom, Prairie View A&M University Presenter: W. Ransom Siler, P.E. LLC

This tutorial presents the fundamental building blocks that lead to understanding the latest generation of receivers, transmitters and modulation systems used in mobile radio, microwave, satellite, WiFi, HSPA, LTE and other OFDMA/FDMA/TDMA wireless communications systems. The objective is to provide engineers, technicians and project managers with a fundamental understanding of radio receivers/transmitters and the modulation and coding used to convey information in existing and emerging communications systems. The tutorial includes practical examples of basic and advanced receiver and transmitter designs.

Topics Covered

- Several Pages from Radio History
- 100 Years of Digital Radio Modulation
- Basic Receivers & Transmitters
- Fundamentals of Amplitude Modulation
- Introduction to Mixers
- Advanced Receivers
- Variations of Amplitude Modulation
- I&Q Modulation & Demodulation
- Frequency/Phase Modulation
- Channelization, Access & Duplex methods
- "Digital" Modulation Methods
- Introduction to OFDM
- Fundamentals of FEC & Noise
- Examples of 4G Technology

Wednesday, 7 December 2011 • 13:30 – 15:30 & 16:00 – 18:00 Room: GRB 320 C/F

AT&T Mobility Application Workshops on Next Generation Emergency Communications and Real Time Tracking & Transport Location

Presenters: David Ellis, AT&T Industry Solutions Practice Transportation/AVL

Singh Lin, AT&T Mobility Applications Consultant

AT&T recognizes that many wireless customers are faced with today's economic challenges and budget constraints that directly impact their ability to serve and perform as an organization. In light of this situation, AT&T is making network investments like 4G LTE and is focused on delivering applications that transform operations in areas such as improving safety, driving operational efficiency, increasing worker productivity, preparing for disaster recovery and strengthening public relations.

Two workshops will provide examples of these mobility solutions. One will focus on the next generation of emergency communications. Another workshop will discuss mission critical business solutions for government and small to medium businesses that have vehicles fleets/critical assets. Example of equipment and devices will be displayed during the workshop.

Wednesday, 7 December 2011 & Thursday, 8 December 2011 13:30 – 15:30 • Room: GRB 320 D/E

Open, Programmable Rapid Prototyping and Test Bed Framework

Organizer: Dhadesugoor R. Vaman,

TI Endowed Chair Professor and Director of ARO CeBCom, Prairie View A&M University

Presenters: Douglas Kim, Ph.D., and Mike Trimborn, National Instruments

Around the world, wireless consumers' insatiable demand for bandwidth has spurred unprecedented levels of investment from both the public and private sectors to explore new ways to expand network capacity to meet the rising demand. Industry analysts postulate that demand will indeed outpace capacity and it's simply a matter of when. Against this backdrop, wireless researchers equipped with burgeoning budgets continue to put forth ideas to address the capacity challenges investigating techniques

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spanning all areas of the network from the wireless physical layer to heterogeneous networks encompassing pico and femto cells, and relays.

In reality, wireless service providers may not rely on one "silver bullet" to solve the capacity issues but rather employ a combination of techniques as the demand curve is clearly exponential with no inflection point in sight. Although many of these ideas hold much promise, the time required to transition from computer simulation to actual deployment in a real network can take several years.

Service providers need proof that new ideas will work to guide investments and set priorities. Simulations, necessary as a first step in design process, stop short in terms of comprehending many network and channel conditions, and therefore deployment to hardware is equally necessary to further research in these important areas. As researchers know all too well, the transition from simulation to a working prototype is not straightforward and very time-consuming. Why? The tools necessary to develop new concepts are available but the transition to a working prototype requires a completely different set of tools and skills, and offer loose hardware integration if any. As a result, the prototyping exercise can be frustrating and expensive.

National Instruments has been working on this problem for several years and will demonstrate a graphical approach to communications systems design with open modular hardware and software to expedite the transition from concept to prototype and to reduce the time to deployment. These tools offer a unique combination of tight hardware integration yet offer an open platform to accommodate different design languages and technologies to enable researchers to rapidly prototype their concepts.

Thursday, 8 December 2011 • 8:00 – 10:00 • Room: GRB 320 D/E How Basic Communications Theory Turns into a 4G Wireless System (Part 2)

Organizer: Dhadesugoor R. Vaman,

TI Endowed Chair Professor and Director of ARO CeBCom, Prairie View A&M University

Presenters: Dr. Houman Zarrinkoub, Ph.D., and **Idin Motedayen-Ava** Mathworks

Orthogonal Frequency Division Multiplexing (OFDM) and Multiple Input Multiple Output (MIMO) technologies are at the heart of major 4G communication standards such as WiMAX and LTE.

Because of the complexities of the underlying technologies many companies are adopting advanced modeling and simulation tools from the MathWorks to accelerate innovation in implementing and optimizing next generation of wireless systems. Using models of real-world systems, this seminar will demonstrate all of the major stages of functional design and simulation of a communication system, from the design specification all the way to code running on embedded signal processing hardware.

This seminar provides you with an opportunity to understand how MATLAB, Simulink, Communications System Toolbox, and other MathWorks tools, can be used to:

Model and explore design specifications through simulation

Generate C code from your MATLAB model with MATLAB Coder

- Prototype and test your model as a standalone desktop C/C++ application
- Generate VHDL or Verilog code to implement the design using FPGAs

Thursday, 8 December 2011 • 8:00 – 10:00 • Room: GRB 320 A/B Dense Small Cell Deployments in Future Radio Access Networks Organizer & Moderator: Jie Zhang, University of Sheffield, Sheffield, UK

With rapidly-growing smartphones and tablets, mobile operators have experienced tremendous data traffic increase in recent years. It is predicted that this trend will continue at least until 2020 with a CAGR of 80-100%. Hence, the traffic (mostly data) carried by a mobile operator's network in 2020 could be over 1000 times of that in 2010. This exponential traffic growth presents a huge challenge to the mobile industry. On top of meeting this traffic increase, operators have obligations to cut energy consumptions, which normally compromise spectrum efficiency in macrocell scenarios.

Dense small cell deployment is one of the most promising ways to meet the exponential traffic growth. In this panel session, experts from operators, vendors and academia will discuss the challenging issues arising from dense small cell deployment such as interference, mobility management, SON, backhauling, and etc. The green aspect of small cell deployment will also be discussed. Further, dense small deployment will be compared with other approaches in terms of delivering capacity.

Finally, various dense small cell deployment scenarios will be illustrated by some indoor and joint indoor-outdoor wireless network planning and optimisation tools.

Thursday, 8 December 2011 • 13:30 – 15:30 • Room: GRB 320 A/B Cyber Security: Trust in the Reliability and Security of Cyberspace Organizer: Dhadesugoor R. Vaman,

TI Endowed Chair Professor and Director of ARO CeBCom, Prairie View A&M University Presenter: Karl F. Rauscher, CTO, EastWest Institute (EWI)

Cyberspace is essential for the continued operation of governments, businesses and lifestyles worldwide. Being able to trust that cyberspace will perform as expected is therefore essential to national security, economic stability and public safety. However, as the pace of technological advances has outpaced our policies and practices to ensure the needed trust, criminals, unintended limitations and even natural causes are regularly the source of disappointment for stakeholders at all levels and across all sectors. Indeed the growing, aggregate concerns around the security of cyberspace are a very real threat that could derail the pace and direction of the progress now being made.

This forum will take on the most pressing challenges in cyberspace that require integrated progress in technology and policy in order to address growing gaps of mistrust. Focus areas will include: the integrity of ICT development environments and supply chains, the limitations in the resilience of the Global Undersea Communications Cable Infrastructure (GUCCI) - including no alternative, dealing with the inherent and ever-present limitation of source attribution. Thought leaders from around the world will be invited to play an active part in this forum that will seek to include balanced representation from government, business and research institutions.

Thursday, 8 December 2011 • 16:00 – 18:00 • Room: GRB 310 A/B Part I: Aerospace Power Technology for Possible Terrestrial Energy Systems Applications

(Photovoltaics; Fuel Cells; Energy Storage Systems; Stirling Convertors; Gas Turbines; Advanced Energy Systems; Nuclear Technology)

Part II: The Influence of NASA's Human Spaceflight Program on the Development of Fuel Cell Technology

Organizer: Dhadesugoor R. Vaman,

TI Endowed Chair Professor and Director of ARO CeBCom, Prairie View A&M University

Presenters: Dr. Valerie Lyons, Chief, Power and In Space Pro

Chief, Power and In Space Propulsion Division, NASA Glenn Research Center

Dr. John H. Scott,

Energizing Global Communications

Chief, Energy Conversion Branch, NASA Johnson Space Flight Center

In the first part, the presentation looks at Aerospace power and propulsion systems research and development being performed at NASA. This research could have tremendous impact in producing reliable, sustainable, low cost energy systems for terrestrial needs. Some recent accomplishments and plans for further development will be presented.

In the second part, the presentation looks at the fuel cells from the time of their invention in the 19th century through the middle of the 20th. The fuel cells remained a "solution in search of a problem." Though technology developers mounted a number of successful laboratory and field demonstrations, there was during this period, no application for which fuel cells were the optimal energy storage technology. Beginning in the 1960's, however, fuel cells were determined to be the best energy storage solution for NASA's Gemini, Apollo, and Space Shuttle Programs. Human spaceflight thus provided the "problem" for which the fuel cell "solution" had been searching. The development efforts thereby funded by NASA provided the impetus for the development of a substantial fuel cell industry. This industry then grew significantly when interest in "green power" and "The Hydrogen Economy" developed during the 1990's. Fuel cell technology is thus one of Human Spaceflight's more effective "spinoffs." Much of NASA's fuel cell development efforts since that time have been focused on "spinning in" commercially developed fuel cell technology for spacecraft applications.

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 322 A/B

AHSN01: Wireless Sensor and Actor Networks I Chair: Rui L. Aguiar

(University of Aveiro / Instituto de Telecomunicações, Portugal)

A Distributed Energy-efficient Re-Clustering Solution for Wireless Sensor Networks Yichao Jin (University of Surrey, United Kingdom)

Dali Wei (Jiangsu Tianze Information Industry INC., China) Serdar Vural, Alexander Gluhak, Klaus Moessner (University of Surrey, United Kingdom)

fAPEbook - Animal Social Life Monitoring with Wireless Sensor and Actor Networks

Mustafa Ilhan Akbas, Matthias R Brust (University of Central Florida, USA) Carlos H. C. Ribeiro (Technological Institute of Aeronautics, Brazil) Damla Turgut (University of Central Florida, USA)

Follow the Trail: A Search Strategy in Event-driven Wireless Sensor and Actor Networks

Bin Cheng, Yi Guo, Zhezhuang Xu, Cailian Chen, Xinping Guan (Shanghai Jiao Tong University, China)

A Search-Efficient Architecture for Data-Centric Sensor Networks Cuong Pham, Duc A. Tran (UMass Boston, USA)

Saving Energy by Adjusting Transmission Power in Wireless Sensor Networks Xiao Chen (Texas State University, USA)

Neil Rowe (U.S. Naval Postgraduate School, USA)

Polynomial Regression Based Secure Data Aggregation for Wireless Sensor Networks

Suat Ozdemir (Gazi University, Turkey) Yang Xiao (University of Alabama, USA)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 330 A/B AHSNO2: Vehicular Networks I Chair: Xiaoyan Hong (University of Alabama, USA)

Performance Evaluation of Beacon Congestion Control Algorithms for VANETs Long Le (NEC Laboratories Europe, Germany)

Reducing Handoff Latency for NEMO-based Vehicular Ad Hoc Networks Azzedine Boukerche, Zhenxia Zhang, Xin Fei (University of Ottawa, Canada)

Towards a Secure Trust Model for Vehicular Ad Hoc Networks Services Osama Abumansoor, Azzedine Boukerche (University of Ottawa, Canada)

Cooperative Awareness at Low Vehicle Densities: How Parked Cars Can Help See Through Buildings

David Eckhoff (University of Erlangen, Germany) Christoph Sommer (University of Innsbruck, Austria) Reinhard German (University of Erlangen, Germany) Falko Dressler (University of Innsbruck, Austria)

Admission Control for Roadside Units Based on Virtual Air-time Transmission Plans

Zaydoun Yahya Rawashdeh, Syed M. Mahmud (Wayne State University, USA)

LTE4V2X: LTE for a Centralized VANET Organization

Guillaume Rémy (Orange Labs, France) Sidi-Mohammed Senouci (University of Bourgogne - ISAT Nevers, France) François Jan, Yvon Gourhant (Orange Labs, France)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 332 A AHSNO3: Routing I Chair: Véronique Vèque (University of Paris-Sud 11, France)

Performance Comparison between IBC-HWMP and Hash-HWMP

Jalel Ben-othman (University of Paris 13, France) Lynda Mokdad (Université de Paris 12, France) Yesica Imelda Saavedra Benitez (University of Versailles, France)

Resource Allocation for On-Demand Data Delivery to High-Speed Trains via Trackside Infostations

Hao Liang, Weihua Zhuang (University of Waterloo, Canada)

FORBID: Cope with Byzantine Behaviors in Wireless Multi-Path Routing and Forwarding

Xueyuan Su (Yale University, USA) Gang Peng, Sammy Chan (City University of Hong Kong, Hong Kong)

An Ant Colony Based Congestion Elusion Routing Scheme for MANET Lin Ma, Yubin Xu, Weixiao Meng (Harbin Institute of Technology, China) Cheng Li (Memorial University of Newfoundland, Canada)

Congestion-Aware Network-Coding-Based Opportunistic Routing in Wireless Ad Hoc Networks Kun-Cheng Chung, Hsin-Chun Chen, Wanjiun Liao

(National Taiwan University, Taiwan)

Null Frequency Jamming of Dynamic Routing in Wireless Ad Hoc Networks Manikanden Balakrishnan, Hong Huang, Satyajayant Misra (New Mexico State University, USA) Rafael Asorey-Cacheda (Universidad de Vigo, Spain) Sandeep Pawar, Yousef Jaradat (New Mexico State University, USA)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 332 F

CQRM01: Cloud and Data Center Chair: Toktam Mahmoodi (King's College London, United Kingdom)

Cutting Down Electricity Cost in Internet Data Centers by Using Energy Storage Yuanxiong Guo, Zongrui Ding, Yuguang Fang, Dapeng Oliver Wu (University of Florida, USA)

Aggregated-DAG Scheduling for Job Flow Maximization in Heterogeneous Cloud Computing

Boonyarith Saovapakhiran (North Carolina State University, USA) George Michailidis (University of Michigan, USA) Michael Devetsikiotis (North Carolina State University, USA)

Autonomic Failure Detection and Prediction for Dependable Cloud Computing Systems

Song Fu (New Mexico Tech, USA)

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Performance Analysis of Cloud Centers under Burst Arrivals and Total Rejection Policy

Hamzeh Khazaei (University of Manitoba, Canada) Jelena Mišić (Ryerson University, Canada) Vojislav B. Mišić (Ryerson University, Canada)

Integrating Scheduling and Replication in Data Grids with Performance Guarantee Lakshmi Anikode, Bin Tang (Wichita State University, USA)

Analysis of Response Time Percentile Service Level Agreement in SOA-based Applications

Keerthana Boloor, Rada Y. Chirkova (North Carolina State University, USA) Timo Salo (IBM Software Group, USA) Yannis Viniotis (North Carolina State University, USA)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 342 A CQRM02: Cognitive and Cooperative Networking Chair: Michael Devetsikiotis (North Carolina State University, USA)

Mobility Reduces the Number of Secondary Users in Cognitive Radio Networks Xinbing Wang, Luoyi Fu, Yingzhe Li, Zizhong Cao (Shanghai Jiao Tong University, China) Xiaoving Gan

(Shanghai Jiao Tong University / University of California, San Diego, China)

On the Impact of Shadowing on the Performance of Cooperative Medium Access Control Protocols

Marco Di Renzo (French National Center for Scientific Research, France) Jesus Alonso-Zarate (Centre Tecnologic de Telecomunicacions de Catalunya, Spain) Luis Alonso (Universidad Politecnica de Catalunya, Spain) Christos Verikoukis (Telecommunications Technological Centre of Catalonia, Spain)

Joint Power Allocation and Beamforming with Users Selection for Cognitive Radio Networks via Discrete Stochastic Optimization Renchao Xie, F. Richard Yu (Carleton University, Canada)

Hong Ji (Beijing University of Posts and Telecommunications, China)

Decision Making for Two-Phase Network-Coded Cooperative Information Repair in Wireless Networks

Yu Liu, Xihua Dong, Bin Guo, Chi Zhou (Illinois Institute of Technology, USA)

Improving the Spectral Efficiency of Adaptive Modulation in Amplify-and-Forward Cooperative Relay Networks with Truncated ARQ Protocol Bhuvan C. Modi, Oluwatobi O. Olabiy, Annamalai Annamalai (Prairie View A&M University, USA)

Consistency Control to Manage Dynamic Contents over Vehicular Communication Networks

Zhou Su (Waseda University, Japan) Pinyi Ren (Xian Jiaotong University, China) Yu Chen (State University of New York, Binghamton, USA)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 332 B

CRN01: Primary Signal Detection and Spectrum Sensing

Chair: Chunyi Song

(National Institute of Information and Communications Technology, Japan)

An Energy-Efficient VLSI Architecture for Cognitive Radio Wideband Spectrum Sensing

Tsung-Han Yu, Chia-Hsiang Yang, Dejan Markovic, Danijela Čabrić (University of California, Los Angeles, USA)

A Generalized System Model and Performance Analysis for the Periodogrambased Energy Detector

Ebtihal Haider Gismalla, Emad Alsusa (Manchester University, United Kingdom)

Adaptive Threshold Control for Energy Detection based Spectrum Sensing in Cognitive Radio Networks

Zhi Qiang Bao, Bin Wu (University of Electronic Science and Technology of China, China) Pin-Han Ho (University of Waterloo, Canada) Xiang Ling (University of Electronic Science and Technology of China, China)

Spectrum Sensing of Signals with Structured Covariance Matrices Using Covariance Matching Estimation Techniques Erik Axell, Erik G. Larsson (Linköping University, Sweden)

LIN AXEII, LIN G. Laisson (Linkoping Oniversity, Sweden)

Blind Spectrum Detector for Cognitive Radio using Compressed Sensing Ziad Khalaf (Supelec/IETR, France) Amor Nafkha (Supélec, France) Jacques Palicot (IETR/Supélec, France)

Bayesian Compressed Sensing based Dynamic Joint Spectrum Sensing and Primary User Localization for Dynamic Spectrum Access Xue Li (Wright State University, USA) Steven Hong (Stanford University, USA) Zhu Han (University of Houston, USA) Zhiqiang Wu (Wright State University, USA)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 332 C CSSO1: Attacks Chair: Xiaoyan Hong (University of Alabama, USA)

Risk-aware Attacks and Catastrophic Cascading Failures in U.S. Power Grid Wenkai Wang (University of Rhode Island, USA) Qiao Cai (Stevens Institute of Technology, USA) Yan Sun, Haibo He (University of Rhode Island, USA)

Hitchbot - Delivering Malicious URLs via Social Hitch-hiking Ka Chun Lam, Wing Cheong Lau, On Ching Yue (Chinese University of Hong Kong, Hong Kong)

On a Hierarchical False Data Injection Attack on Power System State Estimation Qingyu Yang, Jie Yang (Xian Jiaotong University, China)

Wei Yu (Towson University, USA) Nan Zhang (George Washington University, USA) Wei Zhao (University of Macau, China)

Evaluation of Security Vulnerabilities by Using ProtoGENI as a Launchpad Dawei Li, Xiaoyan Hong, Jason Bowman (University of Alabama, USA)

Security Vulnerability due to Channel Aggregation/Bonding in LTE and HSPA+ Networks

Santhanakrishnan Anand, Kai Hong, Rajarathnam Chandramouli (Stevens Institute of Technology, USA) Shamik Sengupta (City University of New York, USA) Koduvayur Subbalakshmi (Stevens Institute Of Technology, USA)

Reliable Re-encryption in Unreliable Clouds

Qin Liu (Central South University / Temple University, USA) Chiu C. Tan, (Temple University, USA) Guojun Wang (Central South University, China)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 332D CSWS01: Multimedia Applications and Services Chair: Eric J. Addeo (DeVry University, USA)

Dynamic Adaptive Streaming over HTTP from Multiple Content Distribution Servers

Wei Pu (State University of New York, Buffalo, USA) Zixuan Zou (Huawei Technologies Co. Ltd, China) Chang Wen Chen (State University of New York, Buffalo, USA)

On Traffic Patterns of HTTP Applications

Brice Augustin, Abdelhamid Mellouk (University Paris-Est Creteil Val de Marne, France)

Sharing Online Video Streams in Wireless Mesh Access Networks Fei Xie, Kien Hua (University of Central Florida, USA)

Perception-based Application Layer Multicast Algorithm for Scalable Video Conferencing

Tien Anh Le, Hang Nguyen (Institut Telecom, Telecom SudParis, France)

Distribute Provision Strategies of RESTful-based Mobile Web Services Feda AlShahwan, Klaus Moessner, Francois Carrez (University of Surrey, United Kingdom)

HTTP Live Streaming Bandwidth Management using Intelligent Segment Selection Kevin J Ma (University of New Hampshire / Azuki Systems, USA) Radim Bartos (University of New Hampshire, USA)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 332E CTO1: MIMO I Chair: Rui Zhang (Institute of Infocomm Research, Singapore)

Spatial Degrees of Freedom of the Multicell MIMO Multiple Access Channel Taejoon Kim, David Love (Purdue University, USA)

Bruno Clerckx (Samsung Electronics, Korea) Duckdong Hwang (SAIT, Korea)

Energizing Global Communications

Bandwidth Limitations and Broadband Matching for Coupled Multi-Antenna Systems

Pawandeep S. Taluja, Brian L. Hughes (North Carolina State University, USA)

On MIMO Transmission over Fading Channels: Reliable Throughput vs Outage Probability

Pingyi Fan (Tsinghua University, China) Khaled Ben Letaief (Hong Kong University of Science & Technology, Hong Kong)

MIMO Broadcast Channel with Arbitrarily Varying Eavesdropper Channel: Secrecy Degrees of Freedom Xiang He (Microsoft, USA) Ashish Khisti (University of Toronto, Canada) Aylin Yener (Pennsylvania State University, USA)

MIMO Broadcasting for Simultaneous Wireless Information and Power Transfer Rui Zhang (Institute of Infocomm Research, Singapore) Chin Keong Ho (Institute for Infocomm Research, A*STAR, Singapore)

How the Framework of Expectation Propagation Yields an Iterative IC-LMMSE MIMO Receiver

Martin Senst, Gerd H. Ascheid (RWTH Aachen University, Germany)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 342 B NGN01: Network Virtualization Chair: Eiji Oki (University of Electro-Communications, Japan)

XTC: A Throughput Control Mechanism for Xen-based Virtualized Software Routers

Rodrigo S. Couto (Federal University of Rio de Janeiro, Brazil) Miguel Elias Mitre Campista (Federal University of Rio de Janeiro / GTA, Brazil) Luís Henrique M. K. Costa (Federal University of Rio de Janeiro, Brazil)

ExpoNet: A Flexible Platform for Concurrent Experiments on Programmable Infrastructure

Yong Li, Li Su, Depeng Jin, Lieguang Zeng (Tsinghua University, China)

Generalizing Virtual Network Topologies in OpenFlow-based Networks Elio Salvadori, Roberto Doriguzzi Corin, Attilio Broglio, Matteo Gerola (CREATE-NET, Italy)

VNR Algorithm: A Greedy Approach for Virtual Networks Reconfigurations Ilhem Fajjari (Ginkgo Networks / University Pierre et Marie Curie, France) Nadjib Aitsaadi (University of Paris-Est Creteil / UPEC, France) Guy Pujolle (University Pierre et Marie Curie / Paris 6, France) Hubert Zimmermann (Ginkgo Networks, France)

A Hierarchical Approach for Efficient Virtual Network Embedding based on Exact Subgraph Matching

Tay Ghazar, Nancy Samaan (University of Ottawa, Canada)

Efficient Server Consolidation Considering Intra-Cluster Traffic Sanghwan Lee (Kookmin University, Korea) Sambit Sahu (IBM Research, USA)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 342 C SAC 01: Digital Subscriber Loops

Chair: Suresh Subramaniam (George Washington University, USA)

Vectoring in DSL Systems: Practices and Challenges

Mamoun Guenach, Jochen Maes, Michael Timmers (Alcatel-Lucent Bell Labs, Belgium) Oliver Lamparter, Jean-Claude Bischoff (Swisscom Switzerland Ltd, Switzerland) Michael Peeters (Alcatel-Lucent, Belgium)

Predicting ADSL Lines Data Rate Using Neural Networks Marco Mellia, Faheem Yar Khuhawar, Maurizio M. Munafo', Florin Bota (Politecnico di Torino, Italy)

Practical Crosstalk Management for Upstream VDSL Using Dynamic Power Control

Ming-Yang Chen (Stanford University, USA) Wonjong Rhee, Mehdi Mohseni (ASSIA, Inc, USA) John Cioffi (Stanford University, USA)

A Clustering Approach to Autonomous Spectrum Balancing Using Multiple Reference Line for DSL

Sean Huberman, Christopher Leung, Tho Le-Ngoc (McGill University, Canada)

Coverage Optimization in DSL Networks by Low-Complexity Discrete Spectrum Balancing

Martin Wolkerstorfer, Tomas Nordström (Telecommunications Research Center Vienna, Austria)

Ergodic Capacity of a DSL Binder Channel

Sean Huberman, Tho Le-Ngoc (McGill University, Canada)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 342 D

SAC 02: Radio and Optical Wireless Access Networks Chair: Xavier N. Fernando (Ryerson University, Canada)

On Physical Layer Simulation Model for 6-Axis Sensor Assisted VLC based Positioning System

Chinnapat Sertthin (Keio University, Japan) Takeo Fujii (University of Electro-Communications, Japan) Osamu Takyu, Osamu (Shinshu University, Japan) Yohtaro Umeda (Tokyo University of Science, Japan) Tomoaki Ohtsuki (Keio University, Japan)

Femto-cells: Problem or Solution? A Network Cost Analysis Huiguang Liang, John Payne, Hyong Kim (Carnegie Mellon University, USA)

Capacity Enhancement of Hybrid Wireless Optical Networks using MIMO Links Farshad Ahdi, Suresh Subramaniam (The George Washington University, USA)

cMAC: A Centralized MAC Protocol for High Speed Wireless LANs Shuaiyuan Zhou, Zhenghao Zhang (Florida State University, USA)

Automated Optimal Configuring of Femtocell Base Stations'Parameters in Enterprise Femtocell Network

Yizhe Li, Zhiyong Feng, Ding Xu, Qixun Zhang, Hui Tian (Beijing University of Posts and Telecommunications, China)

Indoor Wireless Planning using Smart Antennas Ali Abbasi, Majid Ghaderi (University of Calgary, Canada)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 342 E

SPC01: Channel Estimation, Equalization and Decoding I

Chair: Erik G. Larsson (Linköping University, Sweden)

Channel Tracking for Fast Time-varying Channels in IEEE802.11p Systems Andre Bourdoux, Hans Cappelle, Antoine Dejonghe (IMEC, Belgium)

Joint Channel Estimation and Decoding of Root-LDPC Codes in Block-fading Channels

Iryna Andriyanova (ENSEA/UCP/CNRS, France) Ezio Biglieri (Universitat Pompeu Fabra, Spain) David Declercq (ENSEA/UCP/CNRS, France)

A Low-Delay Low-Complexity EKF Design for Joint Channel and CFO Estimation in Multi-User Cognitive Communications Pengkai Zhao, Cong Shen (Qualcomm, USA)

On the Interplay between Channel Sensing and Estimation in Cognitive Radio Systems

M. Cenk Gursoy (Syracuse University, USA) Sinan Gezici (Bilkent University, Turkey)

A Joint QR-LS based Coarse-Fine Channel Estimation and QR-LRL Detection For Mobile Wimax 802.16m

Divyang Rawal, Youn Ok Park (ETRI, Korea) Vijay Chakka Kumar (DAIICT Gandhinagar, India) HyeongSook Park, Hoon Lee (ETRI, Korea)

EM-based Channel Estimation in OFDM Systems with Phase Noise

Rodrigo Carvajal, Juan Carlos Agüero, Boris I. Godoy, Graham C. Goodwin (University of Newcastle, Australia)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 342 F WC01: MIMO I Chair: Seshadri Mohan (University of Arkansas, Little Rock, USA)

Low Complexity Transmit Antenna Selection for MIMO Systems Jiancun Fan, Qinye Yin, Wenjie Wang (Xian Jiaotong University, China)

Training Design for BICM-MIMO Systems in Block-Fading Channels Zohreh Andalibi, Ha Nguyen, Eric Salt (University of Saskatchewan, Canada)

FIEEE Global Communications Conference

Closed-form Linear Transceiver Designs for MIMO AF Relaying Systems with Direct Link

Changick Song (Korea University, Korea) Kyoung-Jae Lee (University of Texas, Austin, USA) Inkyu Lee (Korea University, Korea)

Weighted Sum Rate Maximizing Transceiver Design in MIMO Interference Channel

JoonWoo Shin, Jaekyun Moon (KAIS, Korea)

Practical Turbo Receiver Design for Throughput-Efficient Relay ARQ Transmissions over Broadband Cooperative MIMO Channels

Zakaria El-Moutaouakkil (Nokia Siemens Networks, Morocco) Tarik Ait-Idir (INPT, Morocco) Samir Saoudi (Telecom-Bretagne, France) Halim Yanikomeroglu (Carleton University, Canada) Mounir Ghogho (University of Leeds, United Kingdom)

Linear MMSE Precoding and Equalization for Network MIMO with Partial Cooperation

Saeed Kaviani (University of Alberta, Canada) Osvaldo Simeone (New Jersey Institute of Technology, USA) Witold A. Krzymień (University of Alberta, Canada) Shlomo (Shitz) Shamai (The Technion, Israel)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 350 D/E/F WC02: OFDMA Chair: Rui Zhang (Institute of Infocomm Research, Singapore)

Throughput-based Adaptive Resource-Allocation Algorithm for OFDMA Cellular System with Relay Stations

Wenlin Wang, Jing Liu (Shanghai Jiao Tong University, China) Dapeng Li (Nanjing University of Posts and Telecommunications, China) Youyun Xu (PLA University of Science & Technology / Shanghai Jioatong University, China)

Energy-Efficient Resource Allocation in OFDMA Networks

Cong Xiong, Geoffrey Li (Georgia Tech, USA) Shunqing Zhang, Yan Chen, Shugong Xu (Huawei, China)

Resource Allocation in Multi-Cellular DF Relayed OFDMA Systems Zhiwen Jin, Luc Vandendorpe (Université Catholique de Louvain, Belgium)

Resource Allocation for Secure OFDMA Networks with Imperfect CSIT

Derrick Wing Kwan Ng (University of British Columbia, Canada) Ernest S. Lo (Centre Tecnològic de Telecomunicacions de Catalunya, Spain) Robert Schober (University of British Columbia, Canada)

A New Model for Coverage with Fractional Frequency Reuse in OFDMA Cellular Networks

Thomas Novlan (University of Texas, Austin, USA) Radha Krishna Ganti (Indian Institute of Technology Madras, India) Jeffrey Andrews (University of Texas, Austin, USA) Arunabha Ghosh (AT&T Labs, Inc., USA)

Exploiting Interference Alignment in Multi-cell Cooperative OFDMA Resource Allocation

Bin Da (National University of Singapore, Singapore) Rui Zhang (Institute of Infocomm Research, Singapore)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 351 A/B WCO3: Femtocells Chair: Sundeep Rangan

(Polytechnic University of New York University, USA)

Coordination Mechanisms for Stand-Alone Femtocells in Self-Organizing Deployments

Carlos H. M. de Lima, Mehdi Bennis, Matti Latva-aho (University of Oulu, Finland)

Stable Subchannel Allocation for OFDMA Femtocells with Switched Multi-beam Directional Antennas

Ang-Hsun Tsai, Li-Chun Wang, Jane-Hwa Huang, Ruey-Bing Hwang (National Chiao Tung University, Taiwan)

Fractional Frequency Donation for Cognitive Interference Management among Femtocells

Guodong Zhao (University Electronic Science & Technology of China, China) Chenyang Yang (Beihang University, China) Geoffrey Li (Georgia Tech, USA) Guolin Sun (Huawei Technologies Sweden AB, Sweden)

Interference Alignment for Cooperative MIMO Femtocell Networks Basak Guler, Aylin Yener (Pennsylvania State University, USA)

Distributed Algorithms for Resource Allocation in Cellular Networks with Coexisting Femto- and Macrocells Yongsheng Shi (Qualcomm, USA) Allen B. MacKenzie (Virginia Tech, USA)

Interference-Controlled Load Sharing with Femtocell Relay for Macrocells in Cellular Networks

Dizhi Zhou, Wei Song (University of New Brunswick, Canada)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 351 D/E WC04: Wireless Sensor Networks

Chair: Ariton Xhafa (Texas Instruments Inc., USA)

A Radio Propagation Model for Wireless Underground Sensor Networks Suk-Un Yoon, Liang Cheng, Ehsan Ghazanfari, Sibel Pamukcu, Muhannad Suleiman (Lehigh University, USA)

Genetic Algorithm Optimization for Quantized Target Tracking in Wireless Sensor Networks

Majdi Mansouri (University of Technology of Troyes, France)

Mobile Assister based Collaborative Beamforming for Distributed Sensor Networks

Jian Hou, Gangfeng Yan, Zhiyun Lin (Zhejiang University, China)

Feasibility Conditions for Rate-Constrained Routing in Power-Limited Multichannel WSNs

Samina Ehsan, Bechir Hamdaoui (Oregon State University, USA) Mohsen Guizani (WMU, USA)

Discerning Direct and Indirect Paths: Principle and Application in Passive Target Positioning Systems

Junyang Shen, Andreas Molisch (University of Southern California, USA)

Millimeter-wave Broadband Channel Sounder and Propagation Measurements for Wireless Communications

Eshar Ben-Dor, Theodore Rappaport, Yijun Qiao, Samuel Lauffenburger (University of Texas, Austin, USA)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 351 C/F WN01: Cognitive Networking I Chair: Lijun Qian (Prairie View A&M University, USA)

Impact of Spectrum Allocation on Connectivity of Cognitive Radio Ad Hoc Networks

Yun Li, Zhi Wang (Chongqing University of Post and Telecommunications, China) Bin Cao (University of Electronic Science and Technology of China, China) Wei Huang (Chongqing University of Post and Telecommunications, China)

Dealing with the Untrustworthy Auctioneer in Combinatorial Spectrum Auction Miao Pan (University of Florida, USA)

Hongyan Li (Xidian University, China) Pan Li (Mississippi State University, USA) Yuguang Fang (University of Florida, USA)

Energizing Global Communications

Network-Wide Spectrum Situation Reconstruction using Total Variation Inpainting in Cognitive Radio Ad Hoc Networks

Paul Potier, CaLynna Sorrells, Yonghui Wang, Lijun Qian (Prairie View A&M University, USA) Husheng Li (University of Tennessee, USA)

Online Market Clearing in Dynamic Spectrum Auction Yaoyu Yang, Jing Wu, Chengnian Long (Shanghai Jiao Tong University, China) Bo Li (Hong Kong University of Science & Technology, Hong Kong)

Enhanced Asynchronous Cooperative Spectrum Sensing based on Dempster-Shafer Theory

Jian Liu, Jing Li, Keping Long (University of Electronic Science and Technology of China, China)

Improving Achievable Traffic Load of Secondary Users under GoS Constraints in Cognitive Wireless Networks

Liang Yu, Tao Jiang, Peng Guo, Yang Cao, Daiming Qu (Huazhong University of Science and Technology, China) Gao Peng (China Mobile Group Design Institute Co., Ltd., China)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 350 B WN02: LTE/WiMAX Networks

Chair: Rose Qingyang Hu (Utah State University, USA)

Dynamic Joint Switching Point Configuration and Resource Allocation in TDD-OFDMA Wireless Networks

Ahmad El-Hajj, Zaher Dawy (American University of Beirut, Lebanon)

Near-optimal Relay Station Placement for Power Minimization in WiMAX Networks

Dejun Yang, Xi Fang, Guoliang Xue (Arizona State University, USA)

Adaptive DRX Scheme for Beyond 3G Mobile Handsets Enjie Liu, Jie Zhang (University of Bedfordshire, United Kingdom) Weili Ren (NEC Technology (UK) Ltd., United Kingdom)

Analytical Investigation of LPF Mismatch in Direct Conversion Receivers Yiqing Zhou (Chinese Academy of Science, China) Zhengang Pan (University of Hong Kong, Hong Kong) Yucheng Zhang, Yuan Yao, Jinlong Hu (Chinese Academy of Sciences, China)

Scalability Analysis of Multi-tier Hybrid WiMAX-WiFi Multi-hop Network Alvin Ting, Kae Hsiang Kwong, Mazlan Abbas (MIMOS Berhad, Malaysia) Ivan Andonovic (University of Strathclyde, United Kingdom)

Flexible Window Adjustment Approach for IEEE 802.16m Sleep Mode Operation Chung-Hsien Hsu (Industrial Technology Research Institute, Taiwan) Kai-Ten Feng, Chung-Ju Chang (National Chiao Tung University, Taiwan)

Tuesday, 6 December 2011 • 10:00 – 12:00 Room: GRB 362 A WN03: Wireless Sensor Network Design Chair: Prathima Agrawal (Auburn University, USA)

Optimum Sampling in a Spatial-Temporally Correlated Wireless Sensor Network Ning Sun, Jingxian Wu (University of Arkansas, USA)

Performance Evaluation of IEEE 802.15.6 under Non-Saturation Condition Saeed Rashwand (University of Manitoba, Canada) Jelena Mišić (Ryerson University, Canada)

Lifetime Analysis for Wireless Sensor Network with Hexagonal Clustering Yonas Debessu, Hsiao-Chun Wu (Louisiana State University, USA) Shih Yu Chang, Scott CH Huang (National Tsing Hua University, Taiwan)

Spatio-Temporal Correlation-based Density Optimization in Wireless Underground Sensor Networks

Zhi Sun, Ian F. Akyildiz (Georgia Institute of Technology, USA)

A Gibbs Sampler Approach for Optimal Distributed Monitoring of Multi-channel Wireless Networks

Pallavi Arora (University of Houston, USA) Na Xia (Hefei University of Technology, China) Rong Zheng (University of Houston, USA) **Bio-Inspired Synchronization for Nanocommunication Networks** Sergi Abadal (Universitat Politècnica de Catalunya, Spain) Ian F. Akyildiz (Georgia Institute of Technology, USA)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 322 A/B AHSNO4: Wireless Sensor and Actor Networks II Chair: Mehmet Can Vuran (University of Nebraska-Lincoln, USA)

Pulse Switching for Static Event Sensing in Sensor Networks

Qiong Huo, Subir Biswas (Michigan State University, USA) Anthony T. Plummer, Jr (JHU/APL, USA)

Robust Distributed Least-Squares Estimation in Sensor Networks with Node Failures

Qing Zhou (Texas A&M University, USA) Soummya Kar (Princeton University, USA) Lauren Huie (Air Force Research Lab, USA) H. Vincent Poor (Princeton University, USA) Shuguang Cui (Texas A&M University, USA)

Opportunistic Sensing in Wireless Sensor Networks: Theory and Application Qilian Liang (University of Texas, Arlington, USA) Xiuzhen Cheng (George Washington University, USA) Dechang Chen (Uniformed Services University of the Health Sciences, USA)

Optimized Wireless Sensor Network Federation in Environmental Applications Fadi M. Al-Turjman, Hossam S. Hassanein, Mohamed Ibnkahla (Queen's University, Canada)

Energy-Efficient Quantization for Parameter Estimation in Inhomogeneous WSNs Sahar Movaghati, Masoud Ardakani (University of Alberta, Canada)

Optimized Connectivity Restoration in a Partitioned Wireless Sensor Network Fatih Senel, Mohamed Younis (University of Maryland Baltimore County, USA)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 330 A/B AHSNO5: Vehicular Networks II Chair: Véronique Vèque (University of Paris-Sud 11, France)

Wakeup Scheduling in Roadside Directional Sensor Networks

Jian Tang (Syracuse University, USA) Binhai Zhu (Montana State University, USA) Li Zhang (University of California, Davis, USA) Roberto Carlos Hincapie (Universidad Pontificia Bolivariana, Colombia)

Priority-based Rate Adaptation Using Game Theory in Vehicular Networks Jiancheng Ye, Mounir Hamdi

(Hong Kong University of Science & Technology, Hong Kong)

Communication Interoperability Model for Embedded Devices Marwane Ayaida (University of Reims Champagne Ardenne / CReSTIC, France) Haytem El Mehraz, Lissan Afilal (CReSTIC, France) Hacene Fouchal (Université de Reims Champagne-Ardenne, France)

Combining Cooperative Relaying and Analog Network Coding to Improve Network Connectivity and Capacity in Vehicular Networks Ahlem Khlass (ENSIIE, Higher School of Communications of Tunisia, France) Yacine Ghamri-Doudane (ENSIIE / Université Paris-Est, France) Haris Gacanin (Alcatel-Lucent Bell Labs, Belgium)

TSMU: A Time Synchronization Scheme for Mobile Underwater Sensor Networks Jun Liu, Zhaohui Wang, Zheng Peng, Michael Zuba, Jun-Hong Cui, Shengli Zhou (University of Connecticut, USA)

Modeling and Analysis of Bulk Bundle Release Schemes in Two-Hop Vehicular $\ensuremath{\mathsf{DTNs}}$

Maurice J. Khabbaz (Concordia University / Lebanese American University, Canada) Wissam Fawaz (Lebanese American University, Lebanon) Chadi Assi (Concordia University, Canada)

IEEE Global Communications Conference



AHSN06: Routing II Chair: Preetha Thulasiraman (Naval Postgraduate School, USA)

Bypassing Holes in Sensor Networks: Load-balance vs Latency

Goce Trajcevski, Fan Zhou (Northwestern University, USA) Roberto Tamassia (Brown University, USA) Besim Avci, Peter Scheuermann (Northwestern University, USA) Ashfaq Khokhar (University of Illinois, Chicago, USA)

Sleeping Multipath Routing a Trade-off between Reliability and Lifetime in Wireless Sensor Networks

Ou Yang, Wendi Heinzelman (University of Rochester, USA)

On the Information Propagation in Mobile Ad Hoc Networks Using Epidemic Routing

Zijie Zhang, Guoqiang Mao (University of Sydney, Australia) Brian Anderson (Australian National University / National ICT Australia, Australia)

XLR: Tackling the Inefficiency of Landmark-based Routing in Large Wireless Sensor Networks

Xuetao Wei, Nicholas Valler, Michalis Faloutsos, Harsha V. Madhyastha, Ting-Kai Huang (University of California, Riverside, USA)

Spatially Diffuse Pathsets for Robust Routing in Ad Hoc Networks Trisha Biswas, Rudra Dutta (North Carolina State University, USA)

Identifying Design Requirements for Wireless Routing Link Metrics

Nadeem Javaid (University of Paris East Créteil / LISSI, France) Muti Ullah (Gomal University, Pakistan) Karim Djouani (Tshwane University of Technology, South Africa)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 332 F

CQRM03: Multimedia Networking Chair: Chi Zhou (Illinois Institute of Technology, USA)

Downlink Power Control for VBR Video Streaming in Cellular Networks: A Majorization Approach

Yingsong Huang, Shiwen Mao, Yihan Li (Auburn University, USA)

Error-resilient Video Multicast with Layered Hybrid FEC/ARQ over Broadband Wireless Networks

Junfeng Jin (University of Science and Technology of China, China) Yusheng Ji (National Institute of Informatics, Japan) Baohua Zhao, Zhou Hao (University of Science and Technology of China, China) Zhi Liu (National Institute of Informatics, Japan)

Framework for Modeling Call Holding Time for VoIP Tandem Networks Imad AI Ajarmeh, James Yu, Mohamed Amezzian (DePaul University, USA)

Delay Analysis for Compressed Video Traffic over Two-Hop Wireless Moving Networks

Wei Song (University of New Brunswick, Canada)

A Loss-based Utility Function for Predicting IPTV Quality of Experience over an Overlay Network

Imad Abdeljaouad, Gajaruban Kandavanam, Ahmed Karmouch (University of Ottawa, Canada)

An Affect-based Approach for QoE evaluation in VoIP Systems

Abhishek Bhattacharya (Florida International University, USA)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 342 A CORMO4: Routing and Virtual Networks

Chair: Toshinori Tsuboi (Tokyo University of Technology, Japan)

Stochastic Strategic Routing Reduces Attack Effects

Gruia Calinescu, Sanjiv Kapoor, Kan Qiao, Junghwan Shin (Illinois Institute of Technology, USA)

Optimal Mapping of Virtual Networks

Gustavo Alkmim (State University of Campinas, Brazil) Daniel M. Batista (University of Sao Paulo, Brazil) Nelson L. S. da Fonseca (State University of Campinas, Brazil)

RPIM: Inferring BGP Routing Policies in ISP Networks

Wei Liang, Jingping Bi (Chinese Academy of Sciences, China) Yiting Xia (Beijing University of Posts and Telecommunications, China) Chengchen Hu (Xian Jiaotong University, China)

Opportunistic Bandwidth Sharing for Virtual Network Mapping

Sheng Zhang, Zhuzhong Qian, Bin Tang (Nanjing University, China) Jie Wu (Temple University, USA) Sanglu Lu (Nanjing University, China)

A Distributed Spatio-Temporal Event Correlation Protocol for Multi-Layer Virtual Networks

Rebecca Steinert, Sara Gestrelius, (Swedish Institute of Computer Science, Sweden)

A Proposed Topology Design and Admission Control Approach for Improved Network Robustness in Network Virtualization

Mika Mori (Nara Institute of Science and Technology, Japan) Takuji Tachibana (University of Fukui, Japan) Kentaro Hirata, Kenji Sugimoto (Nara Institute of Science and Technology, Japan)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 332 B

CRN02: Cooperative Spectrum Sensing I Chair: Ioannis Krikidis (University of Cyprus, Cyprus)

User Power Control Aided Cooperative Spectrum Sensing Schemes in Cognitive Radio Networks

Bin Shen (Inha University, Korea) Zheng Zhou (Beijing University of Posts and Telecommunications, China) Taiping Cui, Kyung Sup Kwak (Inha University, Korea)

A Coalition Formation Game for Energy-efficient Cooperative Spectrum Sensing in Cognitive Radio Networks with Multiple Channels

Xiaolei Hao, Man Hon Cheung, Vincent W.S. Wong, Victor CM Leung (University of British Columbia, Canada)

Energy-Constrained Cooperative Spectrum Sensing in Cognitive Radio Networks Xinxin Feng (Shanghai Jiao Tong University, China)

Xiaoying Gan (Shanghai Jiao Tong University / University of California, San Diego, China) Xinbing Wang (Shanghai Jiao Tong University, China)

Energy-Efficient Cooperative Spectrum Sensing in Cognitive Radio Networks Edward Chu Yeow Peh

(Nanyang Technological University / Institute for Infocomm Research, Singapore) Ying-Chang Liang (Institute for Infocomm Research, Singapore) Yong Liang Guan, Yiyang Pei (Nanyang Technological University, Singapore)

Distributed Cooperative Spectrum Sensing based on Weighted Average Consensus

Wenlin Zhang, Zheng Wang, Yi Guo, Hongbo Liu, Yingying Chen, Joseph Mitola (Stevens Institute of Technology, USA)

Binary Consensus for Cooperative Spectrum Sensing in Cognitive Radio Networks

Shwan Ashrafi, Mehrzad Malmirchegini, Yasamin Mostofi (University of New Mexico, USA)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 332 C

CSS02: Confidentiality, Authentication and Authorization Chair: Rui L. Aguiar

(University of Aveiro / Instituto de Telecomunicações, Portugal)

Updatable Key Management Scheme with Intrusion Tolerance for Unattended Wireless Sensor Network

Liangmin Wang, Tao Jiang (Jiangsu University, China) Xiaoyan Zhu (Xidian University, China)

Energizing Global Communications

Authenticating Strangers in Fast Mixing Online Social Networks Xinxin Zhao, Lingjun Li, Guoliang Xue (Arizona State University, USA)

Accountable Administration and Implementation in Operating Systems

Lei Zeng (University of Alabama, USA) Hui Chen (Virginia State University, USA) Yang Xiao (University of Alabama, USA)

Is That You? Authentication in a Network without Identities

Taehwan Choi, Hrishikesh B. Acharya (University of Texas, Austin, USA) Mohamed Gouda (National Science Foundation / University of Texas, Austin, USA)

Differential Cryptanalysis of Two Joint Encryption and Error Correction Schemes Qi Chai, Guang Gong (University of Waterloo, Canada)

An Authorization Model without Central Authority for Service Collaboration Ran Yang, Chuang Lin (Tsinghua University, China) Yixin Jiang (University of Waterloo, Canada) Xiaowen Chu (Hong Kong Baptist University, Hong Kong)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 332 D CSWS02: Software and Protocol Technologies Chair: Stephan Weiss (University of Strathclyde, United Kingdom)

Multi-Path Trust-based Secure AOMDV Routing in Ad Hoc Networks

Jing-Wei Huang (National Ilan University, Taiwan) Isaac Woungang (Ryerson University, Canada) Han-Chieh Chao (National Ilan University, Taiwan) Mohammad S. Obaidat (Monmouth University, USA) Ting-Yun Chi (National Taiwan University, Taiwan) Sanjay Kumar Dhurandher (Netaji Subhas Institute of Technology, India)

On Optimal Tiered Structures for Network Service Bundles Qian Lv (Western Digital, USA)

George N. Rouskas (North Carolina State University, USA)

RFID-enabled Logistic Flow Tracing in Supply Chains: Communication, Protocol, and Security

Yanjun Zuo, Timothy O'Keefe (University of North Dakota, USA)

The Design and Software Implementation of a MAC Protocol for Body-Coupled Communication Systems Alberto Breva (Philips Research, Netherlands)

Antonios Argyriou (University of Thessaly / CERTH, Greece)

ServiceChord: A Scalable Service Capability Interaction Framework for IMS Chi-Yuan Chen, Shih-Wen Hsu (National Dong Hwa University, Taiwan) Han-Chieh Chao (National Ilan University, Taiwan) Isaac Woungang (Ryerson University, Canada) Mohammad S. Obaidat (Monmouth University, USA)

A Rate-Energy-Distortion Analysis for Compressed-Sensing-Enabled Wireless Video Streaming on Multimedia Sensors

Scott M. Pudlewski, Tommaso Melodia (State University of New York, Buffalo, USA)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 332 E CT02: Channel Capacity

Chair: Besma Smida (Purdue University Calumet, USA)

MIMO Capacity with Per-antenna Power Constraint

Mai Vu (McGill University, Canada)

Analytical Lower Bounds on the Capacity of Deletion Channels Mojtaba Rahmati, Tolga M. Duman (Arizona State University, USA)

Achievable Rates over Insertion Channels Mojtaba Rahmati, Tolga M. Duman (Arizona State University, USA)

Capacity of Fading Gaussian Channel with an Energy Harvesting Sensor Node Ramachandran Rajesh, Vinod Sharma (Indian Institute of Science, India) Pramod Viswanath (University of Illinois, Urbana-Champaign, USA)

Throughput and Transmission Capacity of Underwater Networks with Randomly Distributed Nodes

Kostas Stamatiou (University of Notre Dame, USA) Paolo Casari, Michele Zorzi (Università degli Studi di Padova, Italy)

Graph-based Random Access for the Collision Channel without Feed-Back: Capacity Bound

Enrico Paolini (University of Bologna, Italy) Gianluigi Liva (German Aerospace Center, Germany) Marco Chiani (University of Bologna, Italy)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 342 B NGN02: Routing Chair: Stein Gjessing (University of Oslo, Norway)

Optimal Routing Strategy by Hose Model with Link-Traffic Bounds Yoshiki Kitahara, Eiji Oki (University of Electro-Communications, Japan)

geoDTN: Geographic Routing in Disruption Tolerant Networks Jó Ágila Bitsch Link, Daniel Schmitz, Klaus Wehrle

(RWTH Aachen University, Germany) Dynamic Compact Multicast Routing on Power-Law Graphs

Pedro Pedroso (Universitat Politècnica de Catalunya, Spain) Dimitri Papadimitriou (Alcatel-Lucent Bell, Belgium) Davide Careglio (Universitat Politecnica de Catalunya, Spain)

Effectiveness of Multi-Hop Negotiation on the Internet Hasan T. Karaoglu, Murat Yuksel (University of Nevada, Reno, USA)

Scalability and Resilience in Data Center Networks: Dynamic Flow Reroute as an Example

Adrian Tam, Kang Xi, H. Jonathan Chao (Polytechnic Institute of New York University, USA)

Resilient Routing under Hierarchical Automatic Addressing

Yang Song, Lixin Gao (University of Massachusetts, Amherst, USA) Kenji Fujikawa (NICT, Japan)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 342 C

SAC03: Storage in Flash and Emerging Memory Technologies

Chair: Bane Vasi (University of Arizona, USA)

Soft Information for LDPC Decoding in Flash: Mutual-Information Optimized Quantization

Jiadong Wang, Thomas Courtade (University of California, Los Angeles, USA) Hari Shankar (Inphi Corp., USA) Richard Wesel (University of California, Los Angeles, USA)

Statistical Analysis of Flash Memory Read Data

Jaekyun Moon, Jaehyeong No (KAISŤ, Korea) Sangchul Lee, Sangsik Kim, Joongseob Yang (Hynix Semiconductor, Korea)

Iterative Cross-entropy Encoding for Memory Systems with Stuck-at Errors Euiseok Hwang (LSI Corporation, USA)

Balakrishnan Narayanaswamy, Rohit Negi, B. V. K. Vijaya Kumar (Carnegie Mellon University, USA)

Time-Space Constrained Codes for Phase-Change Memories

Minghai Qin, Eitan Yaakobi, Paul H. Siegel (University of California, San Diego, USA)

Hierarchical Constrained Coding for Floating Gate Coupling Mitigation in Flash Memory

Ravi Hiranand Motwani (Intel Corporation, USA)

Coding for Correcting Insertions and Deletions in Bit-patterned Media Recording

Anantha Raman Krishnan, Bane Vasić (University of Arizona, USA)

FIEEE Global Communications Conference

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 342 C

SAC05: Energy-Efficient Access Networks Chair: Mamoun Guenach (Bell Laboratories, Alcatel-Lucent, Belgium)

Towards Energy-efficient Packet Processing in Access Nodes Koen Hooghe, Mamoun Guenach (Bell Laboratories, Alcatel-Lucent, Belgium)

Energy-Efficient DSL using Vectoring

Giuseppe Marrocco, Martin Wolkerstorfer, Tomas Nordström, Driton Statovci (Telecommunications Research Vienna, Austria)

Green Provisioning of Cloud Services over Wireless-Optical Broadband Access Networks

Abu Ahmed S. Reaz (University of California, Davis, USA) Vishwanath Ramamurthi (AT&T Labs, USA) Massimo Tornatore (Politecnico di Milano / University of California, Davis, Italy) Biswanath Mukherjee (University of California, Davis, USA)

Energy-Efficient Rate Allocation for Multi-homed Streaming Service over Heterogeneous Access Networks

JooHyung Lee, Youngmi Lim, Jihwan Kim, Jun Kyun Choi (KAIST, Korea) Choi Seong Gon (Chungbuk National University, Korea)

Energy-Efficient Dimensioning with Traffic Engineering for Municipal Mesh Access Networks

Ming Xia (Ericsson Research US, USA) Yasunori Owada, Masugi Inoue, Hiroaki Harai (National Institute of Information and Communications Technology, Japan)

Energy and QoS Evaluation for a V2R Network

Wanod Kumar, Adnan Muhtar, Bilal R. Qazi, Jaafar Elmirghani (University of Leeds, United Kingdom)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 342 E SPC02: Channel Estimation, Equalization and Decoding II Chair: Yuli Yang (KAUST, Saudi Arabia)

Joint Robust Weighted LMMSE Transceiver Design for Dual-Hop AF Multiple-Antenna Relay Systems

Chengwen Xing (Beijing Institute of Technology / University of Hong Kong, China) Shaodan Ma (University of Hong Kong, China) Fei Zesong (Beijing Institute of Technology, China) Yik-Chung Wu (University of Hong Kong, Hong Kong) Jingming Kuang (Beijing Institute of Technology, China)

Self-Iterating Soft Equalizer

Seongwook Jeong (University of Minnesota, USA) Jaekyun Moon (KAIST, Korea)

An Iterative Semidefinite and Geometric Programming Technique for the SINR Balancing in Two-way Relay Network

Georgia Bournaka, Kanapathippillai Cumanan, Sangarapillai Lambotharan (Loughborough University, United Kingdom) Fotis Lazarakis

(NCSR Demokritos, Institute of Informatics / Telecommunications, Greece)

Novel Periodogram and Capon Spectral Analysis based on Nonuniform Sampling

Josep Font-Segura, Gregori Vazquez, Jaume Riba (Technical University of Catalonia, Spain)

A New Parallel Carrier Recovery Architecture for Intradyne Coherent Optical Receivers in the Presence of Laser Frequency Fluctuations

Pablo Gianni, Graciela Corral-Briones, Carmen Rodríguez, Hugo Carrer (National University of Córdoba, Argentina) Mario R. Hueda (National University of Cordoba, CONICET, Argentina)

Blind Carrier Frequency Offset Estimation for MIMO OFDMA Uplink

Weile Zhang (Xian Jiaotong University, China) H. Chen (University of Tokyo, Japan) Qinye Yin (Xian Jiaotong University, China) Tomoaki Ohtsuki (Keio University, Japan) Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 342 F WCO5: MIMO II Chair: Yao-Win Peter Hong (National Tsing Hua University, Taiwan)

Gildii. Tau-will relei nully (National Tsing Hua Oniversity, Taiwan)

Transceiver Design for AF MIMO Two-Way Relay Systems with Imperfect Channel Estimation

Jun Zou, Wei Liu (Shanghai Jiao Tong University, China) Ming Ding (Shanghai Jiaotong University / Sharp Electronics Shanghai, China) HanWen Luo, Hui Yu (Shanghai Jiao Tong University, China)

Two-way Amplify-and-Forward MIMO Relay Networks with Antenna Selection Gayan Amarasuriya, Chintha Tellambura, Masoud Ardakani (University of Alberta, Canada)

Joint Relay Antenna Selection and Zero-Forcing Spatial Multiplexing for MIMO Two-Way Relay with Physical-Layer Network Coding

Hui Gao (Beijing University of Posts and Telecommunications, China) Xin Su (Tsinghua University, China) Tiejun Lv, Zhang Zhang

(Beijing University of Posts and Telecommunications, China)

User Relaying in a Two-user MIMO Broadcast Channel Jong Yeol Ryu, Eun Young Ahn, Wan Choi

(Korea Advanced Institute of Science and Technology, Korea)

MMSE-based Non-Regenerative Parallel MIMO Relaying with Simplified Receiver

Chao Zhao, Benoit Champagne (McGill University, Canada)

Optimal Network Design for Two-way MIMO Relay Systems using Analog Network Coding

Enoch Lu, Zihao You, I-Tai Lu (Polytechnic Institute of New York University, USA)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 350 D/E/F WC06: OFDM I

Chair: Hani Mehrpouyan (Chalmers University of Technology, Sweden)

Receiver Iteration Reduction of an N-Continuous OFDM System with Cancellation Tones

Masaya Ohta, Masashi Okuno, Katsumi Yamashita (Osaka Prefecture University, Japan)

Simultaneous Carrier Frequency Offset Estimation for Multi-point Transmission in OFDM Systems

Yuh-Ren Tsai, Hao-Yun Huang, Yen-Chen Chen, Kai-Jie Yang (National Tsing Hua University, Taiwan)

Adaptive OFDM Bit Loading Algorithm for High Data Rate Through-Metal Transmission

Magdalena Bielinski, Kevin Wanuga, Richard Primerano, Moshe Kam, Kapil Dandekar (Drexel University, USA)

Immune Evolutionary Algorithm to Reduce PAPR of OFDM Signals Using PTS Technique

Jun Hou

Energizing Global Communications

(Xidian University, State Key Laboratory of Integrated Services Networks, China) Ge Jianhua, Songtao Huang (XiDian University, China)

Bit Error Rate Performance of Linear Companding Transforms for PAPR Reduction in OFDM Systems

Yasir Rahmatallah, Nidhal Bouaynaya, Seshadri Mohan (University of Arkansas, Little Rock, USA)

Channel Estimation Assisted Time and Frequency Synchronization based on Interspersed Pilots for OFDMA Systems Xueli Ding, Yabo Li, Aiping Huang (Zhejiang University, China)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 351 A/B WC07: Beamforming I Chair: Youngchul Sung (KAIST, Korea)

Uplink LMMSE Beamforming Design for Cellular Networks with AF MIMO

Relaying

Chengwen Xing (Beijing Institute of Technology / University of Hong Kong, China) Minghua Xia (King Abdullah University of Science and Technology, Saudi Arabia) Shaodan Ma, Yik-Chung Wu (University of Hong Kong, Hong Kong)

Performance Analysis of Orthogonal Beamforming with User Selection in MIMO Broadcast Channels

Serdar Ozyurt, Murat Torlak (University of Texas, Dallas, USA)

Coordinated Eigen Beamforming for Multi-Pair MIMO Two-Way Relay Network Haiyang Xin, Yuexing Peng

(Beijing University of Posts & Telecommunications, China) Chenwei Wang (University of California, Irvine, USA) Yunchuan Yang, Wenbo Wang (Beijing University of Posts & Telecommunications, China)

Opportunistic Collaborative Beamforming with Phase-compensation and limited Feedback

Haifen Yang (University of Electronic Science and Technology of China, China)

Coding the Beams: Improving Beamforming Training in mmWave Communication System

Y. Ming Tsang, Ada S. Y. Poon (Stanford University, USA) Sateesh Addepalli (Cisco, USA)

Cooperative Precoding, Beamforming and Power Allocation in MU-MIMO Relay Networks

Neda Aboutorab, Wibowo Hardjawana, Branka Vucetic (University of Sydney, Australia)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 351 D/E

WC08: Wireless Systems Chair: Simone Silvestri (University of Rome "La Sapienza", Italy)

SSS Detection Scheme for Neighbor Cell Search in 3GPP LTE Systems Baojin Li, Gang Sun, Wang Xin (Fujitsu Research and Development Center, Beijing, China)

Performance Gains of Single-Frequency Dual-Cell HSDPA Danlu Zhang, Payan Kumar Vitthaladayuni, jilai Hay, Bibby Mobar

Danlu Zhang, Pavan Kumar Vitthaladevuni, Jilei Hou, Bibhu Mohanty (Qualcomm, USA)

Link Budget Analysis and Field Experiments on Mobile WiMAX System in Azumino City

Kenko Ota, Hideaki Matsue, Satoru Miyazawa, Satoshi Nanamatsu, Yukihiro Hirata (Tokyo University of Science, Suwa, Japan)

Akio Hasui, Masahiro Yamazaki (Azumino Ćity, Japan)

Takakazu Namera, Hiroshi Fukui, Matthew Harvey (Commuture Corp., Japan) Hajime Miyajima, Yoshiaki Yazawa (Azumino Networks Community, Japan) Yoshihiro Kainuma, Takuma Yui (Tokyo University of Science, Suwa, Japan)

Waveform Design for Sum Rate Optimization in Time-Reversal Multiuser Downlink Systems

Yu-Han Yang (University of Maryland, College Park, USA) Beibei Wang (Qualcomm Inc., USA) K. J. Ray Liu (University of Maryland, USA)

Digital Compensation of Tx/Rx I/Q Imbalance in TD-SCDMA Systems Balachander Narasimhan, Naofal Al-Dhahir (University of Texas, Dallas, USA) Zoran Zvonar (Media Tek / MediaTek Wireless Technology, USA)

Energy-Efficient Deployment of Airships for High Altitude Platforms: A Deterministic Annealing Approach

Xuyu Wang, Xinbo Gao, Ru Zong (Xidian University, China)

Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 351 C/F WNO4: Cognitive Networking II Chair: Seshadri Mohan (University of Arkansas, Little Rock, USA)

Chair: Seshadri Monan (University of Arkansas, Little Rock, USA)

Centralized Scheme for Joint Relay Selection and Channel Access in Partially-Sensed Cognitive Radio Cooperative Networks Changqing Luo (Huazhong University of Science and Technology, China)

F. Richard Yu (Carleton University, Canada) Min Chen (Seoul National University, Korea) Laurence T. Yang (St. Francis Xavier University, Canada)

Cooperative Spectrum Sensing with a Progressive MAP Detection Algorithm Guoqing Zhou, Jingxian Wu, Kazem Sohraby (University of Arkansas, USA)

Collaborative Compressive Sensing based Dynamic Spectrum Sensing and Mobile Primary User Localization in Cognitive Radio Networks Lanchao Liu, Zhu Han (University of Houston, USA) Zhiqiang Wu (Wright State University, USA) Lijun Qian (Prairie View A&M University, USA)

A Random Censoring Scheme for Cooperative Spectrum Sensing Jingwei Yao, Ka-Cheong Leung, Victor O. K. Li (University of Hong Kong, China)

PG-Sensing: Progressive Out-of-band Spectrum Sensing for Cognitive Radio Kyungtae Kim, Yan Xin, Sampath Rangarajan (NEC Labs America, USA)

A Distributed Spectrum Sharing Method for Improving Coexistence of IEEE 802.15.4 Networks

Hesham Mahmoud ElSawy, Ekram Hossain, Sergio Camorlinga (University of Manitoba, Canada)

Tuesday, 6 December 2011 • 13:30 - 15:30 Room: GRB 350 B

WN05: 802.11 Wireless Networks Chair: Joon Yoo (Bell Labs, Alcatel-Lucent, Korea)

On an Efficient Estimation of Available Bandwidth for IEEE 802.11-based Wireless Networks

Peng Zhao, Xinyu Yang, Chiyong Dong (Xian Jiaotong University, China) Shusen Yang (Imperial College London, United Kingdom) Sulabh Bhattarai (Towson University, USA) Wei Yu (Towson University, USA)

Packet Length Adaptation in WLANs with Hidden Nodes and Time-Varying Channels

Michael Krishnan, Ehsan Haghani, Avideh Zakhor (University of California, Berkeley, USA)

A Method for Estimating Access Delay Distribution in IEEE 802.11 Networks Ehsan Haghani, Michael Krishnan, Avideh Zakhor (University of California, Berkeley, USA)

A Novel Channel Probing/Scanning Scheme for Secure Fast Handoff in IEEE 802.11-based Wireless Networks

Ye Yan, Yi Qian (University of Nebraska–Lincoln, USA) Rose Qingyang Hu (Utah State University, USA)

Bandwidth Monitoring in Multi-rate 802.11 WLANs with Elastic Traffic Awareness

Claudio Rossi, Claudio E. Casetti, Carla-Fabiana Chiasserini (Politecnico di Torino, Italy)

Channel Bounding and MAC Protection Mechanisms for 802.11ac

Michelle Gong (Intel, USA) Brian Hart (Cisco Systems, USA) Liangfu Xia (Microsoft, China) Roy Want (Intel Research, USA)

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Tuesday, 6 December 2011 • 13:30 – 15:30 Room: GRB 362 A

WN06: Multicast & Broadcast in Wireless Networks Chair: Saewoong Bahk (Seoul National University, Korea)

An Efficient MAC Multicast Protocol for Reliable Wireless Communications with Network Coding

Xi Deng, Yuanyuan Yang (Stony Brook University, USA)

Handover Delay Reduction and Buffer-based Data Recovery Scheme for Inter Multicast Broadcast Service Zone

Sih-Kai Li (National Tsing Hua University, Taiwan) Jen-Shun Yang (Industrial Technology Research Institute, Taiwan) Ching-Te Chiu, Po-Ting Yeh (National Tsing Hua University, Taiwan) Jenq-Neng Hwang (University of Washington, USA)

YMMV: Multiple Session Multicast with MIMO

Hong Xu, Jin Jin, Baochun Li (University of Toronto, Canada)

Multicast Path Construction Scheme for Multi-Hop Wireless Relay Networks Wen-Hsing Kuo (Yuan Ze University, Taiwan)

Multicast/Broadcast Service over Heterogeneous Networks Kai Ying, Hui Yu, Xinbing Wang, HanWen Luo (Shanghai JiaoTong University, China)

An Energy Efficient Cooperative Multicast Transmission Scheme with Power Control

Na Guan, Yiqing Zhou, Hang Liu, Lin Tian, Jinglin Shi (Chinese Academy of Sciences, China)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 322 A/B

AHSN07: Wireless Sensor and Actor Networks III Chair: Burak Kantarci (University of Ottawa, Canada)

Understanding Link Feature of Wireless Sensor Networks in Outdoor Space: A Measurement Study

Ji Luo (Google, USA) Xing Xu (USC, USA) Qian Zhang (Hong Kong University of Science & Technology, Hong Kong)

A Cooperative Communication Scheme based on Dynamic Coalition Formation Game in Clustered Wireless Sensor Networks Dan Wu, Cai Yueming (PLAUST, China)

CStorage: Distributed Data Storage in Wireless Sensor Networks Employing Compressive Sensing

Ali Talari, Nazanin Rahnavard (Oklahoma State University, USA)

Re-usable Resources in Wireless Sensor Networks Sharief M.A. Oteafy, Hossam S. Hassanein (Queen's University, Canada)

Interfering Mobile Target Motion Planning in Wireless Sensor Networks

Jia-Liang Lu, Zhengzheng Xu (Shanghai JiaoTong University, China) Lionel Croix, Anis Darwich (INSA Lyon, France) Min-You Wu (Shanghai JiaoTong University, China)

Analysis on Data Collection with Multiple Mobile Elements in Wireless Sensor Networks

Liang He (University of Victoria / Nankai University, Canada) Jianping Pan (University of Victoria, Canada) Jingdong Xu (Nankai University, China)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 330 A/B AHSN08: Wireless Mesh Networking Chair: Damla Turgut (University of Central Florida, USA)

Multipath Routing Design for Wireless Mesh Networks

Long Le (NEC Laboratories Europe, Germany)

WiRS: Resource Reservation and Traffic Regulation for QoS Support in Wireless Mesh Networks

Ali El Masri (University of Technology of Troyes, France) Lyes Khoukhi (University of Technology of Troyes, Canada) Ahmad Sardouk, Majdi Mansouri, Dominique Gaïti (University of Technology of Troyes, France)

Performance Evaluation of a Hybrid Mesh and Sensor Network Roberto Riggio, Tinku Rasheed (Create-Net Research, Italy) Sabrina Sicari (University of Insubria, Italy)

Modified HWMP for Wireless Mesh Networks with Smart Antennas Muhammad Irfan Rafique, Marco Porsch, Thomas Bauschert (Chemnitz University of Technology, Germany)

Adaptive Resource Management in Sustainable Energy Powered Wireless Mesh Networks

Lin X. Cai (Princeton University, USA) Liu Yongkang, Tom H. Luan, Sherman Shen, Jon Mark (University of Waterloo, Canada) H. Vincent Poor (Princeton University, USA)

Performance of Distributed Algorithms in DTNs: Towards an Analytical Framework for Heterogeneous Mobility

Andreea M. Picu (ETH Zurich, Switzerland) Thrasyvoulos Spyropoulos (EURECOM, France)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 332 A AHSNO9: Routing III Chair: Ilker Demirkol

(Universitat Politecnica de Catalunya / i2CAT Foundation, Spain)

Analytical Bounds on the Critical Density for Percolation in Wireless Multi-hop Networks

Seh Chun Ng, Guoqiang Mao (University of Sydney, Australia) Brian Anderson (Australian National University, National ICT Australia, Australia)

Performance Modeling for Two-hop Relay with Erasure Coding in MANETs Jiajia Liu (Tohoku University, Japan)

Xiaohong Jiang (Future University-Hakodate, Japan) Hiroki Nishiyama, Nei Kato (Tohoku University, Japan)

Resource Allocation in Ad Hoc Networks with Two-Hop Interference Resolution Stéphane Pomportes (Université de Paris-Sud 11, France)

Anthony Busson (University of Paris 11 / Institute of Fundamental Electronics, France) Joanna Tomasik (Supélec, France) Véronique Vèque (University of Paris-Sud 11, France)

Performance Modeling of Routing Dependability in Home Networks

Hanan Saleet, Sagar Naik (University of Waterloo, Canada) Rami Langar (UPMC - University of Paris 6, France) Raouf Boutaba (University of Waterloo, Canada) Amiya Nayak (SITE, University of Ottawa, Canada) Vineet Srivastava (Cistech Limited, Canada)

Coding and Interference Aware Path Bandwidth Estimation in Multi-hop Wireless Networks

Ronghui Hou (Xidian University, China) Sikai Qu, Hongfei Zeng, King-Shan Lui (University of Hong Kong, Hong Kong) Jiandong Li (Xidian University, China)

Distributed Low Redundancy Broadcast for Uncoordinated Duty-Cycled WANETs

Bin Tang, Baoliu Ye (Nanjing University, China) Jue Hong (Chinese Academy of Sciences, China) Kun You, Sanglu Lu (Nanjing University, China)

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Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 332 F CQRM05: QoS Chair: Koichi Asatani (Kogakuin University, Japan)

QoS Traffic Engineering for Self-adaptive Resource Allocation in MAI-affected Wireless Networks

Enzo Baccarelli, Nicola Cordeschi, Valentina Polli (University of Rome, Sapienza, Italy)

QoS-Aware Retransmission with Network Coding based on Adaptive Cooperation with IEEE 802.11e EDCA Yosuke Tanigawa (Osaka Prefecture University, Japan) Jong-Ok Kim (Korea University, Korea) Hideki Tode (Osaka Prefecture University, Japan)

Fault Tolerant AP Placement with QoS Constraint in Wireless Local Area Networks

Kunxiao Zhou, Xiaohua Jia, Liming Xie, Yanan Chang (City University of Hong Kong, Hong Kong)

Improving QoS for ECG Data Transmission with Enhanced Admission Control in EDCA-based WLANs

Yong woon Ahn, Chaitanya Belwal, Albert M. K. Cheng (University of Houston, USA) Jinsuk Baek (Winston-Salem State University, USA)

Stochastic Delay Bound for Heterogeneous Aggregation in Sensor Networks Yiping Deng, Chuang Lin, Fengyuan Ren (Tsinghua University, China)

Fairness with N Rate N+1 Color Marking on Cascade Aggregation for Access Network

Yu Nakayama, Noriyuki Oota (NTT Corporation, Japan)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 332 B CRNO3: Cooperative Spectrum Sensing II Chair: Qinghe Du (Texas A&M University, USA)

Selective Cooperative Spectrum Sensing in Cognitive Radio Networks Ala Abu Alkheir, Mohamed Ibnkahla (Queen's University, Canada)

Optimization of Cooperative Spectrum Sensing in Multiple-Channel Cognitive Radio Networks

Huogen Yu, WanBin Tang, Shaoqian Li (University of Electronic Science and Technology of China, Taiwan)

A Cooperative Spectrum Sensing Scheme without Dedicated Reporting

Channels: Interference Impact on Primary Users Yulong Zou, Yu-Dong Yao (Stevens Institute of Technology, USA) Baoyu Zheng (Nanjing University of Posts and Telecommunications, China)

Tri-State Spectrum Sensing and Erasure-Injected Probabilistic Inference for Cognitive Radios

Phisan Kaewprapha, Tiffany Jing Li (Lehigh University, USA) Yinhui Yu (Jilin University, China)

Enforcing Cooperative Spectrum Sensing in Cognitive Radio Networks Yogesh Reddy Kondareddy, Prathima Agrawal (Auburn University, USA)

A Novel Spectrum Handoff Scheme with Spectrum Admission Control in Cognitive Radio Networks

Chengyu Wu, Chen He, Lingge Jiang (Shanghai Jiaotong University, China) Yunfei Chen (University of Warwick, United Kingdom)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 332 C CSSO3: Intrusion Detection I

Chair: Keesook J. Han (Air Force Research Laboratory, USA)

Stable Topology Support for Tracing DDoS Attackers in MANET Yinan Jing, Xueping Wang, Lili Zhang, Gendu Zhang (Fudan University, China) Mitigating DDoS Attacks using Protection Nodes in Mobile Ad hoc Networks Minda Xiang, Yu Chen (State University of New York, Binghamton, USA) Wei-Shinn Ku (Auburn University, USA) Zhou Su (Waseda University, Japan)

A Modified Epidemic Model for Virus Spread Control in Wireless Sensor Networks

Shensheng Tang (Missouri Western State University, USA)

Collaborative Network Defense with Minimum Disclosure Andreas Berger, Jacopo Cesareo, Alessandro D'Alconzo (Telecommunications Research Center Vienna, Austria)

Web DDoS Detection Schemes based on Measuring User's Access Behavior with Large Deviation Jin Wang, X. L. Yang, Keping Long (University of Electronic Science and Technology of China, China)

Memory-Efficient Hypercube Flow Table for Packet Processing on Multi-Cores Dawei Wang, Yibo Xue (Tsinghua University, China) Yingfei Dong (University of Hawaii, USA)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 332 D CSWSO3: Multimedia QoS Provisioning Chair: Simone Silvestri (University of Rome "La Sapienza", Italy)

Scalable Video Adaptation in Wireless Home Networks with a Mixture of IPTV and VoD Users

Tiantian Guo, Jianfei Cai, Chuan Heng Foh (Nanyang Technological University, Singapore)

Wireless Video Streaming QoS Guarantee based on Virtual Leaky Bucket

Zhengyong Feng (State University of New York, Buffalo / University of Electronic Science and Technology of China, USA) Wen Guangjun (University of Electronic Science and Technology of China, China) Zixuan Zou (Huawei Technologies Co. Lltd, China)

Chang Wen Chen (State University of New York, Buffalo, USA)

Diverse QoS Support in Multimedia Communication with Multiple MAC Layer Queues using FSMC

Penghui Mi, Xianbin Wang, Muhammad Ajmal Khan (University of Western Ontario, Canada)

Quality-oriented Video Delivery over LTE using Adaptive Modulation and Coding Amit Pande (University of California, Davis, USA) Vishwanath Ramamurthi (AT&T Labs, USA) Prasant Mohapatra (University of California, Davis, USA)

Niching Particle Swarm Optimization Algorithm for Service Composition Jianxin Liao, Yang Liu, Xiaomin Zhu, Tong Xu, Jingyu Wang

(Beijing University of Posts and Telecommunications, China) A Playback Interruption Model of P2P VoD Streaming System

Guangqing Deng, Ting Wei (Beijing Jiaotong University, Ćhina) Changjia Chen (North JiaoTong University, China)

Zhu Wei, Wang, Dengrong Wu (Shanghai Synacast Media Tech, China)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 332 E CTO3: Transmission Techniques Chair: Leszek Szczecinski (INRS-EMT, Canada)

A Low Complexity User Grouping based Multiuser MISO Downlink Precoder Saif Khan Mohammed, Erik G. Larsson (Linköping University, Sweden)

Optimal Transmission over a Fading Channel with Imperfect Channel State Information

Yichuan Hu, Alejandro Ribeiro (University of Pennsylvania, USA)

Reduction of the Peak Interference to Carrier Ratio of OFDM Signals Besma Smida (Purdue University Calumet, USA)

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New General Approach to the Design of Arbitrary Radix-4 QAM Sequences for Low PMEPR and High Code-Rate

Scott CH Huang (National Tsing Hua University, Taiwan) Hsiao-Chun Wu (Louisiana State University, USA)

Constellation and Interleaver Design for BICM

Md. Jahangir Hossain (University of British Columbia, Okanagan, Canada) Alex Alvarado (University of Cambridge, United Kingdom) Leszek Szczecinski (INRS-EMT, Canada)

Adaptive Incremental Redundancy for HARQ Transmission with Fully Outdated CSI

Leszek Szczecinski (INRS-EMT, Canada) Pierre Duhamel (Lss Supelec / CNRS, France) Moshiur Rahman (University of Trento, Italy)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 342 A NGN03: TCP+IP Chair: Songtao Guo (Chongging University, China)

Beneficial Transparent Deployment of SCTP: The Missing Pieces

Michael Welzl (University of Oslo, Norway) Florian Niederbacher (University of Innsbruck, Austria) Stein Gjessing (University of Oslo, Norway)

MCTCP: A Multipath Transport Shim Layer

Michael Scharf, Thomas-Rolf Banniza (Alcatel-Lucent Bell Labs, Germany)

An Effective Approach to Preventing TCP Incast Throughput Collapse for Data Center Networks

Hongyun Zheng (Beijing Jiaotong University, China) Chunming Qiao (State University of New York, Buffalo, USA)

Green IP over WDM Networks: Solar and Wind Renewable Sources and Data Centres

Xiaowen Dong, Taisir El-Gorashi, Jaafar Elmirghani (University of Leeds, United Kingdom)

Analytical Model for Congestion Control and Throughput with TCP CUBIC Connections

Sudheer Poojary, Vinod Sharma (Indian Institute of Science, India)

Ethernet-Services Transport Protocol for Carrier Ethernet Networks Claudio I. Estevez, Sergio Angulo (University of Chile, Chile) Georgios Ellinas (University of Cyprus, Cyprus) Gee-Kung Chang (Georgia Tech, USA)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 342 B ONSO1: Optical Access Networks Chair: Pin-Han Ho (University of Waterloo, Canada)

Monitoring Trail Allocation for SRLG Failure Localization

Wei He (University of Waterloo, Canada) Bin Wu (University of Electronic Science and Technology of China, China) Pin-Han Ho (University of Waterloo, Canada) János Tapolcai (Budapest University of Technology and Economics, Hungary)

Optimization of Token Holding Times in Split Light Trail Networks Wenjie Chen, Yukinobu Fukushima, Tokumi Yokohira (Okayama University, Japan)

Hybrid FRR/p-Cycle MPLS Link Protection Design Chang Cao (Beijing University of Posts and Telecommunications, China) George N. Rouskas (North Carolina State University, USA)

Fiber Fault Management and Protection Solution for Ring-and-Spur WDM/TDM Long Reach PON

Maged Abdullah Esmail (King Saud University, Saudi Arabia) Habib Fathallah (Université Laval, Canada / King Saud University, Saudi Arabia)

Taking Turns with Adaptive Cycle Time and Immediate Tagging Ahmed H. Helmy, Habib Fathallah (King Saud University, Saudi Arabia)

Partial Spatial Protection for Differentiated Reliability in FSTR-based Metro Ethernet Networks

Dong Mei Shan, Chua Kee Chiang, Mohan Gurusamy, Jian Qiu (National University of Singapore, Singapore)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 342 D

SAC04: Distributed Storage and Coding Theory Chair: Alex Dimakis (University of Southern California, USA)

Information-theoretically Secure Regenerating Codes

Nihar B Shah (University of California, Berkeley, USA) K. V. Rashmi (Indian Institute of Science, India) P. Vijay Kumar (Indian Institute of Science / University of Southern California, India)

Minimization of Storage Cost in Distributed Storage Systems with Repair Consideration

Quan Yu (City University of Hong Kong, Hong Kong) Kenneth W. Shum (Institute of Network Coding, Hong Kong) Chi Wan Sung (City University of Hong Kong, Hong Kong)

Bandwidth-Aware Replica Placement for Peer-to-Peer Storage Systems

Yu-Chih Tung (National Taiwan University, Taiwan) Kate Ching-Ju Lin (Academia Sinica, Taiwan) Cheng-Fu Chou (National Taiwan University, Taiwan)

Efficient Algorithms to Find All Small Error-Prone Substructures in LDPC Codes Xiaojie Zhang, Paul H. Siegel (University of California, San Diego, USA)

NPML Detection Employing IIR Noise-Prediction with Application to Magnetic Tape Storage

Sedat Oelcer (IBM Zurich Research Laboratory, Switzerland) Robert Hutchins (IBM Tucson, USA)

Performance of an SC-FDE SATCOM System in Block-Time-Invariant Orthogonal MIMO Channels

Robert T. Schwarz, Andreas Knopp (Federal Office of the Bundeswehr for Information Technology, Germany) Berthold Lankl (University of Federal Armed Forces Munich, Germany)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 342 D SAC06: Energy-Efficient Wired Networks Chair: Jaafar Elmirghani (University of Leeds, United Kingdom)

Network Power Management: Models and Heuristic Approaches Rosario G. Garroppo, Stefano Giordano, Gianfranco Nencioni, Maria Grazia Scutellà (University of Pisa, Italy)

A Distributed Link Management Algorithm for Energy Efficient IP Networks Steven S. W. Lee (National Chung Cheng University, Taiwan) Po-Kai Tseng (Academia Sinica, Taiwan) Alice Chen (ITRI, Taiwan)

Rightsizing Bundle Link Capacities for Energy Savings in the Core Network Lin Liu, Byrav Ramamurthy (University of Nebraska-Lincoln, USA)

On the Energy Efficiency of Centralized and Decentralized Management for Reservation-based Networks

Anne-Cecile Orgerie (ENS Lyon / INRIA RESO, France) Laurent Lefevre (INRIA, France) Isabelle Guerin-Lassous (Université de Lyon - LIP, France)

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Manycasting: Energy-Efficient Multicasting in WDM Optical Unicast Networks Arush G. Gadkar, Jeremy Plante (University of Massachusetts Dartmouth, USA) Vinod M. Vokkarane (Massachusetts Institute of Technology / University of Massachusetts Dartmouth, USA)

Energy-Efficient Cloud Services over Wavelength-Routed Optical Transport Networks

Burak Kantarci, Hussein T Mouftah (University of Ottawa, Canada)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 342 E

SPC03: Beam-forming and Multi-antenna Systems I Chair: Weifeng Su (State University of New York, Buffalo, USA)

Efficient Coordinated Multicell Beamforming with Per-Base-Station Power Constraints

Duy H. N. Nguyen, Tho Le-Ngoc (McGill University, Canada)

Beamforming in Correlated MISO Systems with Channel Estimation Error and Feedback Delay

Abdulla Firag, Peter J Smith (University of Canterbury, New Zealand) Himal A Suraweera (Singapore University of Technology and Design, Singapore) Arumugam Nallanathan (King's College London, United Kingdom)

Downlink Beamforming for FDD Systems with Precoding and Beam Steering Saeed Moradi, Roya Doostnejad, Glenn Gulak (University of Toronto, Canada)

On Transceiver Beamformer Design for Multi-Source Multi-Destination Wireless Networks

Fuyu Chen, Weifeng Su, Stella N. Batalama (State University of New York, Buffalo, USA) John D. Matyjas (Air Force Research Laboratory, USA)

Robust Multicell Downlink Beamforming based on Second-Order Statistics of Channel State Information

Dhananjaya Ponukumati (Jacobs University Bremen, Germany) Feifei Gao (Tsinghua University, China) Mathias Bode (Jacobs University, Germany)

An Iterative Algorithm for Downlink Multi-cell Beam-Forming

Tuan Anh Le, Mohammad Reza Nakhai (King's College London, United Kingdom)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 342 F

WC09: MIMO III

Chair: Michail Matthaiou (Chalmers University of Technology, Sweden)

Efficient Limited Feedback Schemes for Network MIMO Systems

Donghyun Kim (Seoul National University, Korea) Oh-Soon Shin (Soongsil University, Korea) Kwang Bok Lee (Seoul National University, Korea)

Predictive Unitary Precoding for Spatial Multiplexing Systems in Temporally Correlated MIMO Channels with Delayed Limited Feedback Yu Zhang, Dalin Zhu, Zhennian Sun, Ming Lei (NEC Laboratories, China)

A Channel Independent Precoding for MIMO-OFDM Systems with Insufficient

Cyclic Prefix

Yuansheng Jin, Xiang-Gen Xia (University of Delaware, USA)

Low-Complexity MIMO Detection using Post-Processing SINR Ordering and Partial K-Best Search

Richard H. Chen, Wei-Ho Chung (Academia Sinica, Taiwan)

Efficient Adaptive Double Codebook based CSI Prediction for SU/MU MIMO-OFDM Systems

Jiang Chang, I-Tai Lu (Polytechnic Institute of New York University, USA) Yingxue Li (InterDigital Comm LLC, USA)

Asymptotic Spectral-Efficiency of MIMO-CDMA Systems with Arbitrary Spatial Correlation

Peng Pan, Youguang Zhang, Yuquan Sun (Beihang University, China) Lie-Liang Yang (University of Southampton, United Kingdom) Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 350 D/E/F WC10: OFDM II Chair: Youyun Xu

(PLA University of Science and Technology / Shanghai Jioatong University, China)

Resource Allocation for OFDM-based Multi-Destination Relay Networks with Direct Links

Xiaoyi Liu, Li Chen, Xin Zhang, Dacheng Yang (Beijing University of Posts and Telecommunications, China)

Compressive Sensing Aided Determination of OFDM Achievable Rate Djordje Jeremic, Jocelyn Aulin (Chalmers University of Technology, Sweden)

DMT Analysis and Optimization for OFDM-based Relaying Systems with Linear Detector

Weiwei Yang, Cai, Yueming, Yan Wang (PLA University of Science and Technology, China)

Relay Power Optimization for Wireless Cooperative Networks Over OFDM Fading Channels

Di Wang, Zhaoquan Li, Xin Wang (Florida Atlantic University, USA)

Network Coded Cooperative BICM-OFDM

Toufiqul Islam, Amir Nasri, Robert Schober (University of British Columbia, Canada) Ranjan K. Mallik (Indian Institute of Technology, Delhi, India) Vijay Bhargava (University of British Columbia, Canada)

Low Complexity Symbol-Wise Beamforming for MIMO-OFDM Systems

Hyun-Ho Lee (Korea University, Korea) Ki-Hong Park (King Abdullah University of Science and Technology, Saudi Arabia) Hong-Chuan Yang (University of Victoria, Canada) Young-Chai Ko (Korea University, Korea)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 351 A/B

WC11: Beamforming II

Chair: Patrick Mitran (University of Waterloo, Canada)

Rate Improvement of Beamforming Systems via Bi-Directional Use of Spatial Resources

Hyungsik Ju (Yonsei University, Korea) Xiaohu Shang (Bell Labs & Alcatel-Lucent, USA) H. Vincent Poor (Princeton University, USA) Daesik Hong (Yonsei University, Korea)

Wideband AoA Estimation and Beamforming with Hybrid Antenna Array Xiaojing Huang, Y. Jay Guo (CSIRO, Australia)

Long-Term Channel Information-based CoMP Beamforming in LTE-Advanced Systems

Hui Won Je (Samsung Electronics, Korea) Hyewon Lee, Kyuhwan Kwak, Sunghyun Choi (Seoul National University, Korea) Young-Jun Hong, Bruno Clerckx (Samsung Electronics, Korea)

Performance Evaluation of Beamforming Solutions for mmWave Wireless Systems

Florian Perget, Daniela Dragomirescu (LAAS-CNRS, University of Toulouse, France) Martin Jacob, Thomas Kürner (Technische Universität Braunschweig, Germany) Cicero Vaucher (NXP, Netherlands) Robert Plana (LAAS-CNRS, France)

On Transmit Beamforming for Physical-Layer Multicasting

Jiangyuan Li (Rutgers, USA)

Athina Petropulu (Drexel University, USA)

Cooperative Frequency-Domain Beamforming for Broadband SC-FDE Systems Peiran Wu, Robert Schober (University of British Columbia, Canada)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 351 D/E WC12: Wireless Security

Chair: Husheng Li (University of Tennessee, USA)

Dirty Paper Coding versus Linear GSVD-based Precoding in MIMO Broadcast Channel with Confidential Messages Ali Fakoorian, Lee Swindlehurst (University of California, Irvine, USA)

Intentional Network Interference for Denial of Wireless Eavesdropping Alberto Rabbachin (Massachusetts Institute of Technology, USA) Andrea Conti (University of Ferrara / University of Bologna, Italy) Moe Win (Massachusetts Institute of Technology, USA)

A Game Theoretic Approach for the Cooperative Network with the Presence of Malicious Relays

Meng-Hsi Chen, (National Tsing Hua University, Taiwan) Shih-Chun Lin (National Taiwan University, Taiwan) Yao-Win Peter Hong (National Tsing Hua University, Taiwan)

Improving the Physical-Layer Security of Wireless Two-Way Relaying via Analog Network Coding

Hui-Ming Wang, Qinye Yin (Xian Jiaotong University, China) Xiang-Gen Xia (University of Delaware, USA)

Secrecy Rate Analysis of Jamming Superposition in Presence of Many Eavesdropping Users

Toshiaki Koike-Akino (MERL / Harvard University, USA) Chunjie Duan (Mitsubishi Electric Research Laboratories, USA)

Check-Sum Aided MAP Detection of Relay Misbehavior in Wireless Network Coding

Sang Wu Kim (Iowa State University, USA)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 351 C/F WN07: Cognitive Networking III

Chair: Husheng Li (University of Tennessee, USA)

Outage Capacity Optimization for Cognitive Radio Networks with Cooperative Transmissions via Discrete Stochastic Optimization Renchao Xie, F. Richard Yu (Carleton University, Canada) Hong Ji (Beijing University of Posts and Telecommunications, China)

Binary Blind Identification of Wireless Transmission Technologies for Wide-band Spectrum Monitoring

Huy A. Nguyen, Nam Tuan Nguyen, Guanbo Zheng, Zhu Han, Rong Zheng (University of Houston, USA)

Distributed Spectrum-Aware Clustering in Cognitive Radio Sensor Networks Huazi Zhang, Zhaoyang Zhang (Zhejiang University, China)

Huaiyu Dai (NC State University, USA) Rui Yin (Zhe Jiang University, China) Xiaoming Chen (Nanjing University of Aeronautics and Astronautics, China)

Spectrum-Aware Beaconless Geographical Routing Protocol for Mobile Cognitive Radio Networks

Junseok Kim, Marwan Krunz (University of Arizona, USA)

Cognitive Radio Resource Management exploiting Heterogeneous Primary Users

Anna Vizziello (University of Pavia, Italy) Ian F. Akyildiz (Georgia Institute of Technology, USA) Ramon Agustí (Universitat Politècnica de Catalunya, Spain) Lorenzo Favalli, Pietro Savazzi (Università degli Studi di Pavia, Italy)

Statistical QoS Evaluation for Cognitive Radio Networks

Atef Abdrabou (UAE University, UAE) Weihua Zhuang (University of Waterloo, Canada) Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 350 B WNO8: Medium Access Control Chair: Jang-Won Lee (Yonsei University, Korea)

Analysis of Controlled Probabilistic Access with Multipacket Reception Majid Ghanbarinejad, Christian Schlegel (University of Alberta, Canada)

Flipped Contention Resolution Diversity Aloha Lei Zheng, Lin Cai (University of Victoria, Canada)

A Lightweight Deterministic MAC Protocol Using Low Cross-Correlation Sequences

Dongho Kim, Danesh Esteki, Yih-Chun Hu, P. R. Kumar (University of Illinois, Urbana-Champaign, USA)

A Markov Decision Process (MDP)-based Congestion-Aware Medium Access Strategy for IEEE 802.15.4 Bharat Shrestha, Ekram Hossain, Kaewon Choi (University of Manitoba, Canada) Sergio Camorlinga (University of Manitoba, Canada)

Relay Selection for Cooperative MAC Considering Retransmission Overhead Bin Cao, Gang Feng

(University of Electronic Science and Technology of China, China) Yun Li (ChongQing University of Posts and Telecommunications of China, China)

Token-MAC: A Fair MAC Protocol for Passive RFID Systems Li Chen (University of Rochester, USA) Ilker Demirkol (Universitat Politecnica de Catalunya / i2CAT Foundation, Spain) Wendi Heinzelman (University of Rochester, USA)

Tuesday, 6 December 2011 • 16:00 – 18:00 Room: GRB 362 A

WN09: Wireless Relay Networks Chair: Hassan Moradi (University of Oklahoma, USA)

End-to-End Queueing Performance Evaluation for Multiuser Wireless Relay Networks

Mohammad Moghadari, Yalda Farazmand, Ekram Hossain (University of Manitoba, Canada)

Statistical Delay Control and QoS-Driven Power Allocation over Two-Hop Wireless Relay Links

Qinghe Du (Xian Jiaotong University, China) Yi Huang (Qualcomm Research Center, USA) Pinyi Ren, Chao Zhang (Xian Jiaotong University, China)

An Optimal Load Balancing and Its Heuristic Implementation in a Heterogeneous Wireless Network with Relays

Yi Yu (Research In Motion, USA) Rose Qingyang Hu (Utah State University, USA) Zhijun Cai (Research In Motion, USA)

Joint Relay and Jammer Selection for Secure Decode-and-Forward Two-Way Relay Communications

Jingchao Chen, Lingyang Song (Peking University, China) Zhu Han (University of Houston, USA) Bingli Jiao (Peking University, China)

Relays in HSPA+: Power Control and Mobility Jason F Hunzinger, Jilei Hou, Shengshan Cui (Qualcomm, USA)

On the Downlink Time, Frequency and Power Coordination in an LTE Relay Network

Rose Qingyang Hu (Utah State University, USA) Yi Qian (University of Nebraska–Lincoln, USA) Wei Li (University of Victoria, Canada)

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Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 322 A/B

AHSN10: Wireless Sensor and Actor Networks IV Chair: Lijun Qian (Prairie View A&M University, USA)

Optimal Detector Based on Data Fusion for Wireless Sensor Networks Tai-Lin Chin (National Taiwan University of Science and Technology, Taiwan) Yuhen Hu (University of Wisconsin at Madison, USA)

Energy Level Based Transmission Power Control Scheme for Energy Harvesting WSNs

Jian Qiu (Hangzhou Dianzi University, China) Peng Liu (Hangzhou Dianzi University / University of Bradford, China) Song Zhang, Bing Lin, Guojun Dai (Hangzhou Dianzi University, China)

Non-cooperative Game Based Social Welfare Maximizing Bandwidth Allocation in WSNs

Mo Dong, Haiming Jin, Gaofei Sun, Xinbing Wang, Wei Liu, Xudong Wang (Shanghai Jiao Tong University, China)

Pipe-Based Energy Efficient Data Dissemination Scheme for Mobile Sink Groups on WSNs

Hee-Sook Mo (ETRI, Korea) Soochang Park, Jeongcheol Lee, Hosung Park, Sang-Ha Kim (Chungnam National University, Korea)

Maximum Lifetime Data Regeneration for Persistent Storage in Wireless Sensor Networks

Oluwasoji O. Omiwade, Rong Zheng (University of Houston, USA)

A Dual-Network Testbed for Wireless Sensor Applications

Jedrzej Kowalczuk, Mehmet Can Vuran, Lance C. Pérez (University of Nebraska-Lincoln, USA)

Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 330 A/B AHSN11: Routing IV Chair: Burkhard Stiller (University of Zürich / ETH Zürich, TIK, Switzerland)

Comparison of Distributed Ad Hoc Network Planning Algorithms for Autonomous Flying Robots

Daniel Behnke, Kai Daniel, Christian Wietfeld (TU Dortmund University, Germany)

A New Power-Aware Distributed Topology Control Algorithm for Wireless Ad Hoc Networks

Xiaoyu Chu, Harish Sethu (Drexel University, USA)

Sectorial Coverage in a Deployment of a WMN Backbone Based on Directional Antennas

Mohamed Ould Cheikh (Lamsade Laboratory, France) Lynda Mokdad (Université de Paris 12, France)

Relay Beam Selection with Directional Antennas

Brendan Mumey (Montana State University, USA) Jian Tang, Yun Xing (Syracuse University, USA) Richard S. Wolff (Montana State University, USA)

Neighbor Discovery with Directional Antennas in Mobile Ad Hoc Networks Wei Xiong, Bo Liu, Gui Lin (Shanghai Jiaotong University, China)

Multicast Capacity for Hybrid MANETs with Direction Antenna and Delay Constraint

Guanglin Zhang, Youyun Xu, Xinbing Wang (Shanghai Jiaotong University, China)

Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 332 F CQRM06: Reliability and Modeling Chair: Go Hasegawa (Osaka University, Japan)

Recovery from Link Failures in Networks with Arbitrary Topology via Diversity Coding

Serhat N. Avci , Xiaodan Hu, Ender Ayanoglu (University of California, Irvine, USA)

Network Recovery and Augmentation under Geographically Correlated Region Failures

Xiaoliang Wang (Nanjing University, China)

Design of Reliable Wireless Mesh Networks

Ahmed Beljadid, Abdelhakim Hafid, Mustapha Boushaba (University of Montreal, Canada)

SHARP: A Scalable Framework for Dynamic Joint Replica Placement and Request Routing Scheduling Yi Wang, Chen Tian, Hongbo Jiang

(Huazhong University of Science and Technology, China) Xue Liu (McGill University, Canada) Jinhua Chen, Wenyu Liu (Huazhong University of Science and Technology, China)

Tradeoff Study on Fault Tolerance Capacity and Resource Utilization for the Torus-Based Mission-Critical All-Optical WDM LANs Dexiang Wang, Janise McNair (University of Florida, USA)

Analytical Model for Hybrid Immediate and Advance Reservation in Optical WDM Networks Joan Triay

(Universitat Politècnica de Catalunya / University of Massachusetts, Dartmouth, Spain) Cristina Cervelló-Pastor (Universidad Politécnica de Catalunya, Spain) Vinod M. Vokkarane (Massachusetts Institute of Technology / University of Massachusetts, Dartmouth, USA)

Wednesday, 7 December 2011 • 8:00 - 10:00 Room: GRB 332 A

CRN04: Power Control in Cognitive Radio Networks Chair: Dzmitry Kliazovich (University of Luxembourg, Luxemburg)

Outage Probability Minimizing Power/Rate Control for Cognitive Radio Multicast Networks

Ding Xu, Zhiyong Feng, Yizhe Li, Ping Zhang (Beijing University of Posts and Telecommunications, China)

Improving the Outage and Tifr Capacity of Spectrum Sharing Cognitive Radio Networks

Stergios Stotas, Arumugam Nallanathan (King's College London, United Kingdom)

Robust Transmission Scheduling and Power Control for Spectrum Sharing in Spatial Reuse TDMA Wireless Networks

Phond Phunchongharn, Ekram Hossain, Kaewon Choi, Sergio Camorlinga (University of Manitoba, Canada)

Optimal Joint Power Allocation and Phase Control for DS-CDMA Cognitive Radio Networks

Seyed Ebrahim Safavi, Koduvayur P. Subbalakshmi (Stevens Institute of Technology, USA) Optimal Sensing and Power Control for Cognitive Radio Networks Xin Wang (Florida Atlantic University, USA)

On Using Multi-State Spectrum Sensing for Joint Detection and Transmission in Opportunistic Spectrum Sharing

Hung-Yun Hsieh, Jiun-Shian Tsai (National Taiwan University, Taiwan)

Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 332 B CRN05: Dynamic Multi-Channel Access in Cognitive Radio Networks

Chair: Allen B. MacKenzie (Virginia Tech, USA)

Soft Spectrum Sensing and Power Adaptation in Multiband Cognitive Radios Hua Mu, Jitendra Tugnait (Auburn University, USA)

Dynamic Channel Aggregation Strategies in Cognitive Radio Networks with Spectrum Adaptation

Lei Jiao, Frank Y. Li (University of Agder, Norway) Vicent Pla (Universitat Politecnica de Valencia, Spain)

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An Approximately Optimal Rendezvous Scheme for Dynamic Spectrum Access Networks

Chunsheng Xin (Norfolk State University, USA) Min Song (Old Dominion University, USA) Liangping Ma (Interdigital Communications, USA) Chien-Chung Shen (University of Delaware, USA)

Adaptive Hopping Transmission Strategy for Opportunistic Spectrum Access Mahsa Derakhshani, Tho Le-Ngoc (McGill University, Canada)

Predictive Channel Access in Cognitive Radio Networks based on Variable order Markov Models

Chamara N. Devanarayana, Attahiru S. Alfa (University of Manitoba, Canada)

An LLR-based Cognitive Transmission Strategy for Higher Spectrum Reutilization

Kasra Haghighi, Erik G. Ström, Erik Agrell (Chalmers University of Technology, Sweden)

Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 332 C CSSO4: Intrusion Detection II Chair: Cheng-Hung Lin (National Taiwan Normal University, Taiwan)

Cooperative Sybil Attack Detection for Position Based Applications in Privacy Preserved VANETs

Yong Hao, Jin Tang, Yu Cheng (Illinois Institute of Technology, USA)

Accelerating Regular Expression Matching Using Hierarchical Parallel Machines on GPU

Cheng-Hung Lin (National Taiwan Normal University, Taiwan) Chen-Hsiung Liu, Shih-Chieh Chang (National Tsing-Hua University, Taiwan)

An Efficient Error-Detection and Error-Correction (EDEC) Scheme for Network Coding Wenbo Qiao, Jian Li, Jian Ren (Michigan State University, USA)

Rule Mode Selection in Intrusion Detection and Prevention Systems Khalid Alsubhi, Yassir Alhazmi (University of Waterloo, Canada) Nizar Bouabdallah (INRIA, France) Raouf Boutaba (University of Waterloo, Canada)

Examining Social Dynamics for Countering Botnet Attacks Ziming Zhao, Gail-Joon Ahn, Hongxin Hu (Arizona State University, USA)

Ensuring Service Resilience in the EPS: MME Failure Restoration Case Tarik Taleb, Konstantinos Samdanis (NEC Europe Ltd., Germany)

Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 332 D CSWSO4: P2P Services

Chair: Han-Chieh Chao (National Ilan University, Taiwan)

BitTorrent over Optical Network - A Content Distribution Platform in Cooperation with P2P and OCS Network

Hideki Tode, Syogo Takagi, Yosuke Tanigawa (Osaka Prefecture University, Japan)

Bringing Local DNS Servers Close to Their Clients Hangwei Qian, Michael Rabinovich (Case Western Reserve University, USA) Zakaria Al-Qudah (Yarmouk University, Jordan)

Efficient Peer-to-Peer Content Distribution Using Network Coding Xiaoli Wang, Qun Zhao (DoCoMo Beijing Labs, China)

Proportional Response Mechanism for Layered P2P Live Streaming

Yusuo Hu (Microsoft, China) Yeqi Lu, Minyi Guo (Shanghai Jiaotong University, China) Feng Wu (Microsoft Research Asia, China)

Taking Advantage of Social Network Relationships in P2P Streaming Overlays Maria Luisa Merani, Daniela Saladino (University of Modena and Reggio Emilia, Italy) Marco Capetta (Techlan Reti Srl, Italy)

SimPP: a Peer-to-Peer System for Texture Distribution in Social Virtual Worlds Marcelos Santos (Federal University of the ABC, Brazil) Stenio Fernandes (Federal University of Pernambuco, Brazil) Carlos A Kamienski (University of the ABC, Brazil) Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 332 E CTO4: MIMO II

Chair: Aria Nosratinia (University of Texas, Dallas, USA)

Dual Alamouti Codes

Liangbin Li, Hamid Jafarkhani (University of California, Irvine, USA)

On the Linear Precoder Design for MIMO Channels with Finite-Alphabet Inputs and Statistical CSI $% \left(\mathcal{S}^{2}\right) =0$

Weiliang Zeng (Tsinghua University, China) Chengshan Xiao, Mingxi Wang (Missouri University of Science and Technology, USA) Jianhua Lu (Tsinghua University, China)

Linear Precoding for MIMO Multiple Access Channels with Discrete-Constellation Inputs Mingxi Wang, Chengshan Xiao (Missouri University of Science and Technology, USA) Weiliang Zeng (Tsinghua University, China)

Stochastic Precoding for MISO Interference Channels with Channel Mean Feedback

Minhua Ding, Keith Q. T. Zhang (City University of Hong Kong, Hong Kong)

A Limited-Feedback Scheduling and Beamforming Scheme for Multi-User Multi-Antenna Systems

Behrouz Khoshnevis, Wei Yu (University of Toronto, Canada)

Transmit Antenna Selection with Maximal-Ratio Combining in MIMO Multiuser Relay Networks

Nan Yang (CSIRO / University of New South Wales, Australia) Phee Lep Yeoh (University of Sydney, Australia) Maged Elkashlan (Queen Mary, University of London, United Kingdom) Jinhong Yuan (University of New South Wales, Australia) Iain B. Collings (CSIRO, Australia)

Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 342 A NGN04: Switch

Chair: Deng Pan (Florida International University, USA)

Distribute and Match – The DM Switch for High Speed Packet Switching Networks

Zhenghao Zhang (Florida State University, USA)

On Resilience of Split – Architecture Networks Ying Zhang, Neda Beheshti, Mallik Tatipamula (Ericsson Research, USA)

Design and Development of an OpenFlow Compliant Smart Gigabit Switch Gianni Antichi, Andrea Di Pietro, Stefano Giordano, Gregorio Procissi (Università di Pisa, Italy) Domenico Ficara (Cisco Systems, Switzerland)

On the Flexibility of MPLS Applications over an OpenFlow-enabled Network Omar El Ferkouss (Université du Québec à Montréal, Canada)

Sergio Correia (Université du Québec à Montréal / Universidade Estadual do Ceará, Canada) Racha Ben Ali (École Polytechnique de Montréal, Canada) Yves Lemieux, Martin Julien (Ericsson Research Canada, Canada) Mallik Tatipamula (Ericsson Research, USA) Cherkaoui Omar (Université du Québec à Montréal, Canada)

Achieving 100% Throughput for Multicast Traffic in Input-Queued Switches

Bing Hu (Zhejiang University, China) Chunzhi He, Kwan Yeung (University of Hong Kong, Hong Kong)

Minimizing the Communication Overhead of Iterative Scheduling Algorithms for Input-queued Switches

Bing Hu (Zhejiang University, China) Kwan Yeung (University of Hong Kong, Hong Kong) Zhaoyang Zhang (Zhejiang University, China)

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Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 342 B

ONS2: Impairment-Aware Optical Networks Chair: Andrea Bianco (Politecnico di Torino, Italy)

Designing Power-Efficient Modulation Formats for Noncoherent Optical Systems Johnny Karout, Erik Agrell, Krzysztof Szczerba, Magnus Karlsson (Chalmers University of Technology, Sweden)

Stochastic Model on the Post-Fabrication Error for a Bragg Reflectors Based Photonic Allpass Filter

Yujia Wang, Andrew Grieco, Boris Slutsky, Bhaskar Rao, Yeshaiahu Fainman, Truong Nguyen (University of California, San Diego, USA)

Crosstalk Minimization in Microring-Based Wavelength Routing Matrices Andrea Bianco (Politecnico di Torino, Italy)

Davide Cuda (Orange Labs, France)

Miquel Garrich, Guido Alejandro Gávilanes Castillo, Valentina Martina, Fabio Neri (Politecnico di Torino, Italy)

Interference Avoidance Using Uneven Intensity Spreading Scheme for OCDMA Shoichiro Matsumoto, Koji Kamakura (Chiba Institute of Technology, Japan)

Range of Influence of Physical Impairments in Wavelength-Division Multiplexed Systems

Houbing Song, Maite Brandt-Pearce (University of Virginia, USA)

Approximation to Nanosecond Optical Switching based on Commercial Devices David Fernández-Hermida (Universidad de Vigo, Spain) Miguel Rodelgo-Lacruz (Gradiant, Spain)

Cristina López-Bravo, Francisco J. González-Castaño (Universidad de Vigo, Spain)

Wednesday, 7 December 2011 • 8:00 - 10:00 Room: GRB 342 C

SAC07: Green Mobile and Wireless Networks Chair: Athanassios Manikas (Imperial College London, United Kingdom)

Adaptive Power and Resource Allocation Strategies for Green Radio Congzheng Han, Simon Armour (University of Bristol, United Kingdom)

Multi-hop Relay Network for Base Station Energy Saving and its Performance Evaluation

Dongheon Lee, Sheng Zhou, Zhisheng Niu (Tsinghua University, China)

Is Two-way Relay More Energy Efficient? Can Sun, Chenyang Yang (Beihang University, China)

Energy-Efficient Power Allocation between Pilots and Data Symbols in Downlink OFDMA Systems

Zhikun Xu, Chenyang Yang (Beihang University, China) Geoffrey Li (Georgia Tech, USA) Shunqing Zhang, Yan Chen, Shugong Xu (Huawei, China)

Impact of Backhauling Power Consumption on the Deployment of Heterogeneous Mobile Networks

Sibel Tombaz, Paolo Monti (Royal Institute of Technology, Sweden) Kun Wang (Acreo AB, Sweden) Anders Vastberg (Royal Institute of Technology, Sweden) Marco Forzati (Acreo, Sweden) Jens Zander (Royal Institute of Technology, Sweden)

On Optimal Energy-Efficient Multi-User MIMO

Guowang Miao (Royal Institute of Technology, USA) Jianzhong Zhang (Samsung Telecommunications America, USA)

Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 342 D

SAC08: Energy Efficiency in Computing, Processing and Transmission

Chair: Taisir El-Gorashi (University of Leeds, United Kingdom)

Greening of Many-Core Processors in Network-Optimized Computing Hiroaki Inoue, Kazuhisa Ishizaka, Junji Sakai (NEC Corporation, Japan)

An Optimal Hysteretic Control Policy for Energy Saving in Cloud Computing Zexi Yang (Tsinghua University, China)

Meng-Hsi Chen (National Tsing Hua University, Taiwan) Zhisheng Niu (Tsinghua University, China) Dawei Huang (Bell Labs Research China, Alcatel-Lucent, China)

Analyzing Energy Efficiency of a Cooperative Content Distribution Technique Sumanta Saha, Mohammad A. Hoque, Andrey Lukyanenko (Aalto University, Finland)

An Analytical Study of Power Consumption in Portable Thin Clients Toolika Ghose, Vinod Namboodiri, Ravi Pendse (Wichita State University, USA)

A Power Efficient Modulation Technique for High-Speed Communication over Wired Channels

Mehdi Malboubi, Ahmad Bahai, Pravin Varaiya (University of California, Berkeley, USA) Ali DJabbari (NSC, USA)

Efficient Data Transmission for an Energy Harvesting Node with Battery Capacity Constraint

Maria Gregori, Miquel Payaró (CTTC, Spain)

Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 342 E SPCO5: Detection, Estimation and Identification I Chair: Jaekyun Moon (KAIST, Korea)

Detection Techniques for Two-Relays Decode and Forward Cooperative Systems Hala Mostafa, Mohamed Fawzy Marey, Mohamed Hossam Ahmed, Octavia A. Dobre (Memorial University of Newfoundland, Canada)

A New Estimation Algorithm for CFO and I/Q Imbalance in Wideband Direct-Conversion Receivers

Yen-Chang Pan, See-May Phoong (National Taiwan University, Taiwan)

Blind Frequency-Dependent I/Q Imbalance Compensation Using System Identification

Hai Lin, Katsumi Yamashita (Osaka Prefecture University, Japan) A Fast Scheme for Blind Identification of Channel Codes

Reza Moosavi, Erik G. Larsson (Linköping University, Sweden)

Bayesian Approach for the Estimation of Phase Noise in SC-FDE Schemes Pedro Pedrosa

(Instituto de Telecomunicações, Lisboa / Instituto Superior Tecnico, Portugal) Rui Dinis (Instituto de Telecomunicações / UNINOVA/FCT-UNL, Portugal) Fernando Nunes (Instituto Superior Tecnico, Portugal)

Super-Resolution TDOA Estimation from Filtered Random Signals in Multipath Environments

Koji Harada (Kyoto University / Agilent Technologies, Japan)

Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 342 F WC13: MIMO IV Chair: Xiao-Wen Chang (McGill University, Canada)

Mixed-Rank Compound MIMO-X Interference Alignment for Multi-user Systems Amin Mobasher, Alireza Bayesteh, Yongkang Jia (Research in Motion, Canada)

Interference Alignment with Differential Feedback for Time-correlated MIMO Channels

Leiming Zhang, Lingyang Song, Meng Ma, Bingli Jiao (Peking University, China)

Interference Alignment-Like Behaviors of MMSE Designs for General Multiuser MIMO Systems Enoch Lu, Tianxiang Ma, I-Tai Lu

(Polytechnic Institute of New York University, USA)

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Eigenvalue Distributions of MIMO Rayleigh-Product Channels with Arbitrary-Power Co-channel Interference and Noise Yongpeng Wu, Shi Jin, Xiqi Gao (Southeast University, China) Chengshan Xiao (Missouri University of Science and Technology, USA) Matthew R. McKay (Hong Kong University of Science & Technology, Hong Kong)

Sum Outage-Rate Maximization for MIMO Interference Channels Juho Park, Donggun Kim, Youngchul Sung (KAIST, Korea)

Two Novel Upper Bounds on the Sum Rate of MIMO ZF Receivers Michail Matthaiou (Chalmers University of Technology, Sweden)

Caijun Zhong (Zhejiang University, China) Tharmalingam Ratnarajah (Queens University of Belfast, United Kingdom)

Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 350 D/E/F

WC14: Space-Time Coding Chair: Chengwen Xing

(Beijing Institute of Technology / University of Hong Kong, China)

Multiple-Symbol Differential Sphere Decoding Aided Cooperative Differential Space-Time Spreading for the Asynchronous CDMA Uplink

Chao Xu, Emmanuel Ternon (University of Southampton, United Kingdom) Shinya Sugiura (Toyota Central R&D Labs., Inc., Japan) Soon Xin (Michael) Ng, Lajos Hanzo (University of Southampton, United Kingdom)

Space-Time CodestFor Amplify-and-Forward (AF) Relay Channels: Performance and Code Design

Sajjad Beygi, Hamid Reza Bahrami (University of Akron, USA) Tho Le-Ngoc (McGill University, Canada)

Multi-Keyhole Effect in MIMO AF Relay Downlink Transmission with Space-Time Block Codes

Trung Q. Duong (Blekinge Institute of Technology, Sweden) Himal A. Suraweera, (Singapore University of Technology and Design, Singapore) Hans-Jurgen Zepernick (Blekinge Institute of Technology, Sweden)

Full-Diversity Minimum Decoding Complexity Differential Quasi-Orthogonal STBC

Rania Morsi, (Ulm University, Egypt) Alexander Linduska, Juergen Lindner (University of Ulm, Germany)

A New Low-Complexity Decodable Rate-5/4 STBC for Four Transmit Antennas with Nonvanishing Determinants

Amr Ismail, Jocelyn Fiorina, Hikmet Sari (Ecole Supérieure d'Electricité, France)

Reduced-Complexity QAM-Aided Space-Time Shift Keying

Shinya Sugiura (Toyota Central R&D Labs., Inc., Japan) Chao Xu, Lajos Hanzo (University of Southampton, United Kingdom)

Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 351 A/B

WC15: Relay Selection

Chair: Philippa A. Martin (University of Canterbury, New Zealand)

Buffers Improve the Performance of Relay Selection

Aissa Ikhlef, Diomidis S. Michalopoulos, Robert Schober (University of British Columbia, Canada)

Optimal Relay Selection and Channel Allocation for Multi-User Analog Two-Way Relay Systems

Bo Bai

(Hong Kong University of Science & Technology / Tsinghua University, Hong Kong) Wei Chen (Tsinghua University, China)

Khaled Ben Letaief (Hong Kong University of Science & Technology, Hong Kong) Zhigang Cao (Tsinghua University, China)

Performance Analysis of Partial Relay Selection with Feedback Delay in the Presence of Interference

Fawaz AL-Qahtani (Texas A&M University / Education City, Qatar) Caijun Zhong (Zhejiang University, China) Hussein Alnuweiri, Khalid A. Qarage (Texas A&M University, Qatar)

Diversity Loss Due to Suboptimal Relay Selection

Diomidis S. Michalopoulos (University of British Columbia, Canada) Nestor Chatzidiamantis (Aristotle University Thessaloniki, Greece) Robert Schober (University of British Columbia, Canada) George K. Karagiannidis (Aristotle University of Thessaloniki, Greece)

Joint Relay Selection and Power Allocation for Decode-and-Forward Cellular Relay Network with Imperfect CSI

Shankhanaad Mallick, Mohammad Mamunur Rashid, Vijay Bhargava (University of British Columbia, Canada)

Spectrally Efficient Variable-Rate Best-Relay Selection Scheme for Adaptive Cooperative System

Essam Saleh Altubaishi (University of Waterloo / King Saud University, Canada) Sherman Shen (University of Waterloo, Canada)

Wednesday, 7 December 2011 • 8:00 - 10:00 Room: GRB 351 D/E

WC16: Heterogeneous Wireless Networks Chair: Emad Alsusa (Manchester University, United Kingdom)

Capacity Optimization in Networks with Heterogeneous Radio Access Technologies

Yiyue Wu (Princeton University, USA) Harish Viswanathan (Bell Labs, Alcatel-Lucent, USA) Thierry E. Klein (Lucent Technologies, USA) Mark Haner (Bell Labs, Alcatel-Lucent, USA) Robert Calderbank (Duke University, USA)

A Learning-based Network Selection Method in Heterogeneous Wireless Systems

Haleh Tabrizi, Golnaz Farhadi, John Cioffi (Stanford University, USA)

Multi-tier Network Performance Analysis using a Shotgun Cellular System Prasanna Madhusudhanan, Juan Restrepo, Youjian (Eugene) Liu, Timothy Brown, Kenneth Baker (University of Colorado, Boulder, USA)

On Hierarchical Cooperation Formation in Mobile Infostation Networks Yifan Li, Ping Wang, Dusit Niyato, Wenjie Zhang (Nanyang Technological University, Singapore)

Hierarchical Mobility via Relaying in Dense Wireless Networks Sundeep Rangan, Elza Erkip (Polytechnic Institute of New York University, USA)

SHOW: Novel Symmetric Design for a Hybrid Handoff Scheme in Wireless Networks

Yu-Ru Lee, Shih Yu Chang (National Tsing Hua University of Taiwan, Taiwan) Hsiao-Chun Wu (Louisiana State University, USA)

Wednesday, 7 December 2011 • 8:00 - 10:00 Room: GRB 362 A

WC38: Sensor Networks and Cognitive Radio Networks Chair: Teng Joon Lim (National University of Singapore, Singapore)

MobiBar: Barrier Coverage with Mobile Sensors Simone Silvestri (University of Rome "La Sapienza", Italy)

Towards Efficient Anonymous Communications in Sensor Networks

Juan Chen (Harbin Institute of Technology, China) Fang Binxing (Chinese Academy of Sciences, China) Hongli Zhang (Harbin Institute of Technology, China) Xiaojiang Du (Temple University, USA) Yin Lihua (Chinese Academy of Sciences, China) Xiangzhan Yu (Harbin Institute of Technology, China)

Combining Source-Location Privacy and Routing Efficiency in Wireless Sensor Networks

Jian Ren, Di Tang (Michigan State University, USA)

Energizing Global Communications

Software Defined Radio Implementation of SMSE based Overlay Cognitive

Radio in High Mobility Environment Ruolin Zhou, Xue Li (Wright State University, USA) Vasu Devan Chakravarthy (Air Force Research Laboratory, USA) Zhiqiang Wu (Wright State University, USA) A Novel Relay-Aided Transmission Scheme in Cognitive Radio Networks Wael Jaafar (Ecole Polytechnique de Montréal, Canada) Wessam Ajib (Université du Québec à Montréal, Canada) David Haccoun (École Polytechnique de Montréal, Canada)

TECHNICAL SYMPOSIA • WEDNESDAY

Communication over Random Fields: A Statistical Framework for Cognitive Radio Networks

Husheng Li (University of Tennessee, USA) Zhenghao Zhang (Xidian University / University of Tennessee, USA) Zhu Han (University of Houston, USA)

Wednesday, 7 December 2011 • 8:00 – 10:00 Room: GRB 351 C/F WN10: Femtocell Networks

Chair: Richard S. Wolff (Montana State University, USA)

Cooperative Interference Alignment in Femtocell Networks

Francesco Pantisano (University of Bologna, Italy) Mehdi Bennis (University of Oulu, Finland) Walid Saad (University of Miami, USA) Mérouane Debbah (Supelec, France)

Location Based Autonomous Power Control for ICIC in LTE-A Heterogeneous Networks

Lin Yang (University of Manchester, China) Pingping Wen (Bell Labs China, China)

Interference Mitigation in Two-tier OFDMA Femtocell Networks with Differential Evolution Zhenglei Huang, Zhimin Zeng, Hailun Xia

(Beijing University of Posts and Telecommunications, China)

Transfer Learning Based Diagnosis for Configuration Troubleshooting in Self-Organizing Femtocell Networks Wei Wang, Jin Zhang, Qian Zhang

(Hong Kong University of Science & Technology, Hong Kong)

Optimal Adaptive Uplink Attenuation Algorithms for WCDMA Femtocell He Wang (Australian National University / NICTA, Australia)

Ming Zhao (Australian Communication and Media Authority, Australia) Mark C. Reed (Australian National University, Australia)

Analysis of Virtual MIMO-based Cooperative Communication in Femtocell Networks

Long Yu, Jian Liu, Keping Long (University of Electronic Science and Technology of China, China)

Wednesday, 7 December 2011 • 8:00 - 10:00 Room: GRB 350 B

WN11: Routing in Wireless Networks Chair: Cheng Li (Memorial University of Newfoundland, Canada)

An Efficient Multi-Stage Data Routing Protocol for Wireless Sensor Networks with Mobile Sinks

Lei Shi, Baoxian Zhang, Zheng Yao, Hui Huang (Chinese Academy of Sciences, China) Jian Ma (Wuxi Sensingnet Industrialization Research Institute, China)

Capacity-Aware Routing Using Throw-Boxes Bo Gu, Xiaoyan Hong (University of Alabama, USA)

Impact of Node Clustering on Routing Overhead in Wireless Networks Khadige Abboud, Weihua Zhuang (University of Waterloo, Canada)

Opportunistic Routing in Cognitive Radio Network: Exploiting Spectrum Availability and Rich Channel Diversity Osamah Badarneh, Haythem A. Bany Salameh (Yarmouk University, Jordan)

Usaman Badarnen, Haytnem A. Bany Salamen (Yarmouk University, Jordan

Multiple Ferry Routing for the Opportunistic Networks Yun Li, Binbin Weng, Qilie Liu, Lijun Tang

(Chongqing University of Posts and Telecommunications, China) Mahmoud Daneshmand (AT&T, USA)

Opportunistic Geocast in Disruption-Tolerant Networks Yaozhou Ma, Abbas Jamalipour (University of Sydney, Australia) Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 322 A/B AHSN12: Wireless Sensor and Actor Networks V Chair: Hacene Fouchal

(Université de Reims Champagne-Ardenne, France)

A Heterogeneous High Speed Wireless Body Sensor Network Based on SC-UWB and ZIGBEE

Xinlei Chen (University of Tsinghua, China)

Energy-aware Transmission Scheduling in Mobile Sensor Networks Hou-Chun Chen, Huai-Lei Fu, Phone Lin (National Taiwan University, Taiwan) Chih-Hao Hsu (Institute for Information Industry, Taiwan)

Compressive Network Coding for Approximate Sensor Data Gathering Chong Luo (Microsoft Research Asia, China) Jun Sun (Shanghai Jiaotong University, China) Feng Wu (Microsoft Research Asia, China)

Enabling Multi-Hop Communications through Cross-Layer Design for Hybrid WSNs with Transmit-only Nodes

Jia Zhao (University at Buffalo, USA) Chunming Qiao (State University of New York, Buffalo, USA) Seokhoon Yoon (University of Ulsan, USA) Raghuram S. Sudhaakar (Cisco System, USA)

Minimum Transmission Data Gathering Trees for Compressive Sensing in Wireless Sensor Networks

Ruitao Xie, Xiaohua Jia (City University of Hong Kong, Hong Kong)

Efficient Time Latency of Data Aggregation Based on Neighboring Dominators in WSNs Thank Dang Neurop Machenelay Takubayakiy, Ukuraawag Chao

Thanh Dang Nguyen, Vyacheslav Zalyubovskiy, Hyunseung Choo (Sungkyunkwan University, Korea)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 330 A/B

AHSN13: MAC Protocols Chair: Fawaz Bokhari (University of Texas, Arlington, USA)

Slot Assignment over Wireless Sensor Networks Thibault Bernard, Hacene Fouchal (Université de Reims Champagne-Ardenne, France)

EEE Global Communications Conference

(Université de Reims Champagne-Ardenne, France) Automated MAC Protocol Generation with Multiple Neighborhoods and

Acknowledgments based on Symbolic Monte Carlo Simulation Jian Zhen, Forrest Brewer, Volkan Rodoplu (University of California, Santa Barbara, USA)

Distributed Medium Access and Opportunistic Scheduling for Ad Hoc Networks: An Analysis of the Constant Access Time Problem Hua Chen, Pedram Hovareshti, John S. Baras (University of Maryland, College Park, USA)

An Efficient Adaptive Backoff Algorithm for Wireless Sensor Networks Mounib Khanafer, Mouhcine Guennoun, Hussein T. Mouftah (University of Ottawa, Canada)

Zero-Exposure Distributed TDMA Using Time-coded Packet Transmissions Debasmit Banerjee, Mahmoud Taghizadeh, Subir Biswas (Michigan State University, USA)

Interoperability between Deterministic and non-Deterministic Vehicular Communications over DSRC/802.11p Jihene Rezgui, Soumaya Cherkaoui, Omar Chakroun (Université de Sherbrooke, Canada)
Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 332 F

CQRM07: Optimization and Cross-Layer Chair: Fabrizio Granelli (University of Trento, Italy)

Network Decomposition in Practice: An Application to Optimal Resource Allocation

Michael Kallitsis, George Michailidis (University of Michigan, USA) Michael Devetsikiotis (North Carolina State University, USA)

Packet Error Rate (PER)-based Cross-layer Optimization of CDMA Networks Arman Shojaeifard (King's College London, United Kingdom)

Network Coding Optimization Based on Chemical Reaction Optimization

Bo Pan (University of Hong Kong, Hong Kong) Albert Y.S. Lam (University of California, Berkeley, USA) Victor O. K. Li (University of Hong Kong, China)

Dynamic Profit Optimization of Composite Web Services with SLAs

Miroslav Zivkovic (TNO, Netherlands) Joost W Bosman (CWI, Netherlands) Hans van den Berg (TNO, Netherlands) Rob van der Mei (Centrum voor Wiskunde en Informatica, Netherlands) Erik Meeuwissen (TNO-ICT, Netherlands) Rudesindo Nunez-Queija (University of Amsterdam, Netherlands)

Minimizing Resource Blocking Rate in GoOBS

Shivashis Šaha, Jitender Singh Deogun, Lisong Xu (University of Nebraska-Lincoln, USA)

Joint Call and Packet Level Performance Analysis of CAC Strategies for VoIP Traffic in Wireless Networks

S. Lirio Castellanos-Lopez, Felipe A. Cruz-Pérez (Cinvestav-IPN, Mexico) Mario E. Rivero-Angeles (Instituto Politecnico Nacional / UPIITA/ESCOM, Mexico) Genaro Hernandez-Valdez (UAM-A, Mexico)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 332 A

CRN06: Resource Allocation and Dynamic Spectrum Sharing

Chair: Gan Liu (Huazhong University of Science and Technology, China)

Fast Spectrum Sharing for Cognitive Radio Networks: A Joint Time-Spectrum Perspective

Haibo Zhou, Bo Liu, Gui Lin, Xinbing Wang (Shanghai Jiaotong University, China) Ying Li (China Electronic System Engineering Company, China)

Dynamic Resource Allocation for Heterogeneous Services in Cognitive Radio Networks with Imperfect Channel Sensing

Renchao Xie, F. Richard Yu (Carleton University, Canada) Hong Ji (Beijing University of Posts and Telecommunications, China)

Throughput Optimization of Cognitive Radio Networks Peng Wang (NRC PostDoc, USA)

John D. Matyjas, Michael Medley (Air Force Research Laboratory, USA)

Dynamic Spectrum Sharing Models for Cognitive Radio Aided Ad Hoc Networks and Their Performance Analysis

Gan Liu (Huazhong University of Science and Technology / University of Southampton, United Kingdom) Xu Zhu (University of Liverpool, United Kingdom) Lajos Hanzo (University of Southampton, United Kingdom)

Experimental Results for Cooperative Spectrum Sharing

Vivek Bohara, See Ho Ting, Yang Han (Nanyang Technological University, Singapore)

A Channel-Aggregation Diversity Based MAC Protocol in Power-Constrained Cognitive Ad Hoc Networks

Yichen Wang, Pinyi Ren, Qinghe Du, Chao Zhang (Xian Jiaotong University, China)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 332 B

CRN07: Learning and Cognition in Cognitive Radio Networks

Chair: Husheng Li (University of Tennessee, USA)

Distributed Learning Strategies for Interference Mitigation in Femtocell Networks

Mehdi Bennis (University of Oulu, Finland) Sudarshan Guruacharya, Dusit Niyato (Nanyang Technological University, Singapore)

Decentralized Online Learning Algorithms for Opportunistic Spectrum Access Yi Gai, Bhaskar Krishnamachari (University of Southern California, USA)

Learning with the Bandit: A Cooperative Spectrum Selection Scheme for Cognitive Radio Networks Marco Di Felice (University of Bologna, Italy)

Kaushik Chowdhury (Northeastern University, USA) Luciano Bononi (University of Bologna, Italy)

On the Combinatorial Multi-Armed Bandit Problem with Markovian Rewards Yi Gai, Bhaskar Krishnamachari (University of Southern California, USA) Mingyan Liu (University of Michigan, USA)

Cognitive Interference Networks with Partial and Noisy Observations: A Learning Framework

Marco Levorato (Stanford University / University of Southern California, USA) Sina Firouzabadi, Andrea Goldsmith (Stanford University, USA)

Distributed Learning in Secondary Spectrum Sharing Graphical Game Mahdi Azarafrooz, Rajarathnam Chandramouli (Stevens Institute of Technology, USA)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 332 C

CSS05: Privacy I Chair: Shuangqing Wei (Louisiana State University, USA)

Lightweight Source Anonymity in Wireless Sensor Networks

Phillip Reindl (North Dakota State University, USA) Xiaojiang Du (Temple University, USA) Kendall E. Nygard (North Dakota State University, USA) Hongli Zhang (Harbin Institute of Technology, China)

A Secure Data Aggregation and Dispatch Scheme for Home Area Networks in Smart Grid

Ye Yan, Yi Qian, Hamid Sharif (University of Nebraska-Lincoln, USA)

Impact of Interference on Secrecy Capacity in a Cognitive Radio Network Zhi Hui Shu, Yaoqing (Lamar) Yang, Yi Qian (University of Nebraska-Lincoln, USA) Rose Qingyang Hu (Utah State University, USA)

Secret Sharing in the Encrypted Domain with Secure Comparison Bin Zhao (Purdue University, USA)

Building Accountable Smart Grids in Neighborhood Area Networks Zhifeng Xiao, Yang Xiao (University of Alabama, USA) David Du (University of Minnesota, USA)

Behavioral Graph Analysis of Internet Applications Kuai Xu, Feng Wang (Arizona State University, USA)

Energizing Global Communications

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 332 D CSWS05: Network Management and Multicast Chair: Zhiqiang Wu (Wright State University, USA)

Cooperative Multicasting for Scalable Video in Wireless Networks Sheng-Chieh Wang, Wanjiun Liao (National Taiwan University, Taiwan)

Network Configuration and Management via Two-Phase Online Optimization Bilal Gonen, Murat Yuksel (University of Nevada, Reno, USA)

User Cooperation with Network Coding for MBMS

Qi Zhang (Aarhus University, Denmark) Janus Heide, Morten V. Pedersen, Frank H.P. Fitzek (Aalborg University, Denmark)

Motion Sensor and Camera Placement Design for In-home Wireless Video Monitoring Systems

Na Yang (University of Rochester, USA) Ilker Demirkol (Universitat Politecnica de Catalunya / i2CAT Foundation, Spain) Wendi Heinzelman (University of Rochester, USA)

Relay-based Video Multicast with Network Coding in Multi-Rate Wireless Networks

Kate Ching-Ju Lin (Academia Sinica, Taiwan) Szu-Ting Lee (National Taiwan University, Taiwan)

Closest Playback-Point First: A New Peer Selection Algorithm for P2P VoD Systems

Zheng Wen, Nianwang Liu, Kwan Yeung (University of Hong Kong, Hong Kong) Zhibin Lei (Hong Kong Applied Science and Technology Research Institute Company Limited, Hong Kong)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 332 E

CT05: Cooperative Communications I Chair: Claudio R. C. M. da Silva (Virginia Tech, USA)

On the Exchange Rate for Bi-Directional Relaying over Inter-Symbol Interference Channels

Yu-Chih Huang, Nihat Tunali, Krishna Narayanan (Texas A&M University, USA)

Relay Beamforming using Interference Pricing for the Two-hop Interference Channel

Kien Truong, Robert Heath (University of Texas, Austin, USA)

System Distortion Exponents of Two-Way Relay Networks Yu Gao (Simon Fraser University, Canada) Jing Wang (Research In Motion Limited, Canada) Jie Liang (Simon Fraser University, Canada)

Concatenated Signal Codes for Compute and Forward Nihat Tunali, Krishna Narayanan (Texas A&M University, USA)

Performance Analysis of Fixed Gain Amplify-and-Forward Relaying with Time-Efficient Cascaded Channel Estimation Sachin Bharadwaj, Neelesh B. Mehta (Indian Institute of Science, India)

Secure Transmission with Parallel Relays Liang Chen (University of Maryland, College Park, USA)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 342 A NGN05: P2P and Content Delivery Chair: Taisir El-Gorashi (University of Leeds, United Kingdom)

FFT-based Network Coding for Peer-To-Peer Content Delivery Alexandre Soro (ISAE, France) Jerome Lacan (University of Toulouse, France)

Peer-to-Peer Content Distribution in Clustered Topologies with Source Coding Quoc Dinh Nguyen, Hidenori Nakazato (Waseda University, Japan)

iDTT: Delay Tolerant Data Transfer for P2P File Sharing Systems Cong Shi, Mostafa Ammar, Ellen Zegura (Georgia Institute of Technology, USA)

Localized P2P VoD Delivery Scheme with Pre-fetching for Broadband Access Networks

Chamil Jayasundara (National ICT Australia / University of Melbourne, Australia) Ampalavanapillai Nirmalathas (University of Melbourne, Australia) Elaine Wong (CUBIN, National ICT Australia, Australia) Chien Aun Chan (University of Melbourne, Australia)

On Characteristics and Modeling of P2P Resources with Correlated Static and Dynamic Attributes

Herath Mudiyanselage Nelanga Dilum Bandara (Colorado State University / University of Moratuwa, USA) Anura Jayasumana (Colorado State University, USA)

Predictive Caching for Video on Demand CDNs

Bogdan Carbunar, Michael Pearce, Venu Vasudevan, Michael Needham (Motorola, USA)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 342 B ONSO3: Optical Switched Networks Chair: Guido Maier (Politecnico di Milano, Italy)

3-Level Integrated Hybrid Optical Network (3LIHON) to Meet Future QoS Requirements

Norvald Stol, Michele Savi (Norwegian University of Science and Technology, Norway) Carla Raffaelli (University of Bologna, Italy)

Hybrid Architecture for Optical Interconnection based on Micro Ring Resonators Domenico Siracusa, Vittorio Linzalata, Guido Maier, Achille Pattavina

(Politecnico di Milano, Italy) Yabin Ye (Huawei Technologies Duesseldorf GmbH, Germany) Ming Chen (Huawei Technologies, Germany)

Dynamic Multicasting in WDM Optical Unicast Networks for Bandwidth-Intensive Applications

Arush G. Gadkar, Jeremy Plante (University of Massachusetts, Dartmouth, USA)

Benefits of Multi Wavelength Approach to Converter Placement to Support Broadcast with Available Wavelengths Ahmet C. Babaoglu, Rudra Dutta (North Carolina State University, USA)

Signaling-based Joint Selection of Wavelengths and Regenerator Points in

GMPLS-controlled WSONs Anna V. Manolova (Danish Technical University, Denmark) Isabella Cerutti, Nicola Andriolli, Nicola Sambo, Alessio Giorgetti, Piero Castoldi (Scuola Superiore Sant'Anna, Italy) Sarah Ruepp (Technical University of Denmark, Denmark)

Improving Video Quality in Network Paths with Bursty Losses Felix Espina, Daniel Morato, Mikel Izal, Eduardo Magaña (Universidad Publica de Navarra, Spain)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 342 C

SAC09: Powerline Communications and Smart Grid Chair: Ralf J. Lehnert (Technische Universitaet Dresden, Germany)

Statistical Modeling of Asynchronous Impulsive Noise in Powerline Communication Networks

Marcel Nassar, Kapil Gulati, Yousof Mortazavi, Brian L. Evans (University of Texas, Austin, USA)

A Top-Down Random Generator for the In-Home PLC Channel Andrea M. Tonello, Fabio Versolatto (University of Udine, Italy) Benjamín Béjar (Universidad Politécnica de Madrid, Spain)

Bit loading Algorithm based on a Probabilistic Approach for HomePlug AV Eleonora Guerrini (Dora Spa, STMicroelectronics Group, Italy) Daniele Veronesi (MGTech SRL, Italy)

Optimum and Suboptimum Combining of Independent Class-A Noise Channels Stephen W. Lai, Geoffrey G. Messier (University of Calgary, Canada)

A Realistic HomePlug-AV Simulator for In-home Network Services Planning Pedro Jose Piñero-Escuer (Universidad Politecnica de Cartagena, Spain) José Antonio Cortés, Francisco J. Cañete, Luis Díez (University of Málaga, Spain) Pilar Manzanares-Lopez (Technical University of Cartagena, Spain) Josemaria Malgosa-Sanahuja (Technical University of Cartagena, Spain)

Coexistence of Multiple HomePlug AV Logical Networks: A Measurement Based Study

Zhang Liu (EPFL, Switzerland) Alaeddine El Fawal (EPFL, UAE) Jean-Yves Le Boudec (EPFL, Switzerland)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 342 D

SAC10: Data Management

Chair: Neeli Rashmi Prasad (Center for TeleInFrastructure, Denmark)

Designing and Experimenting a Hybrid Social Network made up of People, Agents and Sensors

Charalampos Z. Patrikakis (Technological Educational Institute of Piraeus, Greece) Angelos-Christos Anadiotis (National Technical University of Athens, Greece) Paolo Santi (IIT-CNR, Italy) Nicola Blefari-Melazzi (University of Rome "Tor Vergata", Italy)

Robust Information Fusion on Social Networks Tzu-Yu Chuang, Kwang-Cheng Chen (National Taiwan University, Taiwan)

The Probabilistic Maximum Coverage Problem in Social Networks Xiaoguang Fan (University of Hong Kong, Hong Kong)

Victor O. K. Li (University of Hong Kong, China)

Blocking in Community-Centric Information Management Approaches for the Social Web

Amin Ranjbar, Muthucumaru Maheswaran (McGill University, Canada)

Distributed Spatio-Temporal Social Community Detection Leveraging Template Matching

Yanzhi Ren (Stevens Institute of Technology, USA) Mooi Choo Chuah (Lehigh University, USA) Jie Yang, Yingying Chen (Stevens Institute of Technology, USA)

An Experimental System for Continuous Users Tracking in Emergency Scenarios Mauro Femminella, ianluca Reali (University of Perugia, Italy)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 342 E

SPC06: Detection, Estimation and Identification II Chair: Jinho Choi (Swansea University, United Kingdom)

Process Estimation from Randomly Deployed Wireless Sensors with Position Uncertainty

Flavio Zabini (University of Bologna, Italy) Andrea Conti (University of Ferrara / University of Bologna, Italy)

Joint Estimation of the Ricean K-factor and the SNR for SIMO Systems Using Higher Order Statistics

Ines Bousnina (Tunisia Polytechnic School, Tunisia) Faouzi Bellili (Institut National de la Recherche Scientifique, Canada) Abdelaziz Samet (Tunisia Polytechnic School, Tunisia) Sofiene Affes (INRS-EMT, Canada)

A Sequential Detection Approach for Approximate MAP Detection in MIMO Systems

Jinho Choi (Swansea University, United Kingdom)

A Simplified User Identification Approach for Multi-user Diversity with Enhanced Throughput

Hang Li, Qinghua Guo (University of Western Australia, Australia) Yunxin (Jeff) Li (NICTA / University of Sydney, Australia) Defeng Huang (University of Western Australia, Australia)

Semidefinite Programming Relaxation Based Virtually Antipodal Detection for Gray Coded 16-QAM MIMO Signaling

Shaoshi Yang, Lajos Hanzo (University of Southampton, United Kingdom)

Detection of the Weak Signal in the Presence of Strong Interference Using Locally Optimal Rule and Estimation of the Parameters with the Method of Moments

Sayyed Mohammad Saberali (University of Isfahan, Iran) Seyed Ali Saberali (University of Alberta, Canada) Hamidreza Amindavar (Amirkabir University of Technology, Iran) Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 342 F WC17: MIMO V Chair: Hamid Reza Bahrami (University of Akron, USA)

Joint Signal Alignment and Power Allocation for a Diagonalized AF MIMO Two-Way Relay Channel

Heesun Park, Joohwan Chun (Korea Advance Institute of Science and Technology, Korea) Raviraj Adve (University of Toronto, Canada)

Codebook Design for the Finite Rate MIMO Broadcast Channel with Zero-Forcing Precoding

Malcolm A. Egan (University of Sydney, Australia) Chang Kyung Sung, Iain B. Collings (CSIRO, Australia)

Enhancing Multiuser MIMO in Practical Cellular Systems Narayan Prasad, Guosen Yue, Meilong Jiang, Mohammad Khojastepour, Sampath Rangarajan (NEC Labs America, USA)

Random Binary Phase Offset Scheme for CDD based MIMO-OFDM System Ahmed Sadeque, Mohammad Saquib (University of Texas, Dallas, USA)

A Low-Complexity Method to Compensate IQ-Imbalance and Phase Noise in MIMO-OFDM Systems

Shashwat Jnawali, Sajjad Beygi, Hamid Reza Bahrami (University of Akron, USA)

Linear Precoding Design based on the Minimum Distance for Two-Way MIMO Physical Network Coding Systems Young-Tae Kim (Korea University, Korea) Moonseo Park (Ajou University, Korea) Kyoung-Jae Lee (University of Texas, Austin, USA)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 350 D/E/F WC18: Network Coding I Chair: Sang Wu Kim (Iowa State University, USA)

Inkyu Lee (Korea University, Korea)

NC2R: Network Coding-Aware Cooperative Relaying for Downlink Cellular

Networks Ke Xiong, Chen Zhi, Pingyi Fan (Tsinghua University, China) Khaled Ben Letaief (Hong Kong University of Science & Technology, Hong Kong) Su Yi, Ming Lei (NEC Laboratories, China)

Inter-Relay Traffic through Network Coding in Cooperative Wireless Ad Hoc Networks

Federico Librino (University of Padova, Italy) Andrea Munari (German Aerospace Center, Germany) Michele Zorzi (Università degli Studi di Padova, Italy)

Energizing Global Communications

A Practical Network Coding Scheme over GF(2^q) for Multi-User Cooperative Communication

Bin Guo, Peiqiang Chang, Yu Liu, Chi Zhou (Illinois Institute of Technology, USA)

Opportunistic Noisy Network Coding for Fading Parallel Relay Networks Sang-Woon Jeon, Sung Hoon Lim (KAIST, Korea) Bang Chul Jung (Gyeongsang National University, Korea) Dae-Won Seo (KAIST, Korea)

Cooperation-based Opportunistic Network Coding in Wireless Butterfly Networks Jingyi Hu, Pingyi Fan, Ke Xiong (Tsinghua University, China) Su Yi, Ming Lei (NEC Laboratories, China)

Closed-Form Error Probability of Network-Coded Cooperative Wireless Networks with Channel-Aware Detectors

Michela lezzi (University of L'Aquila, Italy) Marco Di Renzo (French National Center for Scientific Research, France) Fabio Graziosi (University of L'Aquila, Italy)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 351 A/B

WC19: Relay Technologies I Chair: Zaher Dawy (American University of Beirut, Lebanon)

Amplify-and-Forward Multihop Relaying With Adaptive M-QAM in Nakagami-m Fading

Norman C. Beaulieu (University of Alberta, Canada) Golnaz Farhadi (Stanford University, USA) Yunfei Chen (University of Warwick, United Kingdom)

Node Switching Rates of Opportunistic Relaying in Rician and Nakagami-m Fading

Chuzhe Xiao, Norman C. Beaulieu (University of Alberta, Canada)

Noncoherent Receiver for Amplify-and-Forward Relaying with $M\-FSK$ Modulation

Ha X. Nguyen (Tan Tao University, Vietnam) Ha Nguyen (University of Saskatchewan, Canada) Tho Le-Ngoc (McGill University, Canada)

The Capacity of Successive DF Relaying and Using Soft Multiple-Symbol Differential Sphere Detection

Li Li, Li Wang, Lajos Hanzo (University of Southampton, United Kingdom)

Channel Training and Coherent Decodings in Amplify-and-Forward Relay Network

Sun Sun, Yindi Jing (University of Alberta, Canada)

Error Probability Bounds for Decode-and-Forward Relaying with two Correlated Sources

Stefan Schwandter (Vienna University of Technology, Austria) Haifa Farès (ENST Bretagne, France) Alexandre Graell I. Amat (Chalmers University of Technology, Sweden) Gerald Matz (Vienna University of Technology, Austria)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 351 D/E

WC20: Wireless MAC Chair: Liran Ma (Texas Christian University, USA)

Multi-Packet Communication in 802.11 Networks: A MAC/PHY Backward Compatible Solution

Fulvio Babich, Massimiliano Comisso, Aljosa Dorni (University of Trieste, Italy)

Time-Reversal Division Multiple Access in Multi-path Channels

Feng Han, Yu-Han Yang (University of Maryland, College Park, USA) Beibei Wang, Yongle Wu (Qualcomm Inc., USA) K. J. Ray Liu (University of Maryland, USA)

Access Policies for Frequency Hopping System based on Frequency Relativity in ISM Band

Nan Bao, Lianfeng Shen (Southeast University, China)

Feedback Overhead-Aware Fast Distributed Selection Scheme for Multi-node Wireless Systems

Rajat Talak, Neelesh B. Mehta (Indian Institute of Science, India)

Frequency Hopping Based Wireless Metering in Smart Grid: Code Design and Performance Analysis

Qi Zeng (Southwest Jiaotong University, China) Husheng Li (University of Tennessee, USA) Peng Daiyuan (Southwest Jiaotong University, China)

Multi-User SC-FDMA Systems under IQ Imbalance: EVM and Subcarrier Mapping Impact

Ahmad Abdulrahman Gomaa, Naofal Al-Dhahir (University of Texas, Dallas, USA)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 362 A

(Università degli Studi di Padova, İtaly)

WC39: Wireless Networks and UWB Chair: Debarati Sen (Chalmers University of Technology, Sweden / Indian Institute of Technology, Kharagpur) Analysis of Random Access Protocols for Multi Channel Wireless Networks Alfred Asterjadhi, Federico Librino, Michele Zorzi

MobiGame: A User-Centric Reputation based Incentive Protocol for Delay/Disruption Tolerant Networks

Lifei Wei, Zhenfu Cao, Haojin Zhu (Shanghai Jiaotong University, China)

A Novel Free-Rider Detection Scheme for IEEE 802.11 Wireless Networks Liran Ma (Texas Christian University, USA)

Alibi Framework for Identifying Reactive Jamming Nodes in Wireless LAN Hoang V. Nguyen, Thadpong Pongthawornkamol, Klara Nahrstedt (University of Illinois, Urbana-Champaign, USA)

Asymptotic Signal bandwidth of Impulse Radio UWB Communication Networks Juan Xu (University of Tongji, China)

Adaptive and Cost-effective Service Placement Khanh-Toan Tran, Agoulmine Nazim (University of Evry Val d'Essonne, France)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 351 C/F

WN12: Scheduling in Wireless Networks Chair: Rajeev Shorey (NIIT University, India)

Downlink Scheduling with Transmission Strategy Selection for Two-cell MIMO Networks

Binglai Niu, Vincent W.S. Wong, Robert Schober (University of British Columbia, Canada)

Real-Time Scheduling over Markovian Channels: When Partial Observability Meets Hard Deadlines

Lei Yang, Sugumar Murugesan, Junshan Zhang (Arizona State University, USA)

Downlink Scheduling For User Equipment Served by Multiple Mobile Terminals Yu Wang, Hari Krishna Garg, Mehul Motani (National University of Singapore, Singapore)

Risk Sensitive Resource Control Approach for Delay Limited Traffic in Wireless Networks

Mohamad Assaad, Ayaz Ahmad, Hamidou Tembine (Supelec, France)

Link Activity Scheduling for Minimum End-to-End Latency in Multihop Wireless Sensor Networks

Maggie Cheng, Xuan Gong, Yibo Xu (Missouri University of Science and Technology, USA) Lin Cai (University of Victoria, Canada)

High-Throughput Collision-Free Client Polling in Multi-AP WLANs

Dawei Gong, Yuanyuan Yang (Stony Brook University, USA) Hewu Li (Tsinghua University, China)

Wednesday, 7 December 2011 • 13:30 – 15:30 Room: GRB 350 B

WN13: Cooperative Networking & Network Coding Chair: Antonios Argyriou (University of Thessaly / CERTH, Greece)

Information-Geometric Wireless Network Inference

Yalin E Sagduyu (Intelligent Automation Inc. / University)

(Intelligent Automation, Inc. / University of Maryland, College Park, USA) Jason Hongjun Li (Intelligent Automation Inc., USA)

Joint Generation Network Coding in Unreliable Wireless Networks Yang Qin, Xiangtai Xu (HIT Shenzhen Graduate School, China) Yuanyuan Yang (Stony Brook University, USA) Jiali Zhou, Hangpeng Wang (HIT Shenzhen Graduate School, China)

On Hardness of Multiflow Transmission in Delay Constrained Cooperative Wireless Networks

Marjan Baghaie, Dorit Hochbaum, Bhaskar Krishnamachari (University of Southern California, USA)

A Cooperative Transmission Approach to Reduce End-to-End Delay in Multi Hop Wireless Ad Hoc Networks

Navid Tadayon, Honggang Wang, Bikash Sharma (University of Massachusetts, Dartmouth, USA) Wei Wang (South Dakota State University, USA) Kun Hua (Lawrence Technological University, USA)

Weakly Secure Network Coding for Wireless Cooperative Data Exchange Muxi Yan, Alex Sprintson (Texas A&M University, USA)

A Space-Time Scheduling Assisted Cooperative Relay for MMWAVE WLAN/WPAN Systems with Directional Antenna Zhou Lan (NICT, Japan)

Liru Lu, Xin Zhang (NICT, Singapore) Chang-Woo Pyo, Hiroshi Harada (NICT, Japan)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 322 A/B

AHSN14: Wireless Sensor and Actor Networks VI Chair: Ioannis Krikidis (University of Patras Greece, Greece)

Minimization of the Diffusion Delay of a Tree-Based Wireless Sensor Network

François Delobel, Alexandre Guitton (Clermont University, France) Michel Misson (Equipe REPLIC, IUT Clermont-Fd, France) Waltenegus Dargie (Technische Universität Dresden, Germany)

Uncertainty-Aware Sensor Network Deployment

Mustapha Senouci (EMP, Algeria) Abdelhamid Mellouk (University Paris-Est Creteil Val de Marne, France) Latifa Oukhellou (French National Institute for Transport and Safety Research, France) Amar Aissani (USTHB, Algeria)

Coordinate-free Distributed Algorithm for Boundary Detection in Wireless Sensor Networks

Xu Li (University of Waterloo, Canada) Shibo He, Jiming Chen (Zhejiang University, China) Xiaohui Liang, Rongxing Lu, Sherman Shen (University of Waterloo, Canada)

Connectivity-based Distributed Coverage Hole Detection in Wireless Sensor

Networks Feng Yan, Philippe Martins (Telecom ParisTech, France) Laurent Decreusefond (Telecom ParisTech / CNRS LTCI, France)

Cooperative Self-Deployment Strategies in a Mobile Sensor Network with Prioritized Coverage Plan

Hamid Mahboobi Baghdad Abad, Jalal Habibi, Amir Aghdam (Concordia University, Canada) Kamran Savrafian (NIST, USA)

On Boundary Detection of 2-D and 3-D Wireless Sensor Networks

Dulanjalie C. Dhanapala, Anura Jayasumana, Sahil Mehta (Colorado State University, USA)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 330 A/B AHSN15: Security Chair: Yu Chen (State University of New York, Binghamton, USA)

Message Security in Multi-Path Ad Hoc Networks Using a Neural Network-Based Cipher

Chris Liu (University of I-Lan, Taiwan) Isaac Woungang (Ryerson University, Canada) Han-Chieh Chao (National Ilan University, Taiwan) Sanjay Kumar Dhurandher (Netaji Subhas Institute of Technology, India) Ting-Yun Chi (National Taiwan University, Taiwan) Mohammad S. Obaidat (Monmouth University, USA)

Towards an Integration of Security and Quality of Service in IP-Based Mobile Ad Hoc Networks

Peter J. J. McNerney, Ning Zhang (University of Manchester, United Kingdom)

Distributed Reaction Mechanisms to Prevent Selfish Misbehavior in Wireless Ad Hoc Networks

Neeraj Jaggi, Vamshikrishna R. Giri, Vinod Namboodiri (Wichita State University, USA)

Autoregression Models for Trust Management in Wireless Ad Hoc Networks Zhi Li (University of Ottawa, Canada) Xu Li (University of Waterloo, Canada) Amiya Nayak, Ivan Stojmenovic (University of Ottawa, Canada) Venkat Narasimhan (Les Entreprises Norleaf Networks Inc., Canada)

Averting In-situ Adversaries in Wireless Sensor Network Using Deceptive Traffic Yousef Ebrahimi, Mohamed Younis (University of Maryland, Baltimore County, USA)

Can You Help Me Run These Code Segments on Your Mobile Device? Mina Guirguis, Robert Ogden, Zhaochen Song, Sobit Thapa, Qijun Gu (Texas State University, USA)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 332 F CQRM08: Smart Grid and Power Chair: Tetsuya Yokotani (Mitsubishi Electric Corp., Japan)

Dynamic Power Management of Distributed Internet Data Centers in Smart Grid Environment

Peijian Wang (Xian Jiaotong University, China) Lei Rao, Xue Liu (McGill University, Canada) Yong Qi (Xian Jiaotong University, China)

On Network Performance Evaluation toward the Smart Grid: A Case Study of DNP3 over TCP/IP

Xiang Lu, Zhuo Lu, Wenye Wang (North Carolina State University, USA) Jianfeng Ma (Xidian University, China)

Optimizing Energy through Parabola Based Routing in Underwater Sensor Networks

Sanjay Dhurandher (NSIT, University of Delhi, India) Mohammad S. Obaidat (Monmouth University, USA) Siddharth Goel, Abhishek Gupta (Netaji Subhas Institute of Technology, India)

A Flow-Based Centrality Measure through Resistance Distances in Smart-Grid Networks

Daehyun Ban (North Carolina State University, USA)

A Class of Low Power Error Compensation Iterative Decoders

Amr M. A. Hussien, Muhammad Š. Khairy, Amin Khajeh, Ahmed M. Eltawil, Fadi J. Kurdahi (University of California, Irvine, USA)

Performance Evaluation of Multicasting in Energy-constrained DTN with Selfish Nodes

Yong Li, Li Su, Depeng Jin, Lieguang Zeng (Tsinghua University, China)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 332 A

CRN08: OFDM-based Cognitive Radio Systems Chair: Guowang Miao (Royal Institute of Technology, USA)

Multiuser Spectral Precoding for OFDM-based Cognitive Radios

Xiangwei Zhou, Geoffrey Li (Georgia Tech, USA) Guolin Sun (Huawei Technologies Sweden AB, Sweden)

Joint Frequency Synchronization and Spectrum Occupancy Characterization in OFDM-based Cognitive Radio Systems

Milan Zivkovic, Rudolf Mathar (RWTH Aachen University, Germany)

Joint Subcarrier Pairing and Power Allocation for DF-Relayed OFDM Cognitive Systems

Musbah Shaat, Faouzi Bader (Centre Tecnologic de Telecomunicacions de Catalunya, Spain)

Energizing Global Communications

Cross-Layer Design for Interference-limited Spectrum Sharing Systems with Heterogeneous QoS

Cong Shi, Ying Wang, Tan Wang, Ping Zhnag (Beijing University of Posts and Telecommunications, China)

An Efficient Power Allocation Algorithm for OFDM based Underlay Cognitive Radio Networks

Xun Zhou, Bin Wu (University of Electronic Science and Technology of China, China) Pin-Han Ho (University of Waterloo, Canada) Xiang Ling (University of Electronic Science and Technology of China, China)

Extreme Statistics Based Spectrum Sensing for OFDM Systems by Exploiting Frequency-Domain Pilot Polarity

Zhengwei Lu, Parisa Cheraghi, Yi Ma (University of Surrey, United Kingdom)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 332 B

CRN09: Economic and Game-Theoretic Approaches to Dynamic Spectrum Access

Chair: Shuangqing Wei (Louisiana State University, USA)

Price-Based Resource Allocation for Femtocell Networks: A Stackelberg Game Approach

Xin Kang, Rui Zhang (Institute of Infocomm Research, Singapore) Mehul Motani (National University of Singapore, Singapore)

Competition and Bargaining in Wireless Networks with Spectrum Leasing Luis Guijarro, Vicent Pla (Universidad Politecnica de Valencia, Spain) Bruno Tuffin (INRIA Rennes, Bretagne Atlantique, France) Patrick Maillé (Telecom Bretagne, France) Jose R. Vidal (Universidad Politecnica de Valencia, Spain)

A Waiting-Time Auction based Dynamic Spectrum Allocation Algorithm in Cognitive Radio Networks

Guangen Wu, Pinyi Ren, Chao Zhang (Xian Jiaotong University, China)

Optimal Incentive-Compatible Pricing for Dynamic Bandwidth Trading and Allocation in Efficient Spectrum Management Yeali S. Sun, Yu-Chun Pan (National Taiwan University, Taiwan)

Dynamic Bandwidth Allocation under Uncertainty in Cognitive Radio Networks Kun Zhu, Dusit Niyato, Ping Wang (Nanyang Technological University, Singapore)

Network Throughput Maximization in CRAHNs Using Local Cooperative Game Yuhua Xu, Jinlong Wang, Gao Zhan, Qihui Wu (PLA University of Science and Technology, China) Alagan Anpalagan (Ryerson University, Canada)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 332 C CSS06: Privacy II

Chair: Shucheng Yu (University of Arkansas, Little Rock, USA)

A Privacy Preserving Handover Authentication Scheme for EAP-based Wireless Networks

Qi Jing (Xidian University, China) Yuqing Zhang (Graduate University of Chinese Academy of Sciences, China) Anmin Fu (Nanjing University of Science and Technology, China) Xuefeng Liu (Xidian University, China)

Health-Post: A Delay-Tolerant Secure Long-Term Health Care Scheme in Rural Area

Mrinmoy Barua, Rongxing Lu, Sherman Shen (University of Waterloo, Canada)

Security Mechanism for Multi-domain Vehicle-to-Grid Infrastructure Binod Vaidya, Dimitrios Makrakis, Hussein T. Mouftah (University of Ottawa, Canada)

An Efficient and Secure User Revocation Scheme in Mobile Social Networks Xiaohui Liang, Xu Li, Rongxing Lu (University of Waterloo, Canada) Xiaodong Lin (University of Ontario, Canada)

Sherman Shen (University of Waterloo, Canada)

A Multi-hop Privacy-Preserving Reputation Scheme in Online Social Networks Linke Guo (University of Florida, USA)

Xiaoyan Zhu (Xidian University, China) Chi Zhang, Yuguang Fang (University of Florida, USA)

Zero Kullback-Liebler Divergence Image Data Hiding Guoqi Luo, Koduvayur P. Subbalakshmi (Stevens Institute of Technology, USA)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 332 D

CSWS06: Resource Allocation and System Optimization

Chair: Stefano Giordano (University of Pisa, Italy)

MPEG-4 Traffic Prediction Using Density Estimation for Dynamic Bandwidth Allocation in IEEE 802.16 Networks

Boudour Ghalem (UPS, France) Rahim Kacimi (University of Toulouse, France) Abbas Jamalipour (University of Sydney, Australia) Zoubir Mammeri (Paul Sabatier University, France)

Battery Capacity Footprinting and Optimization Analysis for Wireless Multimedia Communication

Jianxin Sun (University of Nebraska-Lincoln, USA) Dalei Wu (Massachusetts Institute of Technology, USA) Song Ci (University of Nebraska-Lincoln, USA)

A Decentralized Cross-layer Approach to Cooperative Video Transmission

Nicholas Mastronarde (State University of New York, Buffalo, USA) Francesco Verde (Università degli Studi di Napoli Federico II, Italy) Donatella Darsena (University of Napoli Parthenope, Italy) Anna Scaglione (University of California, Davis, USA) Mihaela van der Schaar (University of California, Los Angeles, USA)

Quality-Optimized Energy Neutrality with Link Layer Resource Allocation for Zero-Power Harvesting Wireless Communications Wei Wang (South Dakota State University, USA)

Cross Layer Resource Allocation Design for Uplink Video OFDMA Wireless Systems

Dawei Wang, Pamela Cosman, Laurence Milstein (University of California, San Diego, USA)

Bandwidth Allocation for BitTorrent under Multi-Torrent Environments Jaeyoung Choi, Jinyoung Han, Taejoong Chung, Eunsang Cho, Taekyoung Kwon, Yanghee Choi (Seoul National University, Korea)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 332 E CTO6: Detection and Estimation Chair: Erik S. Perrins (University of Kansas, USA)

A Construction of Turbo-Like Codes for Iterative Channel Estimation based on Probabilistic Bias

Keigo Takeuchi (University of Electro-Communications, Japan) Ralf R. Müller (Norwegian University of Science and Technology, Norway) Mikko Vehkaperä (Royal Institute of Technology, Sweden)

Lattice-Reduction Aided Linear Equalization in Cyclic-prefix System Ahmed Hesham Mehana, Aria Nosratinia (University of Texas, Dallas, USA)

A General MIMO Detection Scheme and Its Performance-Complexity Tradeoff Ronald Y. Chang, Wei-Ho Chung (Academia Sinica, Taiwan)

An Efficient CVA-based Decoding Algorithm for Tail-biting Codes

Xiaotao Wang (Shanghai Institute of Microsystem and Information Technology / Graduate University of Chinese Academy of Sciences, China) Hua Qian (Chinese Academy of Sciences, China) Jing Xu (Shanghai Institute of Microsystem and Information Technology /

SHRCWC, China)

Yang Yang (Shanghai Research Center for Wireless Communications, China) Fang Wang (Shanghai Research Centre for Wireless Communication, China)

Two Convergence Enhancements for BICM-ID Using the Max-Log-MAP Criterion in MIMO Systems with Non-Gray Mappings

Dan Zhang, Gerd H. Ascheid (RWTH Aachen University, Germany)

Parameter Estimation and Tracking in Physical Layer Network Coding Manish Jain, Scott Miller, Alex Sprintson (Texas A&M University, USA)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 342 A NGN06: Cellular and Wireless Chair: Vinod Sharma (Indian Institute of Science, India)

A New Distributed Approach for Achieving Clock Synchronization in Heterogeneous Networks

Hani Mehrpouyan (Chalmers University of Technology, Sweden) Steven D Blostein (Queen's University, Canada) Tommy Svensson (Chalmers University of Technology, Sweden)

Inter-Cell Interference Coordination for Type I Relay Networks in LTE Systems Yiwei Yu, Eryk Dutkiewicz (Macquarie University, Australia)

Xiaojing Huang (CSIRO ICT Centre, Australia) Markus Dominik Mueck (Intel Mobile Communications, Germany)

Estimation-Based Non-Cooperative Power Allocation in Two-Tier Femtocell Networks

Nessrine Chakchouk, Bechir Hamdaoui (Oregon State University, USA)

Reducing Unnecessary Handovers: Call Admission Control Mechanism between WiMAX and Femtocells

Rekha Singoria, Talmai B. Oliveira, Dharma P. Agrawal (University of Cincinnati, USA)

Mechanical Relaying in Cellular Networks with Soft-QoS Guarantees

Panayiotis Kolios (King's College London / University of London, United Kingdom) Vasilis Friderikos (King's College London, United Kingdom) Katerina Papadaki (London School of Economics, United Kingdom)

MIMO Mode Switching Scheme for Rate Adaptation in 802.11n Wireless Networks

Jian Chen, Hewu Li (Tsinghua University, China) Feixiong Zhang (Rutgers University, USA) Jianping Wu (Tsinghua University, China)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 342 B

ONS04: Energy-Efficient Optical Networks Chair: Martin Maier

(Institut National de la Recherche Scientifique, Canada)

Energy-efficient Frame-buffer Architecture and its Control Schemes for ONU Power Reduction

Hiroyuki Uzawa, Kazuhiko Terada, Namiko Ikeda, Akihiko Miyazaki, Masami Urano, Tsugumichi Shibata (NTT, Japan)

Minimizing EEE overhead in Green Packet Optical Transport Networks (P-OTNs) Mohammad Nurujjaman, Mehdi Sharifi-Rayeni, Chadi Assi (Concordia University, Canada) Martin Maier (Institut National de la Recherche Scientifique, Canada)

Power-Aware Multi-Rate WDM Network Design under Static/Dynamic Traffic Mayssa Youssef, Elias A. Doumith (Telecom ParisTech, France) Maurice Gagnaire (Telecom ParisTech / Institut Telecom, France)

Optical-Layer Traffic Grooming in Flexible Grid WDM Networks

Ankitkumar Patel (University of Texas, Dallas, USA) Philip N. Ji, Ting Wang (NEC Laboratories America, USA) Jason P. Jue (University of Texas, Dallas, USA)

On Spectrum-Efficient Green Optical Backbone Networks

Avishek Nag (University of California, Davis, USA) Ting Wang (NEC Laboratories America, USA) Biswanath Mukherjee (University of California, Davis, USA)

Regenerator Site Selection in Waveband Optical Networks Supporting Mixed Line Rates

Saket Varma, Jason P. Jue (University of Texas, Dallas, USA)

Wednesday, 7 December 2011 • 16:00 - 18:00 Room: GRB 342 C

SAC11: Privacy and Reputation Chair: Charalampos Z. Patrikakis (Technological Educational Institute of Piraeus, Greece)

Designing Incentives for P2P Multimedia Sharing Yu Zhang, Mihaela van der Schaar (University of California, Los Angeles, USA)

Gemstone: Empowering Decentralized Social Networking with High Data Availability

Florian Tegeler, David Koll, Xiaoming Fu (University of Goettingen, Germany)

Robust Reputation Management Using Probabilistic Message Passing Erman Ayday, Faramarz Fekri (Georgia Institute of Technology, USA)

Impacts of User-selfishness on Cooperative Content Caching in Social Wireless Networks

Mahmoud Taghizadeh, Subir Biswas (Michigan State University, USA)

Analysis of Privacy in Online Social Networks from the Graph Theory Perspective

Leucio Antonio Cutillo, Refik Molva, Melek Önen (EURECOM, France)

De-anonymizing Dynamic Social Networks Xuan Ding, Lan Zhang, Zhiguo Wan, Ming Gu (Tsinghua University, China)

Wednesday, 7 December 2011 • 16:00 - 18:00 Room: GRB 342 D

SPC04: Beam-forming and Multi-antenna Systems II Chair: Constantinos B. Papadias (Athens Information Technology, Greece)

New Direction-of-Arrival-Based Source Localization Algorithm for Wideband Signals

Lu Lu, Hsiao-Chun Wu (Louisiana State University, USA) Shih Yu Chang (National Tsing Hua University of Taiwan, Taiwan)

A Rate Balancing Technique for MIMO-Cognitive Radio Network under a Mixed QoS Requirement

Yogachandran Rahulamathavan, Sangarapillai Lambotharan (Loughborough University, United Kingdom)

Optimal MMSE Beamforming for Multiuser Downlink with Delayed CSI Feedback Using Codebooks

Binbin Dai, Wei Xu, Chunming Zhao (Southeast University, China)

Optimized Solutions for Beamforming Problems in Amplify-Forward Wireless Relay Networks

Anh Huy Phan (University of New South Wales, Australia) Ha H Kha, Hoang D. Tuan (University of Technology, Sydney, Australia)

Robust MIMO Receiver Based on Belief Propagation in the Presence of Imperfect Channel and Noise Knowledge

Ahmad Ali Farhoodi, Amir Banihashemi (Carleton University, Canada)

Linear Precoding Based On Correlation Rotation for the Multi-User MIMO Downlink

Christos Masouros (Queen's University Belfast, United Kingdom)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 342 E

SPC07: Detection, Estimation and Identification III Chair: Hsi-Pin Ma (National Tsing Hua University, Taiwan)

Two-Way Denoise-And-Forward Relaying with Non-Coherent Differential Modulation

Wei Guan, K. J. Ray Liu (University of Maryland, USA)

Energizing Global Communications

Interference Alignment Algorithm for Quasi-static Cellular SDMA System Liangzhong Ruan, Vincent Lau (Hong Kong University of Science & Technology, Hong Kong)

Transmit and Receive Weights in Vector Coding with Channel Estimation Error and Feedback Delay

Kyohei Takano (Keio University, Japan) Koichi Adachi (Institute for Infocomm Research, Singapore) Tomoaki Ohtsuki (Keio University, Japan)

DOA Estimation for ULA Systems from Short Data Snapshots: An Annihilating Filter Approach

Faouzi Bellili (Institut National de la Recherche Scientifique, Canada) Sofiene Affes (INRS-EMT, Canada) Alex Stéphenne (Huawei / INRS-EMT, Canada)

An Improved Oscillator Method for Modeling Structured Speech Anton Yen (Space and Naval Warfare Systems Center Pacific, USA) Irina Gorodnitsky (University of California, San Diego, USA)

Experimental Validation of a New Pedestrian Speed Estimator for OFDM Systems in Indoor Environments

Bogdan Pricope (Jacobs University Bremen, Germany) Harald Haas (University of Edinburgh, United Kingdom)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 342 F

WC21: Resource Allocation Chair: Zhu Han (University of Houston, USA)

Polynomial-Complexity Optimal Resource Allocation Framework for Uplink SC-FDMA Systems

Ayaz Ahmad, Mohamad Assaad (Supelec, France)

Joint User Pairing and Resource Allocation for Uplink SC-FDMA Systems Jiancun Fan, Qinye Yin (Xian Jiaotong University, China) Geoffrey Li (Georgia Tech, USA)

Bingguang, Xiaolong Zhu (Huawei Shanghai Research Institute, China)

Low-Complexity Co-Tier Interference Reduction Scheme in Open-Access Overlaid Cellular Networks

Redha M. Radaydeh, Mohamed-Slim Alouini (KAUST, Saudi Arabia)

A Spectral Efficient and Fair User-centric Spectrum Allocation Approach for Downlink Transmissions

Shih-Hsuan Tang (National Taiwan University, Taiwan) Meng Chang Chen (Academia Sinica, Taiwan) Yeali S. Sun, Zsehong Tsai (National Taiwan University, Taiwan)

Overbooking Approach for Dynamic Spectrum Management

Jing Li, Qinghai Yang (Xidian University, China) Lajos Hanzo (University of Southampton, United Kingdom) Kyung Sup Kwak (Inha University, Korea)

On the Average Capacity and Bit Error Probability of Wireless Communication Systems

Ferkan Yilmaz, Mohamed-Slim Alouini (KAUST, Saudi Arabia)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 350 D/E/F WC22: Network Coding II Chair: Abdallah A. Khreishah (Temple University, USA)

Physical Layer Network Coding in Multipath Channel: Effective Precoding-Based Transmission Scheme

Giulio Bartoli, Romano Fantacci, Dania Marabissi, Renato Simoni (University of Florence, Italy)

Design of Binary Network Coding for Wireless Broadcast Guosen Yue, Mohammad Khojastepour, Sampath Rangarajan (NEC Labs America, USA)

Symbol-Based Physical-Layer Network Coding with MPSK Modulation Ruohan Cao, Tiejun Lv, Feichi Long, Hui Gao (Beijing University of Posts and Telecommunications, China)

Packet Loss Analysis for Media Streaming with Network Coding in Wireless Broadcast Networks

Hancheng Lu (University of Science and Technology of China, China) Chang Wen Chen (State University of New York, Buffalo, USA)

Flow Based XOR Network Coding for Lossy Wireless Networks

Abdallah A. Khreishah, Jie Wu, Pouya Ostovari (Temple University, USA) Issa M. Khalil (United Arab Emirates University, UAE)

Auction-Based Power Allocation for Multiuser Two-Way Relaying Networks with Network Codina

Hongwan Xu, Junni Zou (Shanghai University, China)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 351 A/B WC23: Relay Technologies II Chair: Yindi Jing (University of Alberta, Canada)

Interference Relay Channel with Precoded Dynamic Decode and Forward Protocols

Mélanie Plainchault, Nicolas Gresset (Mitsubishi Electric Research Centre Europe, France) Ghaya Rekaya-Ben Othman (Telecom ParisTech, France)

Relay Cooperation with Guard Zone to Combat Interference from an Underlaid Network

Sungrae Cho, Wan Choi (KAIST, Korea)

Optimization for Pragmatic Half-Duplex Relay Network Marwan Hadri Azmi, Jun Li, Robert Malaney, Jinhong Yuan (University of New South Wales, Australia)

User Allocation and Precoder Design for Coordinated Relaying Ganesh Venkatraman, Antti Tölli, Markku Juntti (University of Oulu, Finland)

A Simple Distributed Multihop Diversity Relaying Scheme based on Repetition

Yanwen Li (University of Alberta, Canada) Golnaz Farhadi (Stanford University, USA) Norman C. Beaulieu (University of Alberta, Canada)

Efficient Rateless Coded Multi-hop Relaying with Joint Energy and Information Accumulation

Xijun Wang, Wei Chen, Zhigang Cao (Tsinghua University, China)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 351 D/E WC24: Power Control Chair: Danlu Zhang (Qualcomm, USA)

Distributive Power Control and Rate Adaptation Link Scheduling in Wireless Mesh Networks

Izhak Rubin, Kian Hedayati (University of California, Los Angeles, USA)

Minimizing Transmit Power in a Virtual-cell Downlink with Distributed Antennas Boon Sim Thian (Stanford University, USA) Sheng Zhou (Tsinghua University, China) Andrea Goldsmith (Stanford University, USA) Zhisheng Niu (Tsinghua University, China)

Congestion-based Rate and Power Control in Wireless Cellular Networks Anders Möller, Ulf Jönsson (Royal Institute of Technology, Sweden) Mats Blomgren, Fredrik Gunnarsson (Ericsson Research, Sweden)

Design and Analysis of Intervention Mechanism in Power Control Games Yuanzhang Xiao, Jaeok Park, Mihaela van der Schaar (University of California, Los Angeles, USA)

Two-Dimensional Superposition Modulation and Power Allocation for Cooperative Wireless Communication System Chia-Yang Chiang, Umesh Phuyal, Vijay Bhargava (University of British Columbia, Canada)

Efficient Power Amplification for Wireless Communication based on Single-Carrier

Dov Wulich, Igor Gutman (Ben-Gurion University of the Negev, Israel)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 362 A

WC40: Networks Systems and Satellite

Communications Chair: Lingyang Song (Peking University, China)

Tarantula: Towards an Accurate Network Coordinate System by Handling Major Portion of TIVs

Zhuo Chen (Tsinghua University, China) Yang Chen (Duke University, USA) Yibo Zhu (University of California, Santa Barbara, USA) Cong Ding (University of Goettingen, Germany) Beixing Deng, Xing Li (Tsinghua University, China)

Integrated Signaling Framework for Joint Reservation of Application and Network Resources for Future Internet

Barbara Martini (CNIT, Italy) Walter Cerroni (University of Bologna, Italy) Molka Gharbaoui (Scuola Superiore Sant'Anna, Italy) Aldo Campi (University of Bologna, Italy) Piero Castoldi (Scuola Superiore Sant'Anna, Italy) Franco Callegati (University of Bologna, Italy)

Online Strategizing Distributed Renewable Energy Resource Access in Islanded Microgrids

Xi Fang, Dejun Yang, Guoliang Xue (Arizona State University, USA)

Adaptive Networks with Noisy Links Sheng-Yuan Tu, Ali H. Sayed (University of California, Los Angeles, USA)

Compressed Network Tomography for Probabilistic Tree Mixture Models Amin Khajehnejad (California Institute of Technology, USA) Mohammad Khojastepour (NEC Laboratories America, USA) Babak Hassibi (California Institute of Technology, USA)

On the Application of the Baum-Welch Algorithm for Modeling the Land Mobile Satellite Channel

Balazs Matuz, Francisco Lazaro Blasco, Gianluigi Liva (German Aerospace Center), Germany)

Wednesday, 7 December 2011 • 16:00 – 18:00 Room: GRB 351 C/F

WN14: Cellular Networks Chair: Debarati Sen

(Chalmers University of Technology, Sweden / Indian Institute of Technology, Kharagpur)

A Geometric Probability Model for Capacity Analysis and Interference Estimation in Wireless Mobile Cellular Systems

Yanyan Zhuang, Yuanqian Luo, Lin Cai, Jianping Pan (University of Victoria, Canada)

Spectrum Map Empowered Resource Management for QoS Guarantees in Multitier Cellular Networks

Shao-Yu Lien, Sung-Yin Shih, Kwang-Cheng Chen (National Taiwan University, Taiwan)

Offloading Wireless Cellular Networks via Energy-Constrained Local Ad Hoc Networks

Lina Al-Kanj, Zaher Dawy (American University of Beirut, Lebanon)

LIP: A Light-weighted Session-based Incentive Protocol for Multi-hop Cellular Networks

Hao Yue, Miao Pan, Rongsheng Huang (University of Florida, USA) Hongxia Zhao (Huawei Technologies Co. Ltd., China) Yuguang Fang (University of Florida, USA)

Using Generalized Second Price Auction for Congestion Pricing Yih-Farn Robin Chen, Rittwik Jana (AT&T Labs Research, USA) Karthik Kannan (Purdue University, USA)

A Modified COB Technique for Estimating Location in Cellular Systems with Non-Uniformly Distributed Population

Nejla Ghaboosi, Abbas Jamalipour (University of Sydney, Australia)

Wednesday, 7 December 2011 • 16:00 - 18:00 Room: GRB 350 B

WN15: Resource Allocation Chair: Qinghe Du (Xian Jiaotong University, China)

Resource-Minimized Channel Assignment for Multi-transceiver Wireless Networks

Ryan Irwin, Allen B. MacKenzie (Virginia Tech, USA) Luiz A. DaSilva (Virginia Polytechnic Institute and State University / Trinity College Dublin, Ireland)

Resource-Awareness in Context Data Distribution for Mobile Environments Mario Fanelli, Luca Foschini, Antonio Corradi (University of Bologna, Italy) Azzedine Boukerche (University of Ottawa, Canada)

Dynamic Radio Resource Management for OFDMA-based Relay Enhanced Cellular Network

Mikhail Pikhletsky (Huawei Technologies, Russia) Farid Khafizov (Huawei Technologies, USA) Jietao Zhang, Hongcheng Zhuang (Huawei Technologies, China)

A Distributed Power Control Scheme for Cellular Network Assisted D2D Communications

Gabor Fodor (Ericsson Research, Sweden) Norbert Reider (Budapest University of Technology and Economics, Hungary)

Coalition-Assisted Resource Allocation for Large-Scale Cooperative Networks Yi Shi, Xiaodai Dong (University of Victoria, Canada) Khaled Ben Letaief (Hong Kong University of Science & Technology, Hong Kong) Ranjan K. Mallik (Indian Institute of Technology, Delhi, India)

Resource Allocation for Semi-elastic Applications in Wireless Networks Chao Yang, Scott Jordan (University of California, Irvine, USA)

TECHNICAL SYMPOSIA • THURSDAY

Thursday, 8 December 2011 • 8:00 - 10:00 Room: GRB 322 A/B

AHSN16: Wireless Sensor and Actor Networks VII Chair: R. Venkatesha Prasad

(Delft University of Technology, Netherlands)

On the Capacity and Delay of Data Gathering with Compressive Sensing in Wireless Sensor Networks

Haifeng Zheng, Shilin Xiao, Xinbing Wang, Xiaohua Tian (Shanghai Jiaotong University, China)

Major Coefficients Recovery: A Compressed Data Gathering Scheme for Wireless Sensor Network

Liwen Xu, Yongcai Wang, Amy Yuexuan Wang (Tsinghua University, China)

Sufficient Node Density Conditions on Delay-Tolerant Sensor Networks for Wildlife Tracking and Monitoring

Samina Ehsan, Max F. Brugger, Kyle Bradford, Bechir Hamdaoui, Yevgeniy Kovchegov (Oregon State University, USA)

Efficient Flow Allocation Algorithms for In-Network Function Computation Virag Shah (University of Texas, Austin, USA)

Bikash K. Dey, D. Manjunath (Indian Institute of Technology Bombay, India)

Deficit Round-Robin Based Message Ferry Routing

Ahmed Mansy, Mostafa Ammar, Ellen Zegura (Georgia Institute of Technology, USA)

A Buffer Management Scheme Based on Message Transmission Status in Delay **Tolerant Networks**

Yao Liu (Central South University / Hunan University of Commerce, China) Jianxin Wang, Shigeng Zhang (Central South University, China) Hongjing Zhou (Hunan University of Commerce, China)

Thursday, 8 December 2011 • 8:00 - 10:00 Room: GRB 330 A/B

AHSN17: Wireless Communications I Chair: Karim Djouani (Tshwane University of Technology, South Africa)

Optimal Decision Fusion Based Automatic Modulation Classification by Using Wireless Sensor Networks in Multipath Fading Channel Yan Zhang, Nirwan Ansari (NJIT, USA) Wei Su (US Army RDECOM CERDEC, USA)

Utilization of OFDM for Efficient Packet Forwarding in Wireless Sensor Networks

Ahmed Bader (VTEL Group - Dubai / Telecom ParisTech, Jordan) Karim Abed-Meraim (Télécom Paris, France / University of Sharjah, UAE) Mohamed-Slim Alouini (KAUST, Saudi Arabia)

Preprocessing for Iterative ML-Detection in Frequency-Selective MIMO Channels

Michael Krause (Consultant, New Zealand) Desmond P. Taylor, Philippa A. Martin (University of Canterbury, New Zealand)

Modeling and Generation of Space-Time Correlated Signals for Sensor Network Fields

Davide Zordan (University of Padova, Italy) Giorgio Quer (University of California San Diego / University of Padova, USA) Michele Zorzi, Michele Rossi (University of Padova, Italy)

Exploring the Physical Channel of Diffusion-based Molecular Communication by Simulation

Ignacio Llatser, Iñaki Pascual, Nora Garralda, Cabellos-Aparicio (Universidad Politècnica de Catalunya, Spain) Massimiliano Pierobon (Georgia Institute of Technology, USA) Eduard Alarcón, Josep Sole Pareta (Universidad Politécnica de Catalunya, Spain)

An Efficient Guard-band-aware Multi-channel Spectrum Sharing Mechanism for **Dynamic Access Networks**

Haythem A. Bany Salameh (Yarmouk University, Jordan) Marwan Krunz (University of Arizona, USA) Dave Manzi (Raytheon Corporation, USA)

Thursday, 8 December 2011 • 8:00 - 10:00 Room: GRB 332 F

CQRM09: Performance Chair: Christos Verikoukis

(Telecommunications Technological Centre of Catalonia, Spain)

Hierarchical Management Architecture for Multi-Access Networks

Dzmitry Kliazovich (University of Luxembourg, Luxemburg) Tiia Sutinen, Heli Kokkoniemi-Tarkkanen, Jukka Mäkelä, Seppo Horsmanheimo (VTT Technical Research Centre of Finland, Finland)

An Explicit Congestion Control Protocol based on Bandwidth Estimation Jianxin Wang, Jie Chen, Shigeng Zhang, Weiping Wang (Central South University, China)

Fast Simulation of Error Control Coded Systems using Flat Histogram Monte Carlo Methods

Pushpika Wijesinghe, Upul Gunawardana, Ranjith Liyanapathirana (University of Western Sydney, Australia)

Parallel Packet Switch without Segmentation-and-Reassembly Hao Jin, Deng Pan, Niki Pissinou (Florida International University, USA)

Traffic Classification through Joint Distributions of Packet-level Statistics Alberto Dainotti, Antonio Pescapé (University of Napoli Federico II, Italy) Hyun-chul Kim (Seoul National University, Korea)

Multicast vs. Unicast Error Recovery Tradeoffs for Group Correlated IPTV Networks

Aytac Azgin (Georgia Institute of Technology, USA)

Thursday, 8 December 2011 • 8:00 - 10:00 Room: GRB 332 A

CRN10: Cognitive Relaying

Chair: Aydin Sezgin (RUB / Digital Communication Systems, Germany)

Performance Analysis of Cognitive Radio Relay Networks Using Decode and Forward Selection Relaying Over Rayleigh Fading Channels Ala Abu Alkheir, Mohamed Ibnkahla (Queen's University, Canada)

Prior Zero-Forcing for Relaying Primary Signals in Cognitive Network Shenghui Song, Khaled Ben Letaief (Hong Kong University of Science & Technology, Hong Kong)

Cognitive Relaying with Frequency Incentive Taskeen Ameer Nadkar, Vinaykumar Mohanlal Thumar, Konchady Gautam Shenoy (Indian Institute of Technology, Bombay, India) Uday B. Desai (Indian Institute of Technology, Hyderabad, India) Prof. Merchant (Indian Institute of Technology, Bombay, USA)

Location-based Joint Relay Selection and Channel Allocation for Cognitive **Radio Networks**

Fangyong Li (Hong Kong University of Science and Technology, Hong Kong) Bo Bai

(Hong Kong University of Science & Technology / Tsinghua University, Hong Kong) Jun Zhang, Khaled Ben Letaief

(Hong Kong University of Science & Technology, Hong Kong)

Performance Analysis of Cognitive Relay Networks under Power Constraint of Multiple Primary Users

Hung Tran, Trung Q. Duong, Hans-Juergen Zepernick (Blekinge Institute of Technology, Sweden)

EEE Global Communications Conference

Cross-Layer QoS Provisioning for Cooperative Transmissions over Cognitive Radio Relay Networks with Imperfect Spectrum Sensing

Dan Chen, Hong Ji (Beijing University of Posts and Telecommunications, China) Victor CM Leung (University of British Columbia, Canada)

TECHNICAL SYMPOSIA • THURSDAY

Thursday, 8 December 2011 • 8:00 - 10:00 Room: GRB 332 B

CRN11: Beamforming, Multi-Antenna and MIMO Techniques for Cognitive Radio Networks Chair: Chan-Byoung Chae (Yonsei University, USA)

Beamforming in Cognitive Radio with Partial Channel State Information Jung-Hoon Noh, Seong-Jun Oh (Korea University, Korea)

Performance Analysis of Null-steering Beamformers in Cognitive Radio Systems

Nadia Jamal, Patrick Mitran (University of Waterloo, Canada)

Multi-Antenna Blind Spectrum Sensing for Cognitive Radios Using Path Correlations

Reza Soosahabi, Mahdi Orooji, Mort Naraghi-Pour (Louisiana State University, USA)

On End-to-End Performance of MIMO Multiuser Cognitive Radio Networks Yuli Yang (KAUST, Saudi Arabia)

Sonia Aissa (University of Quebec, INRS-EMT, Canada)

Successful Communications in a Cognitive Radio Network with Transmission Hyperspace

Onur Ozdemir, Andrew L. Drozd (Andro Computational Solutions, USA) Engin Masazade, Pramod Varshney (Syracuse University, USA)

On the Diversity Gains of User Scheduling in the Cognitive Radio Parallel Access Channel

Christos Masouros, Faheem Khan, Tharmalingam Ratnarajah, Mathini Sellathurai (Queen's University of Belfast, United Kingdom)

Thursday, 8 December 2011 • 8:00 – 10:00 Room: GRB 332 C

CSS07: Secure Routing I Chair: Qijun Gu (Texas State University, San Marcos, USA)

Jamming-Resistant Collaborative Broadcast in Wireless Networks, Part I: Single-hop Networks

Liang Xiao (Xiamen University / Rutgers University, China) Huaiyu Dai, Peng Ning (North Carolina State University, USA)

Jamming-Resistant Collaborative Broadcast in Wireless Networks, Part II: Multihop Networks

Liang Xiao (Xiamen University / Rutgers University, China) Huaiyu Dai, Peng Ning (North Carolina State University, USA)

Automatic Selection of Routers for Placing Early Filters of Malicious Traffic Chin-Tser Huang (University of South Carolina, USA)

Keesook J. Han, James Perretta (Air Force Research Laboratory, USA)

A New Bound on the Performance of the Bandwidth Puzzle Zhenghao Zhang (Florida State University, USA)

MIRA: Misleading Routing Attack in Mobile Ad Hoc Networks

Farah Kandah, Yashaswi Singh (North Dakota State University, USA) Weiyi Zhang (AT&T Labs Research, USA) Tie Wang (Yahoo! Inc, USA)

SATS: Secure Data-Forwarding Scheme for Delay-Tolerant Wireless Networks Mohamed Mahmoud, Mrinmoy Barua, Sherman Shen (University of Waterloo, Canada)

Thursday, 8 December 2011 • 8:00 – 10:00 Room: GRB 332 D CT07: LPDC Codes Chair: Shahram Yousefi (Queen's University, Canada)

On q-ary LDPC Code Design for a Low Error Floor

Andrea Marinoni, Pietro Savazzi (Università degli Studi di Pavia, Italy) Richard Wesel (University of California, Los Angeles, USA)

Adaptive Extended Min-Sum Algorithm for Nonbinary LDPC Decoding Xuan Guan, Yunsi Fei (University of Connecticut, USA)

Stability of Iterative Decoding of Multi-Edge Type Doubly-Generalized LDPC Codes over the BEC

Enrico Paolini (University of Bologna, Italy) Mark F. Flanagan (University College Dublin, Ireland) Marco Chiani (University of Bologna, Italy) Marc Fossorier (Etis Ensea, France)

Protograph-based Raptor-like LDPC Codes for Rate-compatibility with Short Blocklengths

Tsung-Yi Chen (University of California, Los Angeles, USA) Dariush Divsalar (Jet Propulsion Laboratory, USA) Jiadong Wang, Richard Wesel (University of California, Los Angeles, USA)

Threshold of Protograph-based LDPC Coded BICM for Rayleigh Fading Thuy Nguyen, Aria Nosratinia (University of Texas, Dallas, USA) Dariush Divsalar (Jet Propulsion Laboratory, USA)

Enhancing Binary Images of Non-Binary LDPC Codes

Aman Bhatia, Aravind R. Iyengar, Paul H. Siegel (University of California, San Diego, USA)

Thursday, 8 December 2011 • 8:00 – 10:00 Room: GRB 332 E CTO8: Interference Management Chair: Hamid Jafarkhani (University of California, Irvine, USA)

Optimizing Training and Feedback for Spatial Intercell Interference Cancellation Jun Zhang (Hong Kong University of Science & Technology, Hong Kong) Jeffrey Andrews (University of Texas, Austin, USA)

Khaled Ben Letaief (Hong Kong University of Science & Technology, Hong Kong)

Interference Alignment in Partially Connected Interfering Multiple-Access and Broadcast Channels Maxime Guillaud (Vienna University of Technology, Austria)

David Gesbert (Eurecom, France) Time Interference Alignment via Delay Offset for Long Delay Networks

Francisco Lazaro Blasco, Francesco Rossetto (German Aerospace Center, Germany) Gerhard Bauch (Universitaet der Bundeswehr Munich, Germany)

Performance of Fast Rate Adaption Techniques in Interference-limited Networks Abla Kammoun (Telecom ParisTech, France) Romain Couillet (Supélec / Ecole Centrale Paris, France)

Jamal Najim (CNRS, France) Mérouane Debbah (Supelec, France)

A Practical Coding Scheme for Interference Channel using Constrained Partial Group Decoder Chen Gong (Columbia University, USA)

Ali Tajer (Princeton University, USA) Xiaodong Wang (Columbia University, USA)

Achievable Rates of Two-Hop Interference Networks with Conferencing Relays Chuan Huang (Texas A&M University, USA) Meng Zeng (Marvell Semiconductor, USA) Shuguang Cui (Texas A&M University, USA)

Thursday, 8 December 2011 • 8:00 - 10:00 Room: GRB 342 A

NGN07: Congestion Control and Traffic Engineering Chair: Murat Yuksel (University of Nevada, Reno, USA)

A Control-theoretic Approach to the Design of Efficient Price for Congestion Control

Hao Wang (Chinese University of Hong Kong, Hong Kong) Jiezhi Chen (University of Florence, Italy) Chenda Liao (University of Florida, USA) Zuohua Tian (Shanghai Jiao Tong University, China)

Energizing Global Communications

Hierarchical Dynamic Traffic Engineering Considering the Upper Bounds of Link Utilizations

Yuichi Ohsita (Osaka University, Japan) Takashi Miyamura (NTT, Japan) Shin'ichi Arakawa (Osaka University, Japan) Kohei Shiomoto (NTT, Japan) Murata Masayuki (Osaka University, Japan)

Predictive Flow-Aware Networks Robert Wójcik, Jerzy Domżał, Andrzej Jajszczyk (AGH University of Science and Technology, Poland)

Traffic-Dependent Pricing for Delay-Sensitive Multimedia Networks Shaolei Ren (University of California, Los Angeles, USA) Fangwen Fu (Intel Corp., USA) Mihaela van der Schaar (University of California, Los Angeles, USA)

An Efficient Dropper Design for Implementing Capacity Sharing with Congestion Exposure

Faisal Mir, Dirk Kutscher, Marcus Brunner, Rolf Winter (NEC, Germany)

Queue-Length Proportional and Max-Min Fair Bandwidth Allocation for Best Effort Flows

Tosmate Cheocherngngarn, Jean Andrian, Zhenyu Yang, Deng Pan (Florida International University, USA)

Thursday, 8 December 2011 • 8:00 - 10:00 Room: GRB 342 B

ONS05: Optical Network Survivability Chair: Massimo Tornatore

(Politecnico di Milano / University of California, Davis, Italy)

Domain-Disjoint Routing Based on Topology Aggregation for Survivable Multi-Domain Optical Networks

Chengyi Gao (University of Texas, Dallas, USA) Mohammad Masud Hasan (Elizabeth City State University, USA) Jason P. Jue (University of Texas, Dallas, USA)

Maximizing Reliability in WDM Networks through Lightpath Routing Hyang-Won Lee, Kayi Lee, Eytan Modiano (MIT, USA)

Network Reliability under Random Circular Cuts Sebastian Neumayer, Eytan Modiano (MIT, USA)

Exploiting Excess Capacity for Survivable Traffic Grooming in Optical WDM Backbone Networks

Ferhat Dikbiyik (University of California, Davis, USA) Massimo Tornatore (Politecnico di Milano / University of California, Davis, Italy) Biswanath Mukherjee (University of California, Davis, USA)

Finding Complex Cycles through a Set of Nodes

Arun Somani, David Lastine, Suresh Sankaran (Iowa State University, USA)

Source-Specific Topology Aggregation for Survivable Multi-Domain Optical Networks

Chengyi Gao, Jason P. Jue (University of Texas, Dallas, USA)

Thursday, 8 December 2011 • 8:00 – 10:00 Room: GRB 342 C SAC12: Satellite Coding and Transmission Systems

Chair: Enzo Alberto Candreva (University of Bologna, Italy)

Joint Linear Precoding and Beamforming for the Forward Link of Multi-Beam Broadband Satellite Systems

Bertrand Devillers, Ana Isabel Perez (Universitat Polit'ecnica de Catalunya, Spain) Carlos Mosquera (Universidad de Vigo, Spain)

Joint Precoding with Flexible Power Constraints in Multibeam Satellite Systems Symeon Chatzinotas, Gan Zheng (University of Luxembourg, Luxemburg) Björn Ottersten (Royal Institute of Technology, Sweden)

Novel SISO Detection Algorithms for Nonlinear Satellite Channels Giulio Colavolpe, Amina Piemontese (University of Parma, Italy)

A Blind Phase Compensation Method for Direct Spectrum Division Transmission Jun-ichi Abe, Katsuya Nakahira (NTT Corporation, Japan)

(Advanced Telecommunications Research Institute International, Japan)

BICM-OFDM based Spectrally Efficient SDF Relaying for Satellite Broadcast Networks

Hui Luo, Yi Ma (University of Surrey, United Kingdom) Barry Evans (University of Surrey, Italy)

Hybrid Space-Ground Processing for High-Capacity Multi-beam Satellite Systems

Jesús Arnau-Yañez (University of Vigo, Spain) Michael Bergmann (Graz University of Technology, Austria) Enzo Alberto Candreva, Giovanni Emanuele Corazza (University of Bologna, Italy) Riccardo De Gaudenzi (ESA, Netherlands) Bertrand Devillers (CTTC, Spain) Wilfried Gappmair (Graz University of Technology, Austria) Francesco Lombardo (University of Bologna, Italy) Carlos Mosquera (Universidad de Vigo, Spain) Ana Pérez-Neira (CTTC, Spain) Ilaria Thibault, Alessandro Vanelli-Coralli (University of Bologna, Italy)

Thursday, 8 December 2011 • 8:00 – 10:00 Room: GRB 342 D SPC08• Communication Theory and An

SPC08: Communication Theory and Analysis Chair: Tiffany Jing Li (Lehigh University, USA)

A Theoretical Foundation of Network Navigation

Yuan Shen, Santiago Mazuelas, Moe Win (Massachusetts Institute of Technology, USA)

Performance of Alamouti Space-Time Coded OFDM with Carrier Frequency Offset

Luca Rugini, Paolo Banelli (University of Perugia, Italy) Himal A. Suraweera, Chau Yuen (Singapore University of Technology and Design, Singapore)

Computational Analysis of GNU Radio-Based Digital Communications Feng Ge, Jason Chiang, Yitzchak M. Gottlieb, Ritu Chadha (Telcordia, USA)

Information Theoretic Bounds for Tensor Rank Minimization over Finite Fields Amin Emad, Olgica Milenkovic (University of Illinois, USA)

Effects of Co-channel Interference on the Error Probability Performance of Multi-Hop Relaying Networks Salama Said Ikki (INRS, Canada) Sonia Aissa (University of Quebec, INRS-EMT, Canada)

Rate Distortion Performance Analysis of Compressive Sensing Junjie Chen, Qilian Liang (University of Texas, Arlington, USA)

Thursday, 8 December 2011 • 8:00 – 10:00 Room: GRB 342 E SPCO9: Optimization Chair: Liangzhong Ruan (HKUST, Hong Kong)

A Maximum Likelihood Time Delay Estimator Using Importance Sampling Ahmad Masmoudi, Faouzi Bellili, Sofiene Affes (INRS-EMT, Canada) Alex Stéphenne (Huawei / INRS-EMT, Canada)

Fast Local D.C. Programming for Optimal Power Allocation in Wireless Networks

Ha H. Kha, Hoang D. Tuan (University of Technology, Sydney, Australia) Ha Nguyen (University of Saskatchewan, Canada)

A Machine Learning Approach to Link Adaptation for SC-FDE System Zrinka Puljiz, Mijung Park, Robert Heath (University of Texas, Austin, USA)

On the Derivation of Optimal Partial Successive Interference Cancellation Francisco Lazaro Blasco, Francesco Rossetto (German Aerospace Center, Germany)

Optimal Asymmetric Resource Allocation for Multi-Relay Based LTE-Advanced Systems

Linhao Dong, Xu Zhu, Yi Huang (University of Liverpool, United Kingdom)

Closed-form Expressions of Optimal Short PR FMT Prototype Filters Didier Pinchon (Institute of Mathematics, France) Pierre Siohan (France Telecom, France)

Thursday, 8 December 2011 • 8:00 – 10:00 Room: GRB 342 F WC25: UWB Chair: Alberto Rabbachin (Massachusetts Institute of Technology, USA)

Pre-coding based Compressed Sensing UWB Communication System for Bursty Applications

Benzhou Jin, Sheng Zhang, Jian Pan, Xiaokang Lin (Tsinghua University, China)

A Hybrid Positioning Approach by UWB Radio Communication Systems for Non Line-of-Sight Conditions

Md Humayun Kabir, Ryuji Kohno (Yokohama National University, Japan)

Blind Integration Time Determination for UWB Transmitted Reference Receivers Nicolò Decarli, Andrea Giorgetti, Davide Dardari, Marco Chiani (University of Bologna, Italy)

Physical-Layer Network Coding Aided Two-Way Relay for Transmitted-Reference UWB Networks

Hui Gao (Beijing University of Posts and Telecommunications, China) Xin Su (Tsinghua University, China) Tiejun Lv (Beijing University of Posts and Telecommunications, China) Taotao Wang (Chinese University of Hong Kong, Hong Kong) Zicheng Wang (Beijing University of Posts and Telecommunications, China)

Performance Evaluation of UWB using Compressed Sensing in Multipath Channel Estimations

Shao-Yuan Chen, Wayne Stark (University of Michigan, USA)

Suppression of Strong Interference in UWB

Maurice L.A. Stassen (ST-Ericsson, Netherlands)

Thursday, 8 December 2011 • 8:00 – 10:00 Room: GRB 350 D/E/F

WC26: Modulation and Coding I Chair: Emad Alsusa (Manchester University, United Kingdom)

Adaptive Modulation for Multiuser Amplify-and-Forward Relay Networks with Feedback Delays

Karaputugala Gamacharige Madushan Thilina, Ekram Hossain (University of Manitoba, Canada)

LLR Approximation for Wireless Channels based on Taylor Series and its Application to BICM with LDPC Codes

Reza Asvadi (K. N. Toosi University of Technology, Iran) Amir Banihashemi (Carleton University, Canada) Mahmoud Ahmadian (K.N. Toosi University of Technology, Iran) Hamid Saeedi (Tarbiat Modarres University, Iran)

High-Throughput Low-Power LDPC Decoder and Code Design Thomas Henige, Shadi Abu-Surra, Eran Pisek (Samsung, USA)

Joint Precoding of High Efficiency MPSK Transmitters in MISO Channels Stella Achtenberg, Dan Raphaeli (Tel Aviv University, Israel)

Optimal and Approximate Methods for Detection of Uncoded Data with Carrier Phase Noise

Rajet Krishnan, Hani Mehrpouyan, Thomas Eriksson, Tommy Svensson (Chalmers University of Technology, Sweden)

Frequency Division Duplex Time Reversal

Dinh-Thuy Phan-Huy, Slim Ben Halima (Orange Labs, France) Maryline Hélard (INSA Rennes, France)

Thursday, 8 December 2011 • 8:00 – 10:00 Room: GRB 351 A/B WC27: Relay Performance Analysis

Chair: Norman C. Beaulieu (University of Álberta, Canada)

Analysis of Mutual Information Based Soft Forwarding Relays in AWGN Channels

Md Anisul Karim, Jinhong Yuan (University of New South Wales, Australia) Zhuo Chen (CSIRO ICT Centre, Australia) Jun Li (University of New South Wales, Australia)

Throughput and Diversity Gain of Buffer-Aided Relaying

Nikola Zlatanov, Robert Schober (University of British Columbia, Canada) Petar Popovski (Aalborg University, Denmark)

Performance Analysis of Two-Way Relay System with Antenna Correlation Nuwan S. Ferdinand, Nandana Rajatheva, Matti Latva-aho (University of Oulu, Finland)

Outage Performance for Two-Way Relay Channel with Co-Channel Interference

Liang Xuesong, Shi Jin (Southeast University, China) Wenjin Wang (University of Reading, United Kingdom) Xiqi Gao (Southest University, China) Kai Kit Wong (University College London, United Kingdom)

Capacity Theorem and Optimal Power Allocation for Frequency Division Multiple-Access Relay Channels

Junhua Liang, Xinbing Wang, WenJun Zhang (Shanghai Jiaotong University, China)

Delay-Throughput Trade-off with Opportunistic Relaying in Wireless Networks

Yufeng Wang (University of South Florida, USA) Shengshan Cui (Qualcomm, Corporate R&D, USA) Ravi Sankar (University of South Florida, USA) Salvatore Morgera (Florida Atlantic University, USA)

Thursday, 8 December 2011 • 8:00 – 10:00 Room: GRB 351 D/E

WC28: Cognitive Radio Networks Chair: Husheng Li (University of Tennessee, USA)

A Novel Wideband Spectrum Sensing System for Distributed Cognitive Radio Networks

Hongjian Sun (Princeton University, USA) Arumugam Nallanathan (King's College London, United Kingdom) Jing Jiang (University of Surrey, United Kingdom) David I. Laurenson (University of Edinburgh, United Kingdom) Chengxiang Wang (Heriot-Watt University, United Kingdom) H. Vincent Poor (Princeton University, USA)

A Joint Sensing-Time Adaption and Data Transmission Scheme in Cognitive Radio Networks

Wenshan Yin, Pinyi Ren, Chao Zhang (Xian Jiaotong University, China)

A Multi-level Design for Dirty-paper Coding with Applications to the Cognitive Radio Channel

Momin Uppal (Lahore University of Management Sciences, Pakistan) Guosen Yue, Yan Xin (NEC Laboratories, USA) Xiaodong Wang (Columbia University, USA) Zixiang Xiong (Texas A&M University, USA)

Distributed Power and Rate Allocation with Fairness for Cognitive Radios in Wireless Ad Hoc Networks

Songtao Guo, Yunqiang Zhang (Chongqing University, China) Yuanyuan Yang (Stony Brook University, USA)

A Spectrum Sensing Prototype for TV White Space in China

Lei Chen, Jing Qiu (Huawei Tech. Co., Ltd, China) Alexander Viessmann, Christian Kocks, Guido Bruck, Peter Jung (Universität Duisburg-Essen, Germany) Rose Qingyang Hu (Utah State University, USA)

CR Enabled TD-LTE within TV White Space: System Level Performance Analysis Junfeng Xiao, Feng Ye (Huawei Tech. Co. Ltd, China) Tingjian Tian (University of Electronic Science and Technology of China, China)

Tingjian Tian (University of Electronic Science and Technology of China, China) Rose Qingyang Hu (Utah State University, USA) Thursday, 8 December 2011 • 8:00 – 10:00 Room: GRB 362 A

WC41: Access Networks and Smart Grid Chair: Robert Caiming Qiu (Tennessee Tech University, USA)

State Aware Enhancement in DCCP for Multimedia Handovers Zawar Shah, Adeel Naeem Baig, Hira Samir, Imdad Ullah (National University of Sciences & Technology, Pakistan)

Optimization of Cosine Modulated Filter Bank for Narrowband RFI Yingsi Liang (Southern Methodist University, USA) Oren Eliezer (Xtendwave, USA) Dinesh Rajan (Southern Methodist University, USA)

Distributed Application of the Traffic Scheduling Technique for Smart Grid Advanced Metering Applications Using Multi-Gate Mesh Networks Hamid Gharavi, Xu Chong (National Institute of Standards and Technology, USA)

Credential-based Privacy-preserving Power Request Scheme for Smart Grid Network

Chin Long Cheung, Tat Wing Chim, Siu Ming Yiu, L. C. K. Hui, Victor O. K. Li (University of Hong Kong, China)

Thursday, 8 December 2011 • 8:00 - 10:00 Room: GRB 351 C/F

WN16: Vehicular & Mobile Ad Hoc Networks Chair: Xiaoyan Hong (University of Alabama, USA)

Modeling and Performance Analysis of Periodic Broadcast in Vehicular Ad Hoc Networks

Qiong Yang, Jun Zheng, Lianfeng Shen, Southeast University, China)

A Cooperative Content Distribution System for Vehicles Da Zhang, Chai Kiat Yeo (Nanyang Technological University, Singapore)

An Intersection Collision Warning System using Wi-Fi Smartphones in VANET Jie Yang, Jie Wang, Benyuan Liu (University of Massachusetts, USA)

On Piggybacking in Vehicular Networks

Sanjit Kaul, Roy Yates, Marco Gruteser (Rutgers University, USA)

Cross Layer Design in MIMO-enabled Communication-based Train Control Systems

Li Zhu, F. Richard Yu (Carleton University, Canada) Bing Ning (State Key Laboratory of Rail Traffic Control and Safety, China) Tao Tang (Beijing Jiaotong University, China)

PSR: Proactive Source Routing in Mobile Ad Hoc Networks

Zehua Wang, Cheng Li, Yuanzhu Chen (Memorial University of Newfoundland, Canada)

Thursday, 8 December 2011 • 8:00 – 10:00 Room: GRB 350 B WN17: Energy Efficiency Chair: Rose Qingyang Hu (Utah State University, USA)

Novel Pre-distortion of Power Amplifier with Proposed Fractional Order Memory Polynomial

Ai Bo (Beijing Jiaotong University, China) Tao Jiang (Huazhong University of Science and Technology, China) Zhang-dui Zhong (Beijing Jiaotong University, China) Bo Li (Xi'an University of Posts and Telecommunications, China)

Wakeup Receiver for Radio-On-Demand Wireless LANs

Suhua Tang (ATR Adaptive Communications Research Laboratories, Japan) Hiroyuki Yomo (Kansai University, Japan) Yoshihisa Kondo (ATR Adaptive Communications Research Laboratories, Japan) Sadao Obana (Advanced Telecommunication Research Institute International, Japan)

Energy-Efficient Client Relay Scheme for Machine-to-Machine Communication Sergey Andreev (Tampere University of Technology, Finland) Olga Galinina

(Tampere University of Technology / SPIIRAS, Saint Petersburg, Finland) Yevgeni Koucheryavy (Tampere University of Technology, Finland)

Efficient State Estimation with Energy Harvesting and Fairness Control using Stochastic Optimization

Luxmiram Vijayandran (Norwegian University of Science and Technology, Norway) Maite Brandt-Pearce (University of Virginia, USA) Kimmo Kansanen, Torbjorn Ekman (Norwegian University of Science and Technology, Norway)

The Maximized Relay Capacity and Optimal Data Transmission for Wireless Sensor Networks

Wei An (University of Nebraska-Lincoln, USA) Haiyan Luo (Cisco Systems / University of Nebraska-Lincoln, USA) Song Ci (University of Nebraska-Lincoln, USA) Jiajun Lin (East China University of Science and Technology, China)

Energy-Constrained Mobility Control for Epidemic Routing in Disruption Tolerant Networks

Yong Li, Li Su, Depeng Jin, Lieguang Zeng (Tsinghua University, China)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 322 A/B AHSN18: Localization I Chair: Ertan Öztürk (Zonguldak Karaelmas University, Turkey)

LMAT: Localization with a Mobile Anchor Node based on Triangulation in Wireless Sensor Networks

Jinfang Jiang, Guangjie Han, Huihui Xu (Hohai University, China) Lei Shu (Osaka University, Japan) Mohsen Guizani (WMU, USA)

Localization of Objects Using Cross-Correlation of Shadow Fading Noise and Copulas

Mohammed Basheer, Sarangapani Jagannathan (Missouri University of Science and Technology, USA)

Fault Tolerant Target Localization and Tracking in Wireless Sensor Networks Using Binary Data

Michalis P. Michaelides, Christos Laoudias, Christos Panayiotou (University of Cyprus, Cyprus)

Scaling Laws for Cooperative Node Localization in Non-Line-of-Sight Wireless Networks

Venkatesan Nallampatti Ekambaram, Kannan Ramchandran, Raja Sengupta (University of California, Berkeley, USA)

Congestion-aware Indoor Emergency Navigation Algorithm for Wireless Sensor Networks

Yongle Chen, Limin Sun (Chinese Academy of Sciences, China) Feng Wang (Simon Fraser University, Canada) Xinyun Zhou (Chinese Academy of Sciences, China)

Network Localization on Unit Disk Graphs

Phisan Kaewprapha, Tiffany Jing Li, Nattakan Puttarak (Lehigh University, USA)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 330 A/B

AHSN19: Wireless Communications II Chair: Melike Erol-Kantarci (University of Ottawa, Canada)

Performance of Multi Scale Direct Sequence Ultra-Wideband Signals for Nakagami-m Fading

Ertan Öztürk (Zonguldak Karaelmas University, Turkey) Hsiao-Hwa Chen (National Cheng Kung University, Taiwan) Mohsen Guizani (WMU, USA)

EEE Global Communications Conference

A Novel Dynamically Duty-Cyclable, Low Power UWB Impulse Radio based Event Communication

Rajeev Dokania (Intel Corporation, USA) Waclaw Godycki, Xiao Wang, Carlos Dorta-Quinones, Alyssa Apsel (Cornell University, USA)

A Diversity Combining Approach for MIMO Mobile FSO in MANETs

Hassan Moradi, Maryam Falahpour, Hazem Refai (Oklahoma University, USA) Peter LoPresti (Tulsa University, USA)

Low-Rate Underwater Wireless Sensor Network with RF Electromagnetic Communications

Xianhui Che (Swansea Metropolitan University, United Kingdom) A Channel Model for Wireless Underground Sensor Networks Using Lateral Waves Xin Dong, Mehmet Can Vuran (University of Nebraska-Lincoln, USA)

Decision Analysis of Dynamic Spectrum Access Rules

Juan Deaton (Virginia Polytechnic Institute and State University, USA) Christian Wernz (Virginia Tech, USA) Luiz A. DaSilva (Virginia Beltacheric Lections and Clean University (Trigin) College Dublic, Ju

(Virginia Polytechnic Institute and State University / Trinity College Dublin, Ireland)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 332 F CQRM10: Wireless Network Performance

Chair: Yu Cheng (Illinois Institute of Technology, USA)

Interference Analysis of Co-existing Wireless Body Area Networks Xuan Wang, Lin Cai (University of Victoria, Canada)

Multicast in Femtocell Networks: A Successive Interference Cancellation Approach

Donglin Hu, Shiwen Mao (Auburn University, USA)

Cost-constrained Incremental Network Planning in Multi-hop Wireless Networks Chisheng Zhang, Jiannong Cao, Jun Zhang, Jie Zhou (Hong Kong Polytechnic University, Hong Kong)

ReLoAD: Resilient Location Area Design for Internet-based Infrastructure Wireless Mesh Networks

Weiyi Zhao, Linda Jiang Xie (University of North Carolina, Charlotte, USA)

Mobility-Aware Streaming Rate Recommendation System Tarik Taleb (NEC Europe Ltd., Germany) Abdelhakim Hafid , Apollinaire Nadembega (University of Montreal, Canada)

A Link Quality Inference Model for IEEE 802.15.4 Low-Rate WPANs Guanbo Zheng, Dong Ha, Rong Zheng (University of Houston, USA) Christopher Schmitz (University of Illinois, Urbana-Champaign, USA) Xiaojing Yuan (University of Houston, USA)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 332 A CRN12: Security and Fairness Issues in Cognitive

Radio Networks Chair: Husheng Li (University of Tennessee, USA)

Joint Spectrum Sensing and Detection of Malicious Nodes via Belief Propagation

Federico Penna (Politecnico di Torino, Italy) Yifan Sun, Lara Dolecek, Danijela Čabrić (University of California, Los Angeles, USA)

Using Sybil Identities for Primary User Emulation and Byzantine Attacks in DSA Networks

Yi Tan. Kai Hong (Stevens Institute of Technology, USA) Shamik Sengupta (City University of New York, USA) Koduvayur P. Subbalakshmi (Stevens Institute of Technology, USA)

Detecting Primary User Emulation Attack in Cognitive Radio Networks

Di Pu, Yuan Shi, Andrei Ilyashenko, Alexander M. Wyglinski (Worcester Polytechnic Institute, USA)

A Distributed Cooperative Attack on the Multi-channel Spectrum Sensing: A Coalitional Game Study

Behzad Kasiri, Jun Cai, Attahiru S. Alfa (University of Manitoba, Canada) Weiwei Wang (Fujitsu Research & Development Center, China)

Human Society Inspired Dynamic Spectrum Access Networks: The Effect of Parochialism

Yi Tan (Stevens Institute of Technology, USA) Shamik Sengupta (City University of New York, USA) Koduvayur P. Subbalakshmi (Stevens Institute of Technology, USA)

Maximizing the Fair Allocation of Opportunistic Spectrum for CR Ad Hoc Networks

Vijay Sathyanarayana Rao, R Venkatesha Prasad (Delft University of Technology, Netherlands) Muralishankar R. (CMR Institute of Technology, India) Ignas Niemegeers (Delft University of Technology, Netherlands)

Thursday, 8 December 2011 • 13:30 - 15:30 Room: GRB 332 B

CRN13: Interference Modeling, Analysis and Mitigation in Cognitive Radio Networks Chair: Patrick Mitran (University of Waterloo, Canada)

Capacity Results for a Primary MAC in the Presence of a Cognitive Radio Anas Chaaban (TU Darmstadt, Germany) Aydin Sezgin (RUB & Digital Communication Systems, Germany)

Probabilistic Analysis of Mutual Interference in Cognitive Radio Communications

Md. Jahidur Rahman, Xianbin Wang (University of Western Ontario, Canada)

Dynamic Outage, Availability and Interference Models for Mobile Cognitive Radios

Timothy Brown (University of Colorado, USA) Naveen Mysore Balasubramanya (Broadcom Communication Technologies Pvt Ltd, India)

Impact of Primary User Interruption on Data Traffics in Cognitive Radio Networks: Phantom Jam on Highway Husheng Li (University of Tennessee, USA)

Evaluation of Interference Requirements in a Sensor Network Aided Cognitive Radio System

Pål R Grønsund, Ole Grøndalen (Telenor, Norway)

Sensing and Transmission in Probabilistically Interference Limited Cognitive Radio Systems

Shuangqing Wei (Louisiana State University, USA) Vasu Devan Chakravarthy (Air Force Research Laboratory, USA) Zhiqiang Wu (Wright State University, USA) Rajgopal Kannan (Louisiana State University, USA)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 332 C

CSS08: Secure Routing II Chair: Gill R. Tsouri (Rochester Institute of Technology, USA)

$\label{eq:stars} \mbox{ASTP: Agent-based Secure and Trustworthy Packet-Forwarding Protocol for eHealth} \\$

Mrinmoy Barua, Mohamed Mahmoud, Sherman Shen (University of Waterloo, Canada)

A Secure Service-Oriented Routing Algorithm for Heterogeneous Wireless Mesh Networks

Hector M Lugo-Cordero (UCF / UPR-Mayaguez, Puerto Rico) Ratan Guha (University of Central Florida, USA) Kejie Lu (University of Puerto Rico, Mayaguez, Puerto Rico)

Dynamic Secure Routing Game in Distributed Cognitive Radio Networks Quanyan Zhu (University of Illinois, Urbana-Champaign, USA) Ju Bin Song (Kyung Hee University, Korea) Tamer Başar (University of Illinois, Urbana-Champaign, USA)

EPF: An Event-aided Packet Forwarding Protocol for Privacy-preserving Mobile Healthcare Social Networks

Le Chen (University of Waterloo, Canada) Zhenfu Cao (Shanghai Jiao Tong University, China) Rongxing Lu, Xiaohui Liang, Sherman Shen (University of Waterloo, Canada)

Towards Effective En-route Filtering against Injected False Data in Wireless Sensor Networks

Jie Lin, Xinyu Yang (Xian Jiaotong University, China) Wei Yu (Towson University, USA) Xinwen Fu (University of Massachusetts, Lowell, USA)

Waypoint Routing

Alfredo Matos, Susana Sargento, Rui L. Aguiar (University of Aveiro, Portugal)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 332 D

CT09: Channel and Source Coding Chair: Gerhard Bauch (Universitaet der Bundeswehr Munich, Germany)

Discriminatory Lossy Source Coding: Side Information Privacy Ravi Tandon, Lalitha Sankar, H. Vincent Poor (Princeton University, USA)

Channel Coding for IDM: High-Rate Convolutional Code Concatenated with Irregular Repetition Code

Meelis Noemm, Najeeb Ul Hassan, Peter A. Hoeher (University of Kiel, Germany) Yi Wang (Huawei Technologies Co., Ltd, China)

LCD Codes and Iterative Decoding by Projections, a First Step towards an Intuitive Description of Iterative Decoding Jalal Etesami (Jacobs University Bremen, Germany)

Fangning Hu (Hangzhou Dianzi University, China) Werner Henkel (Jacobs University Bremen, Germany)

Rate-Compatible Turbo Codes Designed With Puncture-Constrained DRP Interleavers

Stewart Crozier, Ken A. Gracie (Communications Research Centre, Canada)

Error floor Analysis of LT Codes over the Additive White Gaussian Noise Channel

Iqbal Hussain, Ming Xiao, Lars K. Rasmussen (Royal Institute of Technology, Sweden)

The Design of Decomposed LT Codes

Rui Cao (University of Florida, USA) Liuqing Yang (Colorado State University, USA)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 332 E

CT10: Wireless Networks Chair: Geoffrey G. Messier (University of Calgary, Canada)

A Stochastic-Geometry Approach to Coverage in Cellular Networks with Multi-Cell Cooperation

Kaibin Huang (Yonsei University, Korea) Jeffrey Andrews (University of Texas, Austin, USA)

Outage Probability for Heterogeneous Cellular Networks with Biased Cell Association

Hanshin Jo (University of Texas, Austin, USA) Young Jin Sang (Yonsei University, Korea) Ping Xia, Jeffrey Andrews (University of Texas, Austin, USA)

Resource Allocation in 4G MIMO Cellular Uplink

Narayan Prasad, Honghai Zhang, Meilong Jiang, Guosen Yue, Sampath Rangarajan (NEC Labs America, USA)

Channel Model and Performance Analysis of QAM Multiple Antenna Systems at 60-GHz in the Presence of Human Activity

Tu V. Nguyen (University of California, San Diego / Post and Telecommunication Institute of Technology, Vietnam, USA)

Elias Masry, Laurence Milstein (University of California, San Diego, USA)

End-to-End Performance of Multihop Transmission Systems in a Rayleigh Fading Environment

Termpong Soithong (King Mongkut's University of Technology Thonburi, Thailand) Valentine Aalo (Florida Atlantic University, USA) George Efthymoglou (University of Piraeus, Greece) Chirasil Chayawan (King Mongkut's University of Technology Thonburi, Thailand)

Coverage in Two-tier Cellular Networks with Fractional Frequency Reuse

Thomas Novlan (University of Texas, Austin, USA) Radha Krishna Ganti (Indian Institute of Technology, Madras, India) Jeffrey Andrews (University of Texas, Austin, USA)

Thursday, 8 December 2011 • 13:30 - 15:30 Room: GRB 342 A

NGN08: Robust and Secure Networks Chair: Vasilis Friderikos (King's College London, United Kingdom)

Robust Network Design for Stochastic Traffic Demands Matthew Johnston, Hyang-Won Lee, Eytan Modiano (MIT, USA)

SafeZone: A Hierarchical Inter-Domain Authenticated Source Address Validation Solution

Jie Li, Jianping Wu, Ke Xu (Tsinghua University, China)

Intentional Attack and Fusion-based Defense Strategy in Complex Networks Pin-Yu Chen, Kwang-Cheng Chen (National Taiwan University, Taiwan)

A PLL based Approach to Building an Effective Covert Timing Channel Changlong Chen, Min Song (Old Dominion University, USA) George Hsieh, Chunsheng Xin (Norfolk State University, USA)

Parallel Name Lookup for Named Data Networking Yi Wang, Huichen Dai, Junchen Jiang, Keqiang He, Wei Meng, Bin Liu (Tsinghua University, China)

ERMAO: An Enhanced Intradomain Traffic Engineering Approach in LISP-capable Networks

Ke Li, Sheng Wang, Shizhong Xu, Xiong Wang (University of Electronic Science and Technology, China)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 342 B ONSO6: Optical Wireless

Chair: Ivan B. Djordjevic (University of Bristol, United Kingdom)

Energy-Efficient Free-Space Optical Communication by Coded OAM Modulation

Ivan B. Djordjevic (University of Arizona, USA) Jaime A. Anguita (University of the Andes, Chile) Bane Vasić (University of Arizona, USA)

Using Spatial Diversity to Improve the Confidentiality of Atmospheric Free Space Optical Communication

Andrew Puryear, Vincent Chan (Massachusetts Institute of Technology, USA)

Optimal Placement of FSO Links in Hybrid Wireless Optical Networks Farshad Ahdi, Suresh Subramaniam (The George Washington University, USA)

Relay Selection in Relay-Assisted Free Space Optical Systems Nestor Chatzidiamantis (Aristotle University Thessaloniki, Greece)

Diomidis S. Michalopoulos (University of British Columbia, Canada) Emmanouil E. Kriezis, George K. Karagiannidis (Aristotle University of Thessaloniki, Greece) Robert Schober (University of British Columbia, Canada)

Performance Analysis of a Medium-Transparent MAC protocol for 60GHz Radio-over-Fiber Networks

George Kalfas (Technical University of Catalonia, Spain) Nikos Pleros (Aristotle University of Thessaloniki, Greece) Kostas Tsagkaris (University of Piraeus, Greece) Luis Alonso (Universidad Politecnica de Catalunya, Spain) Christos Verikoukis (Telecommunications Technological Centre of Catalonia, Spain)

Spatial Modulation applied to Optical Wireless Communications in Indoor LOS Environments

Thilo Fath (EADS Deutschland GmbH / Innovation Works, Germany) Harald Haas (University of Edinburgh, United Kingdom) Marco Di Renzo (French National Center for Scientific Research, France) Raed Mesleh (University of Tabuk, Saudi Arabia)

TECHNICAL SYMPOSIA • THURSDAY

Thursday, 8 December 2011 • 13:30 - 15:30 Room: GRB 342 C

SAC13: Satellite and Space Communications Controls Chair: Takaya Yamazato (Nagoya University, Japan)

Performance Evaluation of Bandwidth Adaptation over DVB Satellite Channels Mario Marchese, Maurizio Mongelli (University of Genoa, Italy)

On the Stability of Contention Resolution Diversity Slotted ALOHA (CRDSA) Christian Kissling (German Aerospace Center, Germany)

Power Adaptation for DVB Multiple Access Channel with Raptor Code Mohammad Jabbari Hagh, M. Reza Soleymani (Concordia University, Canada)

Application Layer Joint Coding for Image Transmission over Deep Space Channels

Igor Bisio, Fabio Lavagetto, Mario Marchese (University of Genoa, Italy)

Development of Evolved Mobile Satellite Communications System; WIDESTAR II Kazuichi Yamamoto, Toshiyuki Kanekiyo, Ki Dai, Syuuichi Hayashi, Shinichi Sasaki, Kenji Kamogawa (NTT DOCOMO, Japan)

On the Impact of Sources Criticality Correlation in Satellite-based Tactical Communications

Laura Galluccio, Alessandro Leonardi, Giacomo Morabito, Sergio Palazzo, Corrado Rametta (University of Catania, Italy)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 342 D SPC10: Channel Coding Chair: Xiang-Gen Xia (University of Delaware, USA)

Noise Adaptive LDPC Decoding Using Expectation Propagation Shuang Wang, Lijuan Cui, Samuel Cheng (University of Oklahoma, USA)

Space-Time Coding Scheme for Time-Frequency Asynchronous Two-Way Relay Networks

Weile Zhang (Xian Jiaotong University, China) Feifei Gao (Tsinghua University, China) H. Chen (University of Tokyo, Japan) Qinye Yin (Xian Jiaotong University, China)

Joint Distributed Space-Time Block Coding with Distributed Turbo Product Code (DSTBC-DTPC)

Ésam Ali Obiedat (CommScope Inc., USA) Lei Cao (University of Mississippi, USA)

Compact Highly Utilized Reed Solomon Decoder Architecture for Optical Access Networks

Dusan Suvakovic, Adriaan J. van Wijngaarden, Man Fai Lau (Alcatel-Lucent, Bell Labs, USA)

Performance Analysis of Enhanced Verification-based Decoding for Packetbased LDPC Codes over Binary Symmetric Channel

Bin Zhu, Defeng Huang (University of Western Australia, Australia) Nordholm Sven (Curtin University of Technology, Australia) Yingjun Zhang (Chinese University of Hong Kong, Hong Kong)

An Optimal PIC Group Decoding for Layered Alamouti Code in Two-User Case Guoquan Li (Chongqing University / University of Delaware, China)

Xiang-Gen Xia (University of Delaware, USA) Yucheng Wu (Chongqing University, China)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 342 E

SPC11: Transmitter Processing Chair: Pierre Siohan (France Telecom, France)

Spectral Shaping for Adjacent Band Interference Suppression in Cognitive Radio Systems

Deepak Josh, Dimitrie C. Popescu (Old Dominion University, USA) Octavia A. Dobre (Memorial University of Newfoundland, Canada) Kareem E. Baddour (Communications Research Centre, Canada)

Linear Precoding Designs for Amplify-and-Forward Multiuser Two-Way Relay Systems

Rui Wang, Meixia Tao (Shanghai Jiao Tong University, China)

Interference Alignment: A One Sided Approach Hadi Ghauch (Carnegie-Mellon University, Greece)

Constantinos B. Papadias (Athens Information Technology, Greece)

Asymmetric Resource Allocation for Multi-Destination Relay Systems Nan Zhou (ZTE Deutschland GmbH, Germany) Xu Zhu, Yi Huang (University of Liverpool, United Kingdom)

Packet Scheduling for Priority Based Transmission in Energy Harvesting Sensors

Joseph Joseph C, Chandra R. Murthy (Indian Institute of Science, India)

A Joint Resource Allocation Scheme for Relay Aided Uplink Multi-User OFDMA System

Guftaar Ahmad Sardar Sidhu (Jacobs University Bremen, Germany) Feifei Gao (Tsinghua University, China) Lisheng Fan (Shantou University, China) Arumugam Nallanathan (King's College London, United Kingdom)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 342 F WC29: Transmission Technologies I Chair: Ross Murch (HKUST, Hong Kong)

Development of MMSE Macro-diversity Receiver with Delay Difference Correction Technique

Kazuhiko Mitsuyama, Tetsuomi Ikeda (Japan Broadcasting Corporation, Japan) Tomoaki Ohtsuki (Keio University, Japan)

A Novel Effective ICI Self-Cancellation Method

Miaowen Wen, Xiang Cheng (Peking University, China) Xing Wei (Beijing Institute of Technology, China) Ai Bo (Beijing Jiaotong University, China) Bingli Jiao (Peking University, China)

Partial LLL Reduction

Xiaohu Xie, Xiao-Wen Chang (McGill University, Canada) Mazen Al Borno (University of Toronto, Canada)

Outage and Diversity Analysis of Single Carrier Cyclic Prefix Systems with Frequency Domain Decision Feedback Equalizers

Hui-Ming Wang, Qinye Yin (Xian Jiaotong University, China)

Robust Secure Transmission in MISO Channels with Imperfect ECSI Jing Huang, Lee Swindlehurst (University of California, Irvine, USA)

Full-Duplex Wireless Communication using Transmitter Output based Echo Cancellation

Shenghong Li, Ross Murch (Hong Kong University of Science & Technology, Hong Kong)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 350 D/E/F

WC30: Modulation and Coding II Chair: Yabo Li (Zhejiang University, China)

On the Performance of ML Channel Estimation for OQPSK in Frequency Non-Selective Fading

Michael Rice (Brigham Young University, USA)

Novel Variable-Rate Convolutional Coding Scheme for Flat Fading Channels Yonas Debessu, Hsiao-Chun Wu (Louisiana State University, USA) Shih Yu Chang (National Tsing Hua University of Taiwan, Taiwan)

Serial Progressive Hierarchical Turbo Codes

Energizing Global Communications

Alina A. Florea (Cassisian / Telecom SudParis, France) Hang Nguyen (Institut Telecom / Telecom SudParis, France) Laurent Martinod (Cassidian / Security & Communication Solutions, France) Christophe Molko (Cassidian, France)

EXIT Functions for Parallel Concatenated Insertion Convolutional Codes Tobias Breddermann, Peter Vary (RWTH Aachen University, Germany)

TECHNICAL SYMPOSIA • THURSDAY

Deferred-Iteration Aided Low-Complexity Turbo Hybrid ARQ Relying on a Look-up Table

Hong Chen, Robert G. Maunder, Lajos Hanzo (University of Southampton, United Kingdom)

Finding Sparse Solutions for the Index Coding Problem Mohammad Asad Rehman Chaudhry, Zakia Asad, Alex Sprintson (Texas A&M University, USA)

Michael Langberg (Open University of Israel, Israel)

Thursday, 8 December 2011 • 13:30 - 15:30 Room: GRB 351 A/B

WC31: Cooperative Communications I Chair: Mohamed M. A. Moustafa (Akhbar El Yom Academy, Egypt)

Cooperative Multicasting Based on Superposition and Layered Coding Mohamed Abo Bakr El-Gendi (Center for Wireless Studies, Egypt)

Omar Nasr, Mohamed Khairy (Cairo University, Egypt)

Turbo Coded and Cooperative Network Coded Non-Coherent Soft-Decision Star-QAM Dispensing with Channel Estimation

Dandan Liang (University of Southampton, United Kingdom) Yena Song (University of Southampton, China) Soon Xin (Michael) Ng, Lajos Hanzo (University of Southampton, United Kingdom)

Distributed Incremental Cooperative Relaying with Quantized Feedback Kuang-Hao (Stanley) Liu (National Cheng Kung University, Taiwan)

Rank Recommendation-based Coordinated Scheduling for Interference Mitigation in Cellular Networks

Bruno Clerckx, Heunchul Lee, Young-Jun Hong, Gil Kim (Samsung, Korea)

Hybrid GNSS-ToA Cooperative Positioning based on Particle Filter Francesco Sottile (Istituto Superiore Mario Boella, Italy) Henk Wymeersch (Chalmers University of Technology, Sweden) Mauricio A. Caceres, Maurizio A. Spirito (Istituto Superiore Mario Boella, Italy)

Bounds and Tradeoffs for Cooperative DoA-Only Localization of Primary Users Federico Penna (Politecnico di Torino, Italy)

Danijela Čabrić (University of California, Los Angeles, USA)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 351 D/E WC32: Interference Alignment and Mitigation Chair: Wan Choi (KAIST, Korea)

Opportunistic Interference Alignment by Receiver Selection in a K-User 1×3 SIMO Interference Channel

Jung Hoon Lee, Wan Choi (KAIST, Korea)

Interference Mitigation for LTE Uplink through Iterative Blanking

Bahadir Celebi (University of South Florida, USA) Ismail Guvenc (DOCOMO Innovations, Inc., USA) Huseyin Arslan (University of South Florida, USA)

Interference Alignment under Training and Feedback Constraints Baile Xie, Yang Li, Hlaing Minn, Aria Nosratinia (University of Texas, Dallas, USA)

On Space-Frequency Code Design with Partial Interference Cancellation Group Decoding

Long Shi, Wei Zhang (University of New South Wales, Australia) Xiang-Gen Xia (University of Delaware, USA)

A Direct Sequence Design for Narrowband Interference Mitigation in Impulse Radio UWB Systems

Hua Shao, Norman C. Beaulieu (University of Alberta, Canada)

Interference Mitigation in IEEE 802.15.4 Networks

Jin-Seok Han, Hyung-Sin Kim, Jae-Seok Bang, Yong-Hwan Lee (Seoul National University, Korea)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 362 A

WC42: Wireless Communications and Transmissions Chair: Xiao Bei Liu (Nanyang Technological University, Singapore)

On The Functional Equation Arising in a Single User Selection Algorithm Toan To, Duc To, Xinheng Wang (Swansea University, United Kingdom)

Market Equilibria in Spectrum Trading with Multi-Regions and Multi-Channels Ping Xu, Sanjiv Kapoor, Xiang-Yang Li (Illinois Institute of Technology, USA)

Signal Space Representation of Chipless RFID Tag Frequency Signatures Prasanna Kalansuriya, Nemai Karmakar, Emanuele Viterbo (Monash University, Australia)

Joint Source-Channel Adaptation for Perceptually Optimized Scalable Video Transmission

Amin Abdel Khalek, Constantine Caramanis, Robert Heath (University of Texas, Austin, USA)

How to Lower Congestion with Cross-Layer MPR-PHY/MAC Design? Sanaz Barghi, Hamid Jafarkhani, Homayoun Yousefi'zadeh (University of California, Irvine, USA)

Distributed Coordination Area Formation in Coordinated Multi-Point Transmission

Shaomeng Qin, Chia-Hao Yu, Olav Tirkkonen (Aalto University, Finland) Mikko Alava (Helsinki University of Technology, Finland)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 351 C/F

WN18: Wireless Multimedia Services Chair: Alireza Babaei (Auburn University, USA)

Joint Video Delivery with Roadside Access Points for On-road Infotainment

Ke He (Beijing University of Posts and Telecommunications, China) Xu Li, Chunming Qiao (State University of New York, Buffalo, USA) Xue Chen (Beijing University of Posts and Telecommunications, China)

A Mobility-Aware and Quality-Driven Retransmission Limit Adaptation Scheme for Video Streaming over VANETs

Mahdi Asefi, Jon Mark, Sherman Shen (University of Waterloo, Canada)

On Associating SVC and DVB-T2 for Mobile Television Broadcast Adlen Ksentini, Yassine Hadjadj-Aoul (University of Rennes 1, France)

Segmented Network Coding for Stream-like Applications in Delay Tolerant Networks Deze Zeng

(University of Aizu / Huazhong University of Science and Technology, Japan) Song Guo (University of Aizu, Japan) Hai Jin (Huazhong University of Science and Technology, China) Victor CM Leung (University of British Columbia, Canada)

Secure Content Centric Mobile Network

Mooi Choo Chuah, Xiong Xiong (Lehigh University, USA)

Collaborative Caching for Video Streaming among Selfish Wireless Service Providers

Jie Dai, Bo Li (Hong Kong University of Science & Technology, Hong Kong) Fangming Liu (Huazhong University of Science and Technology, China) Baochun Li (University of Toronto, Canada) Jiangchuan Liu (Simon Fraser University, Canada)

Thursday, 8 December 2011 • 13:30 – 15:30 Room: GRB 350 B

WN19: Game Theory & Congestion Control Chair: Husheng Li (University of Tennessee, USA)

A Distributed Relay Selection Algorithm Using Game on Real-Time Testbed Zhengyang Qu, Shen Gu, Guannan Yang, Xinbing Wang, Xiaohua Tian (Shanghai Jiaotong University, China) Xiaoying Gan (Shanghai Jiao Tong University / University of California, San Diego, China)

Jointly Rate and Power Control for Elastic and Inelastic Traffic in Multihop Wireless Networks

Phuong L. Vo, Nguyen H. Tran, Choong Seon Hong (Kyung Hee University, Korea)

Price War in Wireless Access Networks: A Regulation for Convergence Seung Min Yu, Seong-Lyun Kim (Yonsei University, Korea)

Joint Congestion Control and Wireless-Link Scheduling for Mobile TCP Applications

Xin Wang, Zhaoquan Li, Na Gao (Florida Atlantic University, USA)

Robust Equilibria in Additively Coupled Communication Games Saeedeh Parsaeefard, Ahmad R. Sharafat (Tarbiat Modares University, Iran) Mihaela van der Schaar (University of California, Los Angeles, USA)

Payoff Allocation of Service Coalition in Wireless Mesh Network: A Cooperative Game Perspective

Xiao Lu, Ping Wang, Dusit Niyato (Nanyang Technological University, Singapore)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 322 A/B AHSN20: Localization II Chair: Jian Tang (Syracuse University, USA)

Novel Navigation Algorithm for Wireless Sensor Networks without Information of Locations

Peng Guo, Tao Jiang (Huazhong University of Science and Technology, China) Youwen Yi, Qian Zhang (Hong Kong University of Science & Technology, Hong Kong)

Kui Zhang (University of Twente, Netherlands)

A Mobile Beacon based Localization Approach for Wireless Sensor Network Applications

Yifeng Zhou, Louise Lamont (Communications Research Centre Canada, Canada)

Enhancing Mobile Social Network Privacy Wei Chang, Jie Wu,

A Protocol for Sink Location Privacy Protection in Wireless Sensor Networks Bidi Ying, Dimitrios Makrakis, Hussein T. Mouftah (University of Ottawa, Canada)

Source Localization on Two-Dimensional Grid Kui Liu, Yang Cheng, Pan Li (Mississippi State University, USA)

Tarunraj Singh (University at Buffalo, USA)

Constrained Localization: Mapping Wireless Sensor Nodes in Predefined Positions

Andrea Bardella (University of Padova, Italy) Nicola Bui (University of Padova / Patavina Technologies, Italy) Andrea Zanella, Michele Zorzi (University of Padova, Italy)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 330 A/B AHSN21: Wireless Communications III

Chair: Mianxiong Dong (University of Waterloo, Canada)

Toward a Network Coding Constellation for Two-Way Relay Node Channels Eugene David Ngangue Ndih, Soumaya Cherkaoui (Université de Sherbrooke, Canada)

Progressive Coding and Iterative Source-Channel Decoding in Wireless Data Gathering Networks

Congduan Li (Drexel University, USA) Paul Flikkema, Sheryl Howard (Northern Arizona University, USA)

Distributed Opportunistic Scheduling for Cooperative Networking

Xiaowen Gong, Chandrashekhar Thejaswi PS, Junshan Zhang (Arizona State University, USA) H. Vincent Poor (Princeton University, USA)

Efficiently Maintaining Distributed Model-Based Views on Real-Time Data Streams

Alexandru Arion, Hoyoung Jeung, Karl Aberer (EPFL, Switzerland)

Global Correlated Data Gathering in Wireless Sensor Networks with Compressive Sensing and Randomized Gossiping Yifeng Li, Junni Zou (Shanghai University, China)

Hongkai Xiong (Shanghai Jiao Tong University, China)

Optimal Control of Epidemic Information Dissemination in Mobile Ad Hoc Networks

Pin-Yu Chen, Kwang-Cheng Chen (National Taiwan University, Taiwan)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 332 A

CRN14: Design and Analysis of Multihop Cognitive Radio Networks

Chair: Aydin Sezgin (RUB / Digital Communication Systems, Germany)

Joint Channel Selection and Opportunistic Forwarding in Multi-hop Cognitive Radio Networks

Liu Yongkang (University of Waterloo, Canada) Lin X. Cai (Princeton University, USA) Sherman Shen (University of Waterloo, Canada)

A QoS-based Broadcast Protocol for Multi-hop Cognitive Radio Ad Hoc Networks Yi Song, Linda Jiang Xie (University of North Carolina, Charlotte, USA)

A Novel Routing Algorithm in Cognitive Radio Ad Hoc Networks Jun Li, Yifeng Zhou, Louise Lamont (Communications Research Centre Canada, Canada)

Francois Gagnon (Ecole de Technologie Superieure, Canada)

CONI: Credit-based Overlay and Interweave Dynamic Spectrum Access Protocol for Cognitive Multi-hop Wireless Networks Liangping Ma (Interdigital Communications, USA)

Chien-Chung Shen (University of Delaware, USA) Chunsheng Xin (Norfolk State University, USA)

Protecting Cognitive Radio Networks against Primary Users: A Backup Path Approach

Rukun Mao, Husheng Li (University of Tennessee, USA)

Percolation-based Connectivity of Multiple Cooperative Cognitive Radio Ad Hoc Networks

Weng Chon Ao, Kwang-Cheng Chen (National Taiwan University, Taiwan)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 332 B CRN15: Dynamic Spectrum Access in TV Bands and

Other Practical Systems Chair: Yi Gai (University of Southern California, USA)

Near vs Far Field: Interference Aggregation in TV Whitespaces Kristen Woyach, Pulkit Grover, Anant Sahai (University of California, Berkeley, USA)

Broadband Wireless Delivery Using an Inside-Out TV White Space Network Architecture

Santosh Kawade British Telecom, United Kingdom) Maziar Nekovee (BTexact Technologies, British Telecom, United Kingdom)

Current Trends in Regulation of Secondary Access to TV White Spaces Using Cognitive Radio

Maziar Nekovee (BTexact Technologies, British Telecom, United Kingdom)

Semi-blind Channel Monitoring Mechanisms for Post-switchover Wireless Microphones

João Paulo C. L. Miranda (Leibniz University of Hannover, Germany) Jacek Kibiłda (Wrocławskie Centrum Badan EIT Plus, Poland) Luiz Da Silva (Trinity College, Ireland)

Energizing Global Communications

Cognitive Call Admission Control for VoIP over 802.11 using Bayesian Networks Giorgio Quer (University of California San Diego / University of Padova, USA) Nicola Baldo (Centre Tecnològic de Telecomunicacions de Catalunya, Spain) Michele Zorzi (University of Padova, Italy) A Novel Approach for Co-Channel Interference Mitigation in Femtocell Networks Khalim Amjad Meerja, Pin-Han Ho (University of Waterloo, Canada) Bin Wu (University of Electronic Science and Technology of China, China)

Thursday, 8 December 2011 • 16:00 - 18:00 Room: GRB 332 C

CSWS07: Multimedia Communications Technologies Chair: Yiqing Zhou (Chinese Academy of Science, China)

Time-Frequency Training OFDM with High Spectral Efficiency and Improved Performance over Fast Fading Channels

Linglong Dai, Zhaocheng Wang, Jintao Wang, Jun Wang (Tsinghua University, Beijing, China)

Coding to Mitigate Video Disruption during Wireless Access Switching Utsaw Kumar (University of Notre Dame, USA)

Sachin Kumar Agarwal (Deutsche Telekom AG, Laboratories, Germany)

Synthetic Generation of Radio Maps for Device-Free Passive Localization Ahmed Eleryan (Alexandria University, Egypt)

Moustafa Youssef (Egypt-Japan University of Science and Technology, Egypt) Mohamed Elsabagh (Nile University, Egypt)

RSS Ranging Based Wi-Fi Localization for Unknown Path Loss Exponent Qing Zhang, Chuan Heng Foh (Nanyang Technological University, Singapore) Boon-Chong Seet (Auckland University of Technology, New Zealand) Alvis Fong (Nanyang Technological University, Singapore)

Nearly Lossless Compression of Arbitrary Images Prachee Sharma (Broadata Communications Inc., USA)

Experimental Evaluation of the Impact of Packet Capturing Tools for Web Services Chao-Chih Chen (University of California, Davis, USA) Yung Ryn (Elisha) Choe (Sandia National Laboratories, USA) Chen-Nee Chuah, Prasant Mohapatra (University of California, Davis, USA)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 332 D CT11: Performance Analysis Chair: Norman C. Beaulieu (University of Alberta, Canada)

Error Exponent Analysis of Energy-Based Bayesian Spectrum Sensing Under Fading Channels

Sanjeev G., Chandra R. Murthy, Vinod Sharma (Indian Institute of Science, India)

Throughput Limits and Multiuser Diversity of Multiantenna Spectrum Sharing Networks

Yang Li, Aria Nosratinia (University of Texas, Dallas, USA)

Effects of Channel State Information Uncertainty on the Performance of Stochastic Signaling

Cagri Goken, Sinan Gezici, Orhan Arikan (Bilkent University, Turkey)

SC-FDMA Performance in Presence of Oscillator Impairments: EVM and Subcarrier Mapping Impact

Ahmad Abdulrahman Gomaa, Naofal Al-Dhahir (University of Texas, Dallas, USA)

Bit Error Rate of Noncoherent MFSK with S+N Selection Combining in Two Wave with Diffuse Power Fading

Sasan Haghani (University of the District of Columbia, USA)

Exponential-type Bounds on the First-Order Marcum Q-Function Hua Fu, Pooi-Yuen Kam (National University of Singapore, Singapore)

Thursday, 8 December 2011 • 16:00 - 18:00 Room: GRB 332 E

CT12: Cooperative Communications II Chair: Lingjia Liu (University of Kansas, USA)

Stable Sleeping in DSL Broadband Access: Feasibility and Tradeoffs Ioannis Kamitsos (Princeton University, USA)

Paschalis Tsiaflakis (Université Catholique de Louvain, Belgium) Sangtae Ha, Mung Chiang (Princeton University, USA)

Cooperative Multicast Strategies under Heterogeneous Link Loss Rates Brooke Shrader, Thomas C. Royster (MIT Lincoln Laboratory, USA)

ALOHA Performs Delay-Optimum Power Control Xinchen Zhang, Martin Haenggi (University of Notre Dame, USA)

Speeding Multicast by Acknowledgment Reduction Technique (SMART) Arman Rezaee, Linda Zeger, Muriel Médard (MIT, USA)

Multiple Unicast Capacity of 2-Source 2-Sink Networks Chenwei Wang, Tiangao Gou, Syed Ali Jafar (University of California, Irvine, USA)

Constant-Power Joint-Waterfilling for Coordinated Transmission Bing Luo, Qimei Cui, Xiaofeng Tao

(Beijing University of Posts and Telecommunications, China)

Thursday, 8 December 2011 • 16:00 - 18:00 Room: GRB 332 F

GQRM11: Internet Performance Chair: Stefano Giordano (University of Pisa, Italy)

Consideration of Service Time in Placing Clients of Web-Based Services Wei Zhang, Craig Wills (Worcester Polytechnic Institute, USA)

Control Theoretic Analysis of eXplicit Control Protocol with Short-Lived Traffic Hairui Zhou (Shanghai Jiaotong University, China)

Hairui Zhou (Shanghai Jiaotong University, China) Chengchen Hu (Xian Jiaotong University, China) Jian Li (Shanghai Jiaotong University, China) Lina He (Tongji University, China) Fei Hu (Shanghai Jiaotong University, China)

Scaling Regular Expression Matching Performance in Parallel Systems through Sampling Techniques

Domenico Ficara (Cisco Systems, Switzerland) Gianni Antichi (University of Pisa, Italy) Nicola Bonelli (CNIT, Italy) Andrea Di Pietro, Stefano Giordano, Gregorio Procissi (University of Pisa, Italy) Fabio Vitucci (Wireless Integrated Network, Italy)

A Model to Seize the Instantaneous Performance of P2P Streaming Platforms: Simulative and Experimental Validation

Maria Luisa Merani, Daniela Saladino, Gian Paolo Leonardi (University of Modena and Reggio Emilia, Italy)

Bandwidth Self-Management in DS-TE Networks

Luigi Atzori, Tatiana Onali, Giovanni Branca (University of Cagliari, Italy)

High-Performance Traffic Workload Architecture for Testing DPI Systems

Alysson Feitoza Santos, Stenio Fernandes (Federal University of Pernambuco, Brazil) Rafael T. Antonello (Federal University of Pernambuco / Brazilian Federal Institute of Education, Brazil) Petrônio Lopes, Jr., Djamel Hadj Sadok (Federal University of Pernambuco, Brazil) Géza Szabó (Ericsson Research, Hungary)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 342 A

NGN09: Mobile Networks

EEE Global Communications Conference

Chair: Tommy Svensson (Chalmers University of Technology, Sweden)

Mobile WDM Backhaul Access Networks with Physical Inter-Base-Station Links

for Coordinated Multipoint Transmission/Reception Systems Changsoon Choi, Qing Wei, Thorsten Biermann, Luca Scalia (DOCOMO Euro-Labs, Germany)

On-the-fly Packet Error Recovery in a Cooperative Cluster of Mobile Devices Péter Vingelmann

(Budapest University of Technology and Economics / Aalborg University, Hungary) Morten V. Pedersen, Frank H.P. Fitzek, Janus Heide (Aalborg University, Denmark)

Secure Resolution of End-Host Identifiers for Mobile Clients

Samu Varjonen (Helsinki Institute for Information Technology, Finland) Tobias Heer (RWTH Aachen University, Germany) Kenneth Rimey, Andrei Gurtov (Helsinki Institute for Information Technology, Finland)

TECHNICAL SYMPOSIA • THURSDAY

Intermittent Connected Vehicle-to-Vehicle Networks: Detection and Analysis Yujin Li, Ming Zhao, Wenye Wang (North Carolina State University, USA)

SCPS: A Social-aware Distributed Cyber-Physical Human-centric Search Engine Jianwei Liu, Haiying Shen, Ze Li (Clemson University, USA) Shoshana Loeb, Stanley Moyer (Telcordia Technologies, USA)

Performance Analysis of Vertical Handover Algorithm based on Expected WLAN Lifetime

Tariq M Ali, Mohammad Saquib (University of Texas, Dallas, USA) Mohammad Mollah (Georgia Southern University, USA)

Thursday, 8 December 2011 • 16:00 - 18:00 Room: GRB 342 B

ONS07: Optical Communications Chair: Mohan Gurusamy (National University of Singapore, Singapore)

Compression of Pure and Mixed States in Quantum Detection

Gianfranco Cariolaro, Roberto Corvaja, Gianfranco Pierobon (University of Padova, Italy)

Adaptive 10 Gbit/s Mobile Optical Wireless Systems Employing Beam Delay, Angle and Power Adaptation with Imaging Receivers

Mohammed Alresheedi, Jaafar Elmirghani (University of Leeds, United Kingdom)

Performance Evaluation of Multiple-Bit Delay Detection with Majority Vote Decision Rule in Optical DPSK Systems Vahid R. Arbab (University of Southern California, USA) Mohammad Rad (Université Laval, Canada) Murat Uysal (Ozyegin University, Turkey) Poorya Saghari (Avago Technologies, USA)

Density and Guard Band in Migration Scenarios to Coherent Ultra-Dense WDM Jacklyn D. Reis, Darlene Neves (Instituto de Telecomunicações / Universidade de Aveiro, Portugal) Antonio Teixeira (University of Aveiro / Nokia Siemens Networks, Portugal)

Strictly Bandlimited ISI-Free Transmission over Intensity-Modulated Channels Mehrnaz Tavan (Rutgers, USA)

Erik Agrell, Johnny Karout (Chalmers University of Technology, Sweden)

Non-Concatenated FEC Codes for Ultra-High Speed Optical Transport Networks Damián Morero, Alejandro Castrillón (National University of Cordoba, Argentina) Facundo Ramos / Teodoro Ariel Goette (Clariphy Argentina, Argentina) Oscar E. Agazzi (Clariphy Communications, USA) Mario R. Hueda (National University of Cordoba / CONICET, Argentina)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 342 C SAC14: Satellite and Space Networking

Chair: Giovanni Giambene (University of Siena, Italy)

A Mesh Network over a Semi-Transparent Satellite

Rosalba Suffritti (Mavigex, Italy) Enzo Alberto Candreva, Francesco Lombardo, Stefano Rosati, Alessandro Vanelli-Coralli, Giovanni Emanuele Corazza (University of Bologna, Italy) Gennaro Gallinaro (Space Engineering S.p.A., Italy)

Analysis of Proximity-1 Space Link Interleaved Time Synchronization Protocol Simon Woo (University of Southern California, USA)

Development of Mobile Satellite Access Scheme and Base Station Equipment for the WIDESTAR II

Shinichi Sasaki, Masahiro Inoue, Toshiyuki Kanekiyo, Kenji Kamogawa, Kazuichi Yamamoto (NTT DOCOMO, Japan)

Enhancing Contact Graph Routing for Delay Tolerant Space Networking

John Segui (JPL, USA) Esther Jennings (NASA/JPL, USA) Scott C. Burleigh (Jet Propulsion Laboratory / California Institute of Technology, USA) Broadband IP Transmission over $\textsc{SPACEWAY}_{\mbox{\tiny \ensuremath{\$}}}$ Satellite with On-Board Processing and Switching

Russell J. Fang (Hughes Network Systems, USA)

Cross-layer Schemes for TCP Performance Improvement in HetNets for High-Speed Trains

Giovanni Giambene, Silvia Marchi (University of Siena, Italy) Sastri Kota (Consultant, USA)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 342 D SPC12: OFDM and Multi-carrier Systems Chair: Christos Masouros (Queen's University Belfast, United Kingdom)

FBMC/OQAM Modulators with Half Complexity Youssef Dandach (France Telecom / Orange Labs, France) Pierre Siohan (France Telecom, France)

Trade off between Frequency Diversity and Robustness to Carrier Frequency Offset in Uplink OFDMA System Babar Aziz, Inbar Fijalkow, Myriam Ariaudo (ETIS, ENSEA, Université Cergy-Pontoise, CNRS, France)

Effective OFDMA based Signaling in Ad Hoc Wireless Networks Shailesh Patil (Qualcomm, USA) Anand Muralidhar (Bell Labs, Alcatel-Lucent, India) Xinzhou Wu, Junyi Li (Qualcomm, USA)

Non-Parametric Impulsive Noise Mitigation in OFDM Systems Using Sparse Bayesian Learning

Jing Lin, Marcel Nassar, Brian L. Evans (University of Texas, Austin, USA)

Compressive-Sensing-Based Approach for NBI Cancellation in MIMO-OFDM Ahmad Abdulrahman Gomaa, Naofal Al-Dhahir (University of Texas, Dallas, USA)

Sphere Decoding for Unique Word OFDM Alexander Onic, Mario Huemer (Klagenfurt University, Austria)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 342 E

WC33: Antenna Design Chair: Huiling Zhu (University of Kent, United Kingdom)

Antenna Array Design for Multi-Gbps mmWave Mobile Broadband Communication

Sridhar Rajagopal, Shadi Abu-Surra, Zhouyue Pi, Farooq Khan (Samsung Telecommunications America, USA)

Spectral Efficiency Analysis of Distributed Antenna System for In-Building Mobile Communication Temitope Alade, Huiling Zhu, Hassan Osman (University of Kent, United Kingdom)

Spectrum Efficiency in Distributed Antenna Systems with Frequency Reuse

Huiling Zhu (University of Kent, United Kingdom) **Coordinated User Scheduling for Multi-Cell Distributed Antenna Systems** Yanmin Wang, Wei Feng, Yunzhou Li, Shidong Zhou, Jing Wang (Tsinghua University, China)

Resource Allocation for Multicast Services in Distributed Antenna Systems with QoS Guarantees

Lin Tian, Yiqing Zhou, Yucheng Zhang, Gang Sun, Jinglin Shi (Chinese Academy of Sciences, China)

Energizing Global Communications

Optimal Feedback Interval for Temporally-Correlated Multiantenna Channel Wiroonsak Santipach, Kritsada Mamat (Kasetsart University, Thailand) Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 342 F

WC34: Transmission Technologies II Chair: Lie-Liang Yang (University of Southampton, United Kingdom)

Cross-layer Design of Random On-Off Accumulative Transmission with Iterative Detections

Jingxian Wu (University of Arkansas, USA) Geoffrey Li (Georgia Tech, USA)

Low Complexity Feature-based Modulation Classifier and its Non-Asymptotic Analysis

Eric Rebeiz, Danijela Čabrić (University of California Los Angeles, USA)

Investigation on Scrambler Reconstruction with Minimum A Priori Knowledge Xiao Bei Liu, Soo Ngee Koh (Nanyang Technological University, Singapore) Xin Wen Wu (Griffith University, Australia) Chee Cheon Chui (Nanyang Technological University, Singapore)

The Transmission Strategy for Energy Harvesting Wireless Transmitters Kun Zheng, Husheng Li (University of Tennessee, USA)

Uplink Geographic Transmission Scheme for Mesh Networks Byonghyok Choi, Tan Wong, John M. Shea (University of Florida, USA)

Multihop Diversity - A Precious Source of Fading Mitigation in Multihop Wireless Networks

Lie-Liang Yang, Chen Dong, Lajos Hanzo (University of Southampton, United Kingdom)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 350 D/E/F WC35: Modulation and Coding III

Chair: Ha Nguyen (University of Saskatchewan, Canada)

On the Performance of Space Shift Keying (SSK) Modulation with Imperfect Channel Knowledge

Marco Di Renzo (French National Center for Scientific Research, France) Dario De Leonardis, Fabio Graziosi (University of l'Aquila, Italy) Harald Haas (University of Edinburgh, United Kingdom)

Field Extension Code based Dispersion Matrices for Coherently Detected Space-Time Shift Keying

Rakshith Mysore Rajashekar, Kvs Hari (Indian Institute of Science, India) Lajos Hanzo (University of Southampton, United Kingdom)

Broadcast Transmission Capacity of Heterogeneous Wireless Ad Hoc Networks with Secrecy Outage Constraints

Weng Chon Ao, Kwang-Cheng Chen (National Taiwan University, Taiwan)

Data Mixing at the Source, Relay and in the Air in Multiple-access Relay Networks

Young Jin Chun (Sungkyunkwan University, Korea) Sang Wu Kim (Iowa State University, USA)

A Hardware-Efficient VLSI Architecture for Hybrid Sphere-MCMC Detection Chia-Hsiang Yang (University of California, Los Angeles, Taiwan) Chia-Hsiang Yang, Dejan Markovic (University of California, Los Angeles, USA)

Column Reordering for Box-Constrained Integer Least Squares Problems Stephen Breen, Xiao-Wen Chang (McGill University, Canada)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 351 A/B WC36: Cooperative Communications II Chair: Sami Muhaidat (Simon Fraser University, Canada)

QoS Oriented Cross-Layer Design for Improving Multimedia Transmissions over Cooperative Relaying Networks

Chen Dan, Hong Ji (Beijing University of Posts and Telecommunications, China)

Round-Robin Relaying with Diversity in Cooperative Communications Zhang Zhang (Beijing University of Posts and Telecommunications, China) Xin Su (Tsinghua University, China) Tiejun Lv (Beijing University of Posts and Telecommunications, China)

Sequential Bargaining in Cooperative Spectrum Sharing: Incomplete Information with Reputation Effect

Yang Yan (Tsinghua Üniversity, China) Jianwei Huang (Chinese University of Hong Kong, Hong Kong) Xiaofeng Zhong, Ming Zhao, Jing Wang (Tsinghua University, China)

Auction-Based Power Allocation for Multi-Source Multi-Relay Cooperative Wireless Networks

Mohammed W. Baidas, Allen B. MacKenzie (Virginia Tech, USA)

Auction-Based Optimal Power Allocation in Multiuser Cooperative Networks Yuan Liu, Meixia Tao (Shanghai Jiaotong University, China) Jianwei Huang (Chinese University of Hong Kong, Hong Kong)

The Optimal Power Assignment for Cooperative Hybrid-ARQ Relaying Protocol Sangkook Lee, Weifeng Su, Dimitris A. Pados

(State University of New York, Buffalo, USA) John Matyjas (Air Force Research Laboratory/RIGF, USA)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 351 D/E WC37: Scheduling Chair: Dusit Niyato (Nanyang Technological University, Singapore)

Minimum Delay Broadcast Scheduling for Multi-rate Wireless Networks with Directional Antennas

Yanan Chang (City University of Hong Kong, Hong Kong) Qin Liu (Wuhan University, China) Bo Zhang, Xiaohua Jia, Liming Xie (City University of Hong Kong, China)

Joint Scheduling and Dynamic Clustering in Downlink Cellular Networks Jie Gong, Sheng Zhou, Zhisheng Niu (Tsinghua University, China) Geng Lu, Meng Zheng (Hitach (China) Research & Development Corporation, China)

Opportunistic Multicast Scheduling with Multiple Multicast Groups

Tze-Ping Low (University of Southern California, USA) Yao-Win Peter Hong (National Tsing Hua University, Taiwan) C.-C. Jay Kuo (University of Southern California, USA)

The Impact of Scheduling on Edge Windowing Alphan Sahin, Huseyin Arslan (University of South Florida, USA)

QoS Guaranteed Call Admission Control with Opportunistic Scheduling

Hao Wang (Southeast University / Uppsala University, China) Lianghui Ding (Signal and Systems / Uppsala University, Sweden) Zhiwen Pan, Nan Liu, Xiaohu You (Southeast University, China)

Evolutionarily Stable Spectrum Access in a Many-Users Regime

Xu Chen, Jianwei Huang (Chinese University of Hong Kong, Hong Kong)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 351 C/F

WN20: Wireless Mesh Network Design Chair: Zhu Han (University of Houston, USA)

Performance Analysis of Location Management Strategies in Internet-based Wireless Mesh Networks

Weiyi Zhao,Linda Jiang Xie (University of North Carolina, Charlotte, USA)

Computing the Optimal Capacity of Multi-Radio Multi-Channel Wireless Network over Partially Overlapping Channels Hongkun Li, Aavushi Srivastava, Yu Cheng (Illinois Institute of Technology, USA)

pMORE: Exploiting Partial Packets in Opportunistic Routing Wei Hu, Jin Xie, Zhenghao Zhang (Florida State University, USA)

Capacity and Delay Tradeoffs of MotionCast with Base Stations Luoyi Fu, Sen Yang, Xinbing Wang (Shanghai Jiaotong University, China) Xiaoying Gan (Shanghai Jiao Tong University / University of California, San Diego, China)

TECHNICAL SYMPOSIA • THURSDAY

Novel Channel Assignment Algorithm for Handoff Support in Hierarchical Wireless Mesh Networks

Haopeng Li, Linda Jiang Xie (University of North Carolina, Charlotte, USA)

Constrained Energy-Aware AP Placement with Rate Adaptation in WLAN Mesh Networks

Zhongming Zheng (University of Waterloo, Canada) Lin X. Cai, Mianxiong Dong, Sherman Shen (University of Waterloo, Canada) H. Vincent Poor (Princeton University, USA)

Thursday, 8 December 2011 • 16:00 – 18:00 Room: GRB 350 B

WN21: Mobile Wireless Networks Chair: Qiang Duan (Pennsylvania State University, USA)

Anonymous Home Binding Update Scheme for Mobile IPv6 Wireless Networking Sanaa Taha (University of Waterloo / Cairo University, Canada) Sherman Shen (University of Waterloo, Canada)

On the Access Time in Mobile Hybrid Networks

Haiyang Zheng, Wenye Wang (North Carolina State University, USA)

Trajectory Optimization of Packet Ferries in Sparse Mobile Social Networks

Xin Guan (Keio University, Japan) Min Chen (Seoul National University, Korea) Cong Liu (Sun Yat-sen (Zhongshan) University, China) H. Chen (University of Tokyo, Japan) Tomoaki Ohtsuki (Keio University, Japan)

Detecting Human Blockage and Device Movement in mmWave Communication System

Y. Ming Tsang, Ada S. Y. Poon (Stanford University, USA)

The Target Tracking in Mobile Sensor Networks

Gabriel Y. Keung, Bo Li, Qian Zhang (Hong Kong University of Science & Technology, Hong Kong) Hai-Dong Yang (Guangdong University of Technology, China)

Modeling Epidemic Data Diffusion for Wireless Mobile Networks Mohammad Towhidul Islam, Mursalin Akon (University of Waterloo, Canada)

Atef Abdrabou (UAE University, UAE) Sherman Shen (University of Waterloo, Canada)

NOTES

TUTORIALS • MONDAY

Monday, 5 December 2011 • 9:00 – 12:30 Room: GRB 322 A/B

T1: Towards Distributed Autonomous Underwater Sensor Networks: Principles, Development, and Future on Acoustic Communications and Networking Instructors: Mario Gerla, UCLA, USA

Jun-Hong Cui and Shengli Zhou, University of Connecticut, USA

The Earth is a water planet. For decades, there have been significant interests in monitoring aquatic environments for scientific exploration, commercial exploitation and coastline protection. Highly precise, real-time, and temporal-spatial continuous aquatic environment monitoring systems are extremely important for various applications, such as oceanographic data collection, pollution detection, and marine surveillance. Underwater sensor networks (UWSNs) is envisioned to be one powerful solution for various applications.

In this tutorial, we will first discuss the design principles of UWSNs, and then we will highlight the recent progress on fundamental research issues in UWSNs, including efficient acoustic communications, multiple access control, data routing and forwarding, reliable data transfer, localization and synchronization, etc. We will also present various design issues of modem prototyping and network testbed development. In the end, we will point out the open issues and future research directions in this field.

Monday, 5 December 2011 • 9:00 – 12:30 Room: GRB 330 A/B **T2: Coherent versus Non-Coherent Coded Cooperative** Wireless Systems

Instructor: Lajos Hanzo, University of Southampton, United Kingdom

An attractive technique of providing multiple independently faded replicas of the transmitted signal for the sake of achieving a beneficial diversity gain is to employ relaying, distributed space-time coding or some other cooperation-aided procedure, which is the subject of this overview. We may also interpret the benefits of decodeand-forward based relaying as receiving and then flawlessly regenerating and re-transmitting the original transmitted signal from a relay closer to the destination - provided of course that the relay succeeded in error-freely detecting the original transmitted signal.

This tutorial reviews the current state-of-the-art in cooperative communications and proposes a number of novel relaying and cooperation techniques. An important related issue is the availability or the absence of accurate channel information, which leads to the concept of coherent versus non-coherent detection both at the relays and at the destination.

Naturally, when using hard-decisions in the transmission chain, we discard valuable soft-information, which results in an eroded performance, albeit also reduces the complexity imposed. Hence the hard- versus soft-decoding performance trade-offs will also be explored in the course, along with the benefits of interleaved random space-time coding invoked for multi-source cooperation.

Monday, 5 December 2011 • 9:00 – 12:30 Room: GRB 332 A/B

T3: Cross-Layer Optimization for Spectral and Energy Efficiency Wireless Systems

Instructors: Ye (Geoffrey) Li, Georgia Institute of Technology, USA Guowang Miao, Samsung, USA

The future success of communication networks hinges on the ability to overcome the mismatch between requested quality of service (QoS) and limited network resources. Spectrum is a natural resource that cannot be replenished and therefore must be used efficiently. This tutorial introduces cross-layer technologies to improve both spectral and energy efficiency from different perspectives of wireless systems. We will first discuss the basic wireless channel characteristics and the methodologies needed to enable high-performance wireless networks. Then we introduce state-of-art spectral and energy efficient communication technologies for both individual users and multi-user networks. The tutorial will be concluded by the discussion of the tradeoff between spectral and energy efficiency in interference limited networks.

Monday, 5 December 2011 • 14:00 – 17:30 Room: GRB 322 A/B

T4: Advances in Coordinated Multi-Cell Multi-User MIMO Systems

Instructor: Li-Chun Wang, National Chiao Tung University, Taiwan

In this tutorial, we first discuss multiuser MIMO (MU-MIMO) antenna techniques in a point-to-point single-cellular environment. Next, we extend our scope to the point-to-multipoint MU-MIMO broadcast systems Then, we will explain how the MU-MIMO broadcast techniques can be applied to improve performance of the multi-cellular MIMO systems in an interference-limited environment. Last, we will introduce the state of art coordinated multi-point transmission (CoMP) techniques in 3GPP LTE-advanced or called the collaborative MIMO (Co-MIMO) techniques in IEEE 802.16m WiMAX, and conclude this tutorial by discussing the open issues in this field.

Monday, 5 December 2011 • 14:00 – 17:30 Room: GRB 330 A/B **T5: Disruption/Delay Tolerant Mobile Tactical Ad Hoc Networks**

Instructor: Zhensheng Zhang, Argon ST, Inc, USA

In mobile ad hoc networks, nodes are constantly in motion and/or operate on limited power. When nodes are in motion, links can be obstructed by intervening objects. When nodes must conserve power, links are shut down periodically. These result in intermittent connectivity. When no path exists between source and destination, network partition occurs.

In this tutorial, we will review different delay/disruption tolerant networks (DTN architectures and different protocol stacks proposed, the Bundle Protocol (BP), the Convergence Layer (CL) protocols such as Licklider transmission protocol (LTP)-CL, TCP-CL and UDP-CL. Routing in DTNs is one of the key components in the DTN architecture. An overview of recent research and experimental activities on DTN over simulation testbed and in space, both low-Earth orbit and deep space, is also presented. The tutorial also identifies open research issues and intends to motivate new research and development in this area.

Monday, 5 December 2011 • 14:00 – 17:30 Room: GRB 332 A/B/D/E

T6: Next Generation Data Center Networks for Cloud Computing

Instructor: Sudipta Sengupta, Microsoft Research, USA

IEEE Global Communications Conference

Large scale data centers are enabling the new era of Internet cloud computing. The computing platform in such data centers consists of low-cost commodity servers that, in large numbers and with software support, match the performance and reliability of expensive enterprise-class servers of yesterday, at a fraction of the cost. The network interconnect within the data center, however, has not seen the same scale of commoditization or dropping price points.

In this tutorial, we will begin with an introduction to data centers for Internet/cloud services. We will survey several next-generation data center network designs that meet the criteria of allowing any service to run on any server in a flat un-fragmented pool of servers and providing bandwidth guarantees for arbitrary communication patterns among servers (limited only by server line card rates). We will also cover other emerging aspects of data center networking like energy proportionality for greener data center networks.

TUTORIALS • FRIDAY

Friday, 9 December 2011 • 9:00 – 12:30 Room: GRB 322 A/B **T7: Information Warfare**

Instructor: Thomas M. Chen, Swansea University, Wales, United Kingdom

The tutorial gives a technical overview of information warfare (or cyber warfare) to attendees familiar with networks. Information warfare is computer network attacks between nations for political or military reasons. The introduction covers the goals, actors, and targets of information warfare. A historical background is highlighted by example cases. The main part of the tutorial covers offensive and defensive techniques. Finally, the tutorial will cover a comprehensive survey of open research issues points out several technical areas that need more work to find better solutions.

Friday, 9 December 2011 • 9:00 – 12:30 Room: GRB 330 A/B **T8: Interference Alignment: A New Look at Signal Dimensions in Interference Networks**

Instructor: Syed A. Jafar, University of California, Irvine, USA

The Shannon capacity of wireless networks is the holy grail of network information theory. Recently, this area has seen a burst of activity leading to remarkable progress on a variety of problems including the capacity of interference networks, X networks, cellular networks, multicast and compound broadcast networks, tactical communication networks with secrecy and jamming issues, cooperative communication networks, cognitive radio networks, and network coding for multiple unicast networks and distributed data storage networks. While each communication scenario has its own peculiarities, a common thread running through a vast number these recent developments is the new idea of interference alignment. This tutorial is interded as a survey of these recent advances, following the connecting thread of interference alignment and highlighting the new insights and intuition that emerge out of the recent results.

The tutorial will place special emphasis on the signal processing aspects of Interference Alignment. Topics covered will include – the non-trivial nature of bandwidth and degrees of freedom metrics in a multiuser setting; the tradeoffs between accessible signaling dimensions – time, frequency, space and signal levels in a wireless network with multiple antenna nodes; interference alignment as a means to recover desired information when the number of equations is much smaller than the number of unknown variables; conceptual examples to illustrate the principles behind interference alignment; feasibility conditions for interference alignment through linear beamforming schemes and connections to algebraic geometry; lattice alignment and connections to diophantine approximation theory; asymptotic interference alignment; blind interference alignment; retrospective interference alignment; and the combination of interference alignment and network coding for applications like multiple unicasts and distributed data storage repair.

Friday, 9 December 2011 • 9:00 – 12:30 Room: GRB 332 A/B **T9: Communications and Networking for Smart Grid** Systems

Instructors: Dusit Niyato, Nanyang Technological University, Singapore Rose Qingyang Hu, Utah State University, USA Ekram Hossain, University of Manitoba, Canada Yi Qian, University of Nebraska-Lincoln, USA

In this tutorial, an intensive (but friendly) introduction to the various data communications and networking technologies being developed for smart grid will be provided. First, a brief overview of smart grid, enabling technologies for smart grid, and the importance and requirements of data communication for reliable and efficient operation of smart grid will be presented. The details of data communication and networking infrastructure (e.g., home area network, wide-area measurement system, home energy management system, advanced metering infrastructure, demand response management, and sensor and actuator network), and the related standardization activities will then be discussed. The impact of cyber threat and security related issues (e.g., security requirements and security services including confidentiality, integrity, authentication, authorization, and third-party protection) will be reviewed. To this end, several major open research issues and directions for future research on smart grid communications and networking will be outlined.

Friday, 9 December 2011 • 14:00 – 17:30 Room: GRB 322 A/B **T10: Biologically-inspired and Nano-scale Communication and Networking**

Instructors: Ozgur B. Akan, Koc University, Turkey Falko Dressler, University of Innsbruck, Austria

The developments in communication technologies have yielded many existing and envisioned information network architectures such as cognitive radio networks, sensor and actor networks, quantum communication networks, terrestrial next generation Internet, and InterPlaNetary Internet. However, there exist many common significant challenges to be addressed for the practical realization of these current and envisioned networking paradigms such as the increased complexity with large scale networks, their dynamic nature, resource constraints, heterogeneous architectures, absence or impracticality of centralized control and infrastructure, need for survivability, and unattended resolution of potential failures. These challenges have been successfully dealt with by Nature, which, as a result of millions of years of evolution, have yielded many biological systems and processes with intrinsic appealing characteristics such as adaptivity to varying environmental conditions, inherent resiliency to failures and damages, successful and collaborative operation on the basis of a limited set of rules and with global intelligence which is larger than superposition of individuals, self-organization, survivability, and evolvability. Inspired by these characteristics, many researchers are currently engaged in developing innovative design paradigms to address the networking challenges of existing and envisioned information systems.

In this tutorial, the current state-of-the-art in bio-inspired networking is captured. The existing bio-inspired networking and communication protocols and algorithms devised by looking at biology as a source of inspiration, and by mimicking the laws and dynamics governing these systems is presented along with open research issues for the bio-inspired networking. Furthermore, the domain of bio-inspired networking is linked to the forthcoming research domain of nanonetworks, which bring a set of unique challenges. The objective of this tutorial is to provide better understanding of the potentials for bio-inspired and nano-scale networking, and to motivate research community to further explore this timely and exciting field.

Friday, 9 December 2011 • 14:00 – 17:30 Room: GRB 332 A/B/D/E T11: Towards 4G: Technical Overview of LTE and LTE-Advanced

Instructor: Hyung G. Myung, Qualcomm, USA

The current 3rd generation (3G) cellular wireless systems are evolving into 4th generation (4G). As a pathway to 4G, 3GPP developed Long Term Evolution (LTE). In terms of air interface techniques, LTE system uses OFDMA-based multicarrier modulation, MIMO techniques, and other advanced features to greatly improve the mobile wireless services. In this tutorial, we first survey the underlying techniques of the 4G systems such as OFDMA, SC-FDMA, MIMO, fractional frequency reuse (FFR), and fast multi-carrier resource scheduling. Then, we give technical overview of LTE and LTE-Advanced in detail.

Energizing Global Communications

IEEE GEOSS FORUM XLIV

Monday, 5 December 2011 • 9:00 - 18:00 • Room: 310 A/B

GEO GROUP ON EARTH OBSERVATIONS

IEEE GEOSS Forum XLIV

Use of Sensor Networks and Communications Technologies in Earth Observations and Rural Communities

This one-day workshop will bring together the Earth Observation community with IEEE Communications experts, and include discussions on sensor networks, modeling, signal processing, and use of communications technologies in rural areas. The program will consist of a series of presentations, breakout sessions and discussions. A report will be written with recommendations for GEOSS.

Organizers:		
Kobus Roux Mehmet Ulema	Terence van Zyl Ingo Simonis	Kim Williams Doug Zuckerman
10:00 – 10:20 Sensor Web/WSN ar Wireless Communic Spectrum and Energy E Networks, Intelligent a Networks: Rural Commun Fisseha Mekuria	nd Next Generation ations Networks Efficient Wireless Sensor nd Collaborative Radio ications Context	11:40 – 12:00 Usage of WSN and WSN Applications to Support EO/GEOSS Use of WSN, concept studies and applicability in re- world scenarios, deployment of WSNs Mehmet Ulema 12:20 – 12:40
10:20 – 10:40 Cooperative Security Sensor Networks Challenges and Solutions Mohamed Hamdi 11:00 – 11:20	y of Distributed	Natarajan Vijayarangan 14:00 – 15:30 Participant Presentations 16:00 – 17:00 Presentations
9:40 – 10:00 The RESTful Approach Modern architectures to improve Sensor Web	Sensor Integration and Communication17:Issues in Rural Areas17:How to connect sensors and devices in rural areas, how to save costs, what type of protocols can be used, how to bridge from Internet to rural nodes17:Adnan Abu-Mahfouz17:11:20 - 11:40 Kamesh Namuduri11:20 - 11:40	17:00 – 17:30 Reports from Breakout Sessions
y used, how to bridge from Adnan Abu-Mahfouz 11:20 - 11:40 Kamesh Namuduri		17:30 – 18:00 Closing
	Corgan Kobus Roux Mehmet Ulema 10:00 – 10:20 Sensor Web/WSN an Wireless Communic Spectrum and Energy E Networks, Intelligent a Networks: Rural Commun Fisseha Mekuria 10:20 – 10:40 Cooperative Security Sensor Networks Challenges and Solutions Mohamed Hamdi 11:00 – 11:20 Sensor Integration a Issues in Rural Area How to connect sensors a how to save costs, what used, how to bridge from Adnan Abu-Mahfouz 11:20 – 11:40 Kamesh Namuduri	Organizers: Kobus Roux Mehmet Ulema Terence van Zyl Ingo Simonis 10:00 – 10:20 Sensor Web/WSN and Next Generation Wireless Communications Networks e Spectrum and Energy Efficient Wireless Sensor 0 Networks, Intelligent and Collaborative Radio n Networks: Rural Communications Context Fisseha Mekuria 10:20 – 10:40 Cooperative Security of Distributed Sensor Networks 3. Challenges and Solutions 9 Mohamed Hamdi 11:00 – 11:20 Sensor Integration and Communication Issues in Rural Areas b How to connect sensors and devices in rural areas, how to save costs, what type of protocols can be used, how to bridge from Internet to rural nodes Adnan Abu-Mahfouz 11:20 – 11:40 Kamesh Namuduri



Monday, 5 December 2011 • 8:30 - 15:20 • Room: GRB 342 A/B

WORKSHOPS (M1)

M1: Workshop on Smart Grid Communications and Networks (SG-ComNeTs)

Organizers:

Hamed Mohsenian-Rad, Texas Tech University, USA **Zhu Han**, University of Houston, USA Woon Hau Chin, Toshiba Research Europe Limited, United Kingdom **Jiming Chen**, Zhejiang University, China

8:30 – 8:40 Welcome/Opening Address

8:40 – 9:10

Keynote Address: Prof. H. Vincent Poor, Princeton University, USA

9:10 – 9:45 Session I Smart Grid Security and Privacy

Defending Mechanisms against False-data Injection Attacks in the Power System State Estimation Suzhi Bi, Ying Jun (Angela) Zhang (Chinese University of Hong Kong, Hong Kong)

Manipulating the Electricity Power Market via Jamming the Price Signaling in Smart Grid

Husheng Li (University of Tennessee - Knoxville, USA) Zhu Han (University of Houston, USA)

10:00 – 10:30 **Keynote Address: Prof. Alberto Leon-Garcia**, University of Toronto, Canada

10:30 – 12:00 Session II Resource Management for Smart Grid

Optimal Gateway Placement in the Smart Grid Machine-to-Machine Networks Qiang Liu, Supeng Leng

(University of Electronic Science and Technology of China, China) Yuming Mao (SCIE, China) Yan Zhang (University of Oslo, Norway)

Cost-Aware Smart Microgrid Network Design for a Sustainable Smart Grid Melike Erol-Kantarci, Burak Kantarci, Hussein T Mouftah (University of Ottawa, Canada)

Distributed Scheduling in Cyber-physical Systems: The Case of Coordinated Electric Vehicle Charging Qiao Li, Rohit Negi (Carnegie Mellon University, USA)

Distributed Scheduling of Wireless Communications for Voltage Control in Micro Smart Grid

Husheng Li (University of Tennessee - Knoxville, USA) Zhu Han (University of Houston, USA)

Residential Electricity Load Scheduling for Multi-Class Appliances with Time-of-Use Pricing

Jang-Won Lee, Du-Han Lee (Yonsei University, Korea)

13:30 – 14:00 **Keynote Address: Prof. Steven Low**, California Institute of Technology, USA

14:00 – 15:20 Session III Demand Response and Smart Metering

Demand Side Management for Wind Power Integration in Microgrid Using Dynamic Potential Game Theory Chenye Wu (Tsinghua University, China) Hamed Mohsenian-Rad (Texas Tech University, USA) Jianwei Huang (Chinese University of Hong Kong, Hong Kong)

Amy Yuexuan Wang (Tsinghua University, China)

An Integer Linear Programming and Game Theory Based Optimization for Demand-side Management in Smart Grid

Ziming Zhu (Loughborough, Jie Tang, Sangarapillai Lambotharan (Loughborough University, United Kingdom) Woon Hau Chin, Zhong Fan (Toshiba Research Europe, United Kingdom)

Anybody Home? Keeping User Presence Privacy for Advanced Metering in Future Smart Grid

Shuping Gong, Husheng Li (University of Tennessee - Knoxville, USA)

A Generic Smart Energy Meter Design for the Wireless Infrastructure of Smart Grid

Maneesha Ramesh, Aryadevi Devidas (Amrita University, India)

Light-Weight Key Distribution and Management for Advanced Metering Infrastructure

Joseph Kamto, Lijun Qian, John Fuller, John Attia (Prairie View A&M University, USA)

Energizing Global Communications

WORKSHOPS (M2 & M3)

Monday, 5 December 2011 • 8:30 – 17:40 • Room: GRB 342 D/E M2: 2nd Workshop on Femtocell Networks (FEMnet)

Organizers:

Vikram Chandrasekhar, Texas Instruments. USA

8:30 – 9:30 Session I: Keynote Addresses

10:00 – 12:00 Session II: Interference Management

Indoor to Outdoor Propagation - Measuring and Modeling of Femto Cells in LTE Networks At 800 and 2600 MHz

Dennis M. Rose, Thomas Jansen, Thomas Kürner

Average Interference Analysis in Two-tier Wireless Networks

Wenjun Wu, Lili Xie, Wenbo Wang, Xuanyi Zhang

Robust Designs for Femtocell Networks with Interference From Macrocell Users Qi Zhou, Xiaoli Ma

Decentralized Interference Coordination Via Autonomous Component Carrier Assignment Serkan Uygungelen, Zubin Bharucha, Gunther Auer

On the Performance of Flexible UL-DL Switching Point in TDD Wireless Networks Pekka Jänis, Visa Koivunen, Cassio Barboza Ribeiro David López-Pérez, King's College London, United Kingdom

On Implementation Requirements and Performances of Q-Learning for Self-Organized Femtocells Ana Galindo-Serrano, Lorenza Giupponi, Marc Majoral

13:30 - 15:20

Session III: Synchronization, Back-hauling and Handover

Vertical Handoff Scheme Concerning Mobility in the Two-hierarchy Network

Shuhui Liu, Chang Yongyu, Guangde Wang, Dacheng Yang

Extending the Reach of GPS-assisted Femtocell Synchronization and Localization Through Tightly-Coupled Opportunistic Navigation

Kenneth M Pesyna, Jr., Kyle Wesson, Robert Heath, Todd Humphreys

Network Synchronization Among Femtocells Shao-Yu Lien, Hou-Hsun Lee, Sung-Yin Shih, Pin-Yu Chen, Kwang-Cheng Chen Emilio Calvanese Strinati, CEA-LETI, France

Multilevel Millimeter Wave Beamforming for Wireless Backhaul

Sooyoung Hur, Taejoon Kim, David Love, James V. Krogmeier, Timothy Thomas, Amitava Ghosh

15:40 – 16:40 Session IV: MIMO

Downlink Beamforming in Multi-Antenna Two-Tier Networks with User Selection

Daniel Jaramillo-Ramirez, Marios Kountouris, Eric Hardouin

Coordinated MIMO Precoding for Power Minimization in Femtocell Systems Olga Muñoz-Medina, Josep Vidal, Adrian Agustin Antonio Pascual-Iserte Sergio Barbarossa

Decentralized Weighted Sum Rate Maximization in MIMO-OFDMA Femtocell Networks

Adrian Agustin, Josep Vidal Olga Muñoz-Medina, Javier R. Fonollosa

16:40 – 17:40 **Panel**

Monday, 5 December 2011 • 8:30 – 18:00 • Room: GRB 342 C/F M3: Wireless Networking for Unmanned Autonomous Vehicles

Jonathan How,

Massachusetts Institute of Technology, USA Channel Measurements over 802.11a-Based UAV-to-Ground Links

Introduction J.How (MIT, USA) C. Wietfeld (TU Dortmund University, Germany)

8:45 - 9:30

8:30 - 8:45

Keynote Session I Application of UAV in Major Disaster based on Experience of Great East Japan Earthquake with Tsunami and Fukushima

S. Shimamoto (Waseda University, Japan)

10:00 - 10:45

Keynote Session II Worldwide Overview of Legal Boundary Conditions for UAV Operation and their Integration in Public Air Traffic

A. Udovic (German Flight Control, Research and Development, Germany)

10:45 - 12:00

Technical Session I Physical Data Links incl. Propagation Channel Analysis Chair: Jonathan How (MIT, USA)

Spatio-temporal Characterization of Airborne Radio Frequency Environments N. Wagle, E. W. Frew (University of Colorado, USA) Organizers:

Link Characterization for Aerial Wireless Sensor

(University of New South Wales, Australia)

Connectivity and Coverage Optimization for

Dynamic Coverage of Time-Varying Environments

Using a Mobile Robot - A Communication-Aware

Real-Time Dynamic Planning to Maintain Network

Connectivity in a Team of Heterogeneous

(Massachusetts Institute of Technology, USA)

Decentralized Connectivity and User Localization

N. Bezzo, R. Fierro (University of New Mexico, USA)

E. Yanmaz. R. Kuschnig, C. Bettstetter

(University of Klagenfurt, Austria)

N. Ahmed, S. Kanhere, S. Jha

Technical Session II

Chair: Christian Wietfeld,

(TU Dortmund University, Germany)

A. Ghaffarkhah, Y. Yan, Y. Mostofi

(University of New Mexico, USA)

A. Kopeikin, S. Ponda, J. How

via Wireless Robotic Networks

Unmanned Systems

Unmanned Systems

Networks

13:30 - 15:30

Perspective

Christian Wietfeld, TU Dortmund University, Germany

> Evaluation of Potential Fields Strategies for Aerial Network Provisioning N. Goddemeier, S. Rohde, J. Pojda, C. Wietfeld (TU Dortmund University, Germany)

> 16:00 – 17:30 **Technical Session III** Networking Protocols and Cooperative Behavior of Unmanned Systems Chair: Yasamin Mostofi (University of New Mexico, USA)

One-Step-Ahead Kinematic Compressive Sensing Discussion F. Hover, R. Hummel, U. Mitra, G. Sukhatme (MIT, University of Southern California, USA)

Communication Protocols for Underwater Data Collection Using a Robotic Sensor Network G. A Hollinger, S. Choudhary, P. Qarabaqi, C. Murphy, U. Mitra, G. Sukhatme, M. Stojanovic, H. Singh, F. Hover

(University of Southern California, USA)

Highly Reliable Communication Protocol for WSN-UAV System Employing TDMA and PFS Scheme D.-T. Ho, S. Shimamoto (Waseda University, Japan)

17:30 Closing Remarks

Monday, 5 December 2011 • 8:00 - 18:00 • Room: GRB 350 A

WORKSHOPS (M4)

M4: 2nd Workshop on Optical Wireless Communications (OWC)

Organizers:

Harald Haas, University of Edinburgh, United Kingdom

> Jean Armstrong, Monash University, Australia

Zhengyuan Xu, University of California, Riverside, USA Zabih Ghassemlooy, Northumbria University, United Kingdom

Dominic O'Brien, Oxford University, United Kingdom

8:00 – 8:10 Welcome: Harald Haas

8:10 – 9:30 Physical Layer: Modulation and Coding Chair: Fary Ghassemlooy

IEEE802.15.7 Physical Layer Summary Richard Roberts, Sridhar Rajagopal, Sang Kyu Lim

Receiver Design for Asymmetrically Clipped Optical OFDM Kasra Asadzadeh, Awad Dabbo, Steve Hranilovic

A Novel Technique to Simultaneously Transmit ACO-OFDM and DCO-OFDM in IM/DD Systems Sarangi D. Dissanayake, Kusha Panta, Jean Armstrong

A Comparison of OFDM-based Modulation Schemes for OWC with Clipping Distortion Svilen Dimitrov, Sinan Sinanovic Harald Haas

10:00 – 12:00 Optical Wireless Systems Chair: Jean Armstrong

A Hybrid Radio Frequency and Broadcast Visible Light Communication System Michael Rahaim, Anna Maria Vegni, Thomas Little

"Lights-off" Visible Light Communications Tarik Borogovac, Michael Rahaim, Malika Tuganbayeva, Thomas Little

A Visible Light Localization Aided Optical Wireless System Giulio Cossu, Marco Presi, Raffaele Corsini, Pallab Choudhury, Amir Khalid, Ernesto Ciaramella

Experimental Characterization of Traffic Light to Vehicle VLC Link Performance Kaiyun Cui, Gang Chen, Zhengyuan Xu, Richard Roberts

Channel Viability of Intra-Vehicle Optical Wireless Communications Matthew D. Higgins, Roger Green, Mark S, Leeson

Optical Multiple Access by Receiver Access Control Protocol for Optical Wireless Networks

Maryam Falahpour, Hassan Moradi, Hazem Refai, Peter LoPresti

13:30 – 15:30 Emerging Areas in Optical Wireless Chair: Daniel Xu

A Novel Power and Offset Allocation Method for Spatial Multiplexing MIMO Systems in Optical Wireless Channels Ki-Hong Park, Young-Chai Ko, Mohamed-Slim Alouini

Equalization for Organic Light Emitting Diodes in Visible Light Communications Hoa Le Minh, Zabih Ghassemlooy, Andrew Burton, Paul Anthony Haigh

Channel Modeling for Underwater Optical Communication Chadi Gabriel, Mohammad-Ali Khalighi, Salah Bourennane, Pierre Leon, Vincent Rigaud

Outage Analysis for Parallel Relay Free-Space Optical Communications with Pointing Errors

Ming Sheng, Jun-Bo Wang, Yuan Jiao, Xiaoyu Dang, Ming Chen

On the Channel Capacity of Two-dimensional FSO/CDMA Systems over Atmospheric Turbulence Channels Anh T. Pham, Tu Luu, Cong Thang Truong

NLOS UV Communication Systems Using Spectral Amplitude Coding Mohammad Noshad, Maite Brandt-Pearce

16:00 – 18:00 Panel Discussion Chair: Harald Haas

Panelists:

F. Finkelberg (Light Fantastic Technologies Inc)

R. Green (Warwick University)

M. Kahverad (Penn State University) K.-D. Langer (Fraunhofer / Heinrich Hertz Institute)

T. Little (Boston University)

G. Povey (VLC Ltd)

R. Roberts (Intel Corp.)

WORKSHOPS (M5)

Monday, 5 December 2011 • 8:30 - 17:00 • Room: GRB 350 B

M5: 3rd International Workshop on Management of Emerging Networks and Services (MENS)

Jianguo Ding, University of Luxembourg, Luxemburg

8:30 – 9:30 MENS: Keynote Address Chair: Djamel Djenouri (CERIST Research Centre, Algiers, Algeria)

The Diverse Stakeholder Roles to Involve in Standardization of Emerging and Future Self-Managing Networks

Ranganai Chaparadza (Fraunhofer Fokus, Germany) Tony Jokikyyny (Ericsson, Finland) Latif Ladid (IPv6 Forum, Luxemburg) Jianguo Ding (University of Luxembourg, Luxemburg) Arun Prakash (Fraunhofer FOKUS & Technische Universität Berlin, Germany) Said Soulhi (Ericsson, Sweden)

Presenters: Ranganai Chaparadza (Fraunhofer Fokus, Germany)

Latif Ladid (IPv6 Forum, Luxemburg)

10:00 – 11:00 MENS1-1: Management of P2P Networks, Wireless and Heterogeneous Networks Chair: Djamel Djenouri

(CERIST Research Centre, Algiers, Algeria)

Arrival and Departure Processes of Nodes in P2P Systems

Susumu Shibusawa (Ibaraki University, Japan)

Impact of Packet Forwarding during Inter-eNodeB Handover Via X2

Leo Bhebhe (Nokia Siemens Networks, Finland) Zhonghong Ou (Aalto University, Finland)

MENS2-1: Management of Future Internet Chair: Ranganai Chaparadza (Fraunhofer Fokus, Germany)

Autonomic DHCPv6 Architecture

Csaba Simon, Felicián Németh, Ferenc Uzsák, Gábor Rétvári, Ferenc Ficsor, Rolland Vida (Budapest University of Technology and Economics, Hungary)

Data Concentration and Archival to SD Card via Hardware Description Language Omar Elkeelany, Vivekanand Todakar

(Tennessee Technological University, USA)

11:00 – 12:00 MENS1-2: Management of P2P Networks, Wireless and Heterogeneous Networks Chair: Djamel Djenouri

(CERIST Research Centre, Algiers, Algeria)

Distributed Approach for Mitigating Coverage Loss in Heterogeneous Wireless Sensor Networks Kavin Kasinathan, Mohamed Younis (University of Maryland Baltimore County, USA)

Ranganai Chaparadza, Fraunhofer Fokus, Germany

File-Aware P2P Traffic Classification Zhou Zhou, Tian Song (Beijing Institute of Technology, China)

(Beijing Institute of Technology, China)

MENS2-2: Management of Future Internet Chair: Ranganai Chaparadza (Fraunhofer Fokus, Germany)

Multiperiod Planning of Optical Protection Schemes

Rafaelli Neves de Alencar Vidal (Softpace GmbH, Germany) Clara Kronberger (Technische Universität München, Germany) Dominic A. Schupke (Nokia Siemens Networks & NSN Research, Germany)

A Prediction Criterion for Selecting Popular Destinations

Alexandre Fonte, Marilia Curado, Edmundo Monteiro (University of Coimbra, Portugal)

13:30 – 15:30 MENS3-1: QoS for Emerging Networks Chair: Djamel Djenouri

(CERIST Research Centre, Algiers, Algeria)

Understanding the Advantage of Business-driven QoS Provisioning on the Performance of Networks Patrick-Benjamin Bök, Christian Waterkamp, Daniel Höttges, York Tüchelmann (Ruhr-University Bochum, Germany)

Context-aware Autonomic QoS Model for Future Internet

Wang Wendong, Gong Xiangyang, Xirong Que (Institute of Networking Technology, China)

A Distributed Fair Congestion Avoidance Protocol Patrick-Benjamin Bök, Stephanie Dünhaupt (Ruhr-University Bochum, Germany) Luis Blazquez (University of Oviedo, Spain) York Tüchelmann (Ruhr-University Bochum, Germany)

Design and Analysis of Arrangement Graph-based Overlay Systems for Information Sharing Ssu-Hsuan Lu, Kuan-Chou Lai (National Taichung University, Taiwan) Kuan-Ching Li (Providence University, Taiwan) Yeh-Ching Chung (National Tsing Hua University, Taiwan)

MENS4-1: Autonomic Networking, Cognitive Networking, and Self-Management Chair: Ranganai Chaparadza

(Fraunhofer Fokus, Germany)

Achieving Cell Outage Compensation in Radio Access Network with Automatic Network Management

Li Fuqiang, Qiu Xue-song, Luoming Meng, Zhang Heng, Wenzhe Gu (Beijing University of Posts and Telecommunications, China) **Djamel Djenouri**, CERIST Research Centre, Algiers, Algeria

Characterizing Signature Sets for Testing DPI Systems

Rafael T. Antonello (Federal University of Pernambuco & Brazilian Federal Institute of Education, Brazil) Stenio Fernandes, Djamel Hadj Sadok, Judith Kelner (Federal University of Pernambuco, Brazil)

Operator-driven Framework for Establishing and Unifying Autonomic Network and Service Management Solutions

Kostas Tsagkaris, Panagiotis Vlacheas (University of Piraeus, Greece) Aimilia Bantouna (University of Piraeus & Telecommunication Networks and Integrated Services Laboratory, Greece) Panagiotis Demestichas (University of Piraeus, Greece) Gerard Nguengang, Mathieu Bouet (Thales Communications SA, France) Laurent Ciavaglia, Pierre Peloso (Alcatel-Lucent, France) Imen Grida Ben Yahia, Christian Destré (Orange Labs, France)

16:00 - 17:00

MENS3-2: QoS for Emerging Networks Chair: Djamel Djenouri

(CERIST Research Centre, Algiers, Algeria)

Client-Side Architecture for Mobile Service QoS Monitoring Using Generalized Extreme Value Theorem Ammar Kamel, Ala I Al-Fugaha

(Western Michigan University, USA)

I-DWRR - an Insolvency Enabled Scheduling Scheme Extending Deficit Weighted Round Robin Patrick-Benjamin Bök, Katharina Kohls, York Tüchelmann, Kolja Kollorz (Ruhr-University Bochum, Germany)

MENS4-2: Autonomic Networking, Cognitive Networking, and Self-Management

Chair: Ranganai Chaparadza (Fraunhofer Fokus, Germany)

A Model-Driven Approach to Design and Verify Autonomic Network Behaviors Arun Prakash (Fraunhofer FOKUS & Technische Universität Berlin,

Germany) Ranganai Chaparadza, Alexej Starschenko (Fraunhofer FOKUS, Germany)

Autonomicity in Distributed Mobility Management Yuhong Li

(Beijing University of Posts and Telecommunications, China)

WORKSHOPS (M6)

Monday, 5 December 2011 • 8:55 - 17:20 • Room: GRB 350 C

M6: 1st Workshop on Distributed Antenna Systems for Broadband Mobile Communications

Organizers:

Junawon Lee. Samsung US R&D Center, USA

Dimitris Toumpakaris. University of Patras, Greece

Atilio Gameiro. University of Aveiro, Portugal

8:55 - 9:00 Welcome/Opening Address

9:00 - 9:30

Kevnote Address Next Generation Wireless Systems: The Use of Radio over Fiber Dr. Nathan Gomes (University of Kent, United Kingdom)

10:00 - 11:00

Session I Transmission of Signals over Fiber Chair: Mingshan Zhao (Dalian University of Technology, China)

Single Sideband RoF Transmission with Polymer-based Optical Microring Filters

Xiuyou Han, Mingshan Zhao, Yiying Gu, Jie Teng, Linghua Wang (Dalian University of Technology, China)

Transmission of Four Channels SCM Over Fiber and Nonlinear Compensation for RSOA External Modulators Zhansheng Liu, Manuel Violas (Instituto de Telecomunicações, Portugal)

Nuno Borges Carvalho (University of Aveiro/IT Aveiro, Portugal)

Multi-channel Signal Transmission through Radio Over Fiber Architecture

Philippos Assimakopoulos, Anthony Nkansah, Nathan J. Gomes, David Wake (University of Kent, United Kingdom)

Digitized RF-over-Fiber Transport for Hybrid Fiber-Wireless Links Christina Lim, Ampalavanapillai Nirmalathas, Yizhuo Yang (University of Melbourne, Australia)

11:00 - 12:00 Session II-I System Design, Performance and Capacity I Chair: Ioannis Krikidis (University of Cyprus, Cyprus)

Power Spectrum Optimization for Interference Mitigation Via Iterative Function Evaluation Havssam Dahroui, Wei Yu (University of Toronto, Canada)

Taiwen Tang, Steve Beaudin (Bling Networks, Canada)

Increasing Throughput and Fairness in the Downlink of Cellular Systems with N-fold Sectorization

Ines Riedel, Gerhard Fettweis (Technische Universität Dresden, Germany)

High Rate Single-Carrier Frequency-Domain Equalization for Multi-Relay **Cooperative Systems**

Homa Eghbali, Sami Muhaidat (Simon Fraser University, Canada)

A Low-Cost Non-Coherent Transmission for Uncoded Two-Way Relay Channels Ioannis Krikidis (University of Cyprus, Cyprus)

Zhiguo Ding (Newcastle University, United Kingdom) Charalambos D. Charalambous (University of Cyprus, Cyprus) 13:45 - 14:15 Kevnote Address **Base Station Cooperation - From First Principles to Implementation** Prof. Andreas F. Molisch, USC, USA

14:15 - 15:30

Panel

Distributed Antenna Systems: Latest Advances, Opportunities and Challenges

Participants from Academia and Industry Discuss Current Status of DASs, Implementation Challenges, Opportunities and Current Status of Standardization/products. Panelists:

Dr. Werner Mohr (Head of Research Alliances, Nokia Siemens Networks, Germany) Dr. Charlie Zhang (Director, Samsung Telecom America and Vice Chairman for 3GPP RAN 1 Group, USA) Prof. Gerhard Fettweis (TU Dresden, Germany)

16:00 - 17:20Session II-II System Design, Performance and Capacity II

Chair: Huiling Zhu (University of Kent, United Kingdom) Minimum Bit-Error-Rate Nonlinear Precoding for Multi-User Distributed Antenna

Systems Daniel Castanheira (University of Aveiro, Portugal) Atilio Gameiro, Adão Silva

(Instituto de Telecomunicações /University of Aveiro, Portugal)

Distributed Versus Centralized Zero-Forcing Precoding for Multicell OFDM Systems

Reza Holakouei, Adão Silva, Atílio Gameiro (Instituto de Telecomunicações / Universidade de Aveiro, Portugal)

ST-MRC Based System Capacity Analysis in Distributed Antenna Systems

Jin-Yuan Wang, Jun-Bo Wang, Xiaoyu Dang (Nanjing University of Aeronautics and Astronautics, China) Ming Chen (Southeast University, China) Han-Yin Li (Guangdong Development Bank, China)

Joint Resource Allocations in Distributed Antenna Systems with Coherent Transmitter

Tan Wang, Ying Wang (Beijing University of Posts and Telecommunications, China)

Capacity of Distributed Antenna Systems in Multi-Floor Buildings

Hassan Osman, Huiling Zhu, Temitope Alade (University of Kent, United Kingdom) Dimitris Toumpakaris (University of Patras, Greece)

Energizing Global Communications

WORKSHOPS (M7)

Monday, 5 December 2011 • 8:00 – 18:00 • Room: GRB 350 D/E/F

M7: Workshop on Mobile Computing and Emerging Communication Networks

Organizers:

Georgios I. Tsiropoulos, Dimitrios G. Stratogiannis, Eirini Eleni Tsiropoulou National Technical University of Athens, Greece

8:00 - 9:30 Session I Research Topics on Mobile Ad Hoc and Sensor Networks **Chair: Lambros Lambrinos**

Reliability-Aware Geocast for Mobile Ad Hoc Networks Amir Aminzadeh Gohari, Volkan Rodoplu

Two Way Opportunistic MAC Protocol for Ad Hoc Networks Rizwan Ahmad, Mazen Omar Hasna, Adnan Abu-Dayya

Traffic Splitting Protocol for Multipath Routing in Wireless Sensor Networks Mohamed Ebada, Hussein Mouftah

Pareto Optimal Collection Tree Protocol for Industrial Monitoring WSNs Yizhi Wu, Dongping Quan, Hanguang Han

10:00 - 12:00 Session II Resource Management and Routing in Wireless and Mobile Networks

Chairs: Dimitrois G. Stratogiannis and Georgios I. Tsiropoulos

Scalability Analysis of a Multihomed Network Mobility Protocol Md Shohrab Hossain, Mohammed Atiguzzaman, William D. Ivancic

Enabling Run-Time Utility-Based Optimization Through Generic Interfaces in Wireless Networks Krisakorn Rerkrai, Jad Nasreddine, Janne Riihijärvi, Petri Mähönen

Survivability Evaluation of NEMO with Multiple Mobile Routers Md Shohrab Hossain, Mohammed Atiquzzaman, William D. Ivancic

Creating a Maritime Wireless Mesh Infrastructure for Real-Time Applications Lambros Lambrinos, Constantinos Djouvas

An Intra-cell Peer to Peer Protocol in IEEE 802.22 Networks Huaizhou Shi, R. R. Venkatesha Prasad, Ignas G.M.M. Niemegeers

Service Program Mobility - Dynamic Service Roaming Henrik Lundqvist, Zoran Despotovic, Gerald Kunzmann, Jelena Frtuniki, Wolfgang Kellerer

Bandwidth Allocation in Wireless Networks Employing Social Distance Aware **Utility Functions** Dimitrios Stratogiannis, Georgios Tsiropoulos, Panayotis Cottis

13:30 - 15:30

Session III Channel Modeling and Coding in Wireless Networks Chair: Taimour Aldalgamouni

Static and Dynamic Channel Estimation Techniques for MIMO-Constant **Envelope Modulation** Ehab Mahmoud Mohamed

Combination of QAPM and OFDM for High Power Efficiency and Spectral Efficiency Jae Hoon Choi, Haeseong Jeong, Heung-Gyoon Ryu

Oblique Projection Based Linear Precoding for Downlink Multi-user Multipleinput Multiple-output Communications Peng Shang, Jinsong Wu, Xudong Zhu

Combination of Spectrum Sensing and Allocation in Cognitive Radio Networks Based on Compressive Sampling Xiaoyu Qiao, Zhen-hui Tan

Distributed Spectral Efficiency Optimization At Hotspots Through Self **Organisation of BS Tilts** Ali Imran, Muhammad Ali Imran, Atta UI Quddus, Rahim Tafazolli

16:00 - 18:00 Session IV Advances on Propagation Issues for Wireless Communications Chairs: Dimitrois G. Stratogiannis and Georgios I. Tsiropoulos

Performance Evaluation for Code Division Multiple Access with Space-Frequency Block Code Downlink Transmission over Multipath Weibull Fading Channel Model

Taimour Aldalgamouni, Amer M. Magableh, Salsabeel Al-Theiabat

Exact Analytical Solution for End-to-End SNR of Multihop AF Relaying Systems Norman C. Beaulieu, Samy S. Soliman

Spatial, Spectral and Temporal Adaptation for Fast Fading MIMO-OFDMA Systems

Balkan Kecicioglu, Wenxun Qiu, Hlaing Minn, John Hansen

Fair Channel Allocation and Power Control for Uplink and Downlink Cognitive **Radio Networks**

Ding Xu, Zhiyong Feng, Yizhe Li, Ping Zhang

EEE Global Communications Conference

Characterization of Inter-Body Interference in Context Aware Body Area Networking (CABAN)

Sean F. Heaney, William G. Scanlon, Emiliano Garcia-Palacios, Simon Cotton, Adrian McKernan

Monday, 5 December 2011 • 8:30 – 18:00 • Room: GRB 351 A/B

WORKSHOPS (M8)

M8: Joint Workshop of SCPA and SaCoNAS

Organizers:

Abdelhamid Mellouk, University Paris-Est Creteil Val de Marne, France

Samer Mohammed. University Paris 12, France

Jaime Lloret. Universidad Politécnica de Valencia, Spain

Sherali Zeadally,

University of the District of Columbia,

USA

Nidal Nasser. University of Guelph, Canada

Joel J. P. C. Rodrigues,

Instituto de Telecomunicações,

University of Beira Interior, Portugal

Ivan Stojmenovic, University of Ottawa, Canada

8:30 - 8:40**Opening Session** Introduction to SCPA and SaCoNAS Abdelhamid Mellouk,

University Paris-Est Creteil Val de Marne, France Chair SaCoNAS 2011

Jaime Lloret,

Universidad Politécnica de Valencia, Spain Co-Chair SCPA 2011

Joel J. P. C. Rodrigues,

Instituto de Telecomunicações, University of Beira Interior, Portugal Co-Chair SCPA 2011

8:40 - 9:30

Session I: Keynote Address Chair: Joel J. P. C. Rodrigues

(Instituto de Telecomunicações, University of Beira Interior, Portugal)

Issues and Challenges Designing and Developing Smart Protocols and Algorithms Prof. Dr. Jaime Lloret Mauri,

Universidad Politécnica de Valencia, Spain

10:00 - 12:00:

Session II.A: SCPA – Transport and **Application Layer Protocols and Algorithms** Chair: Ana Cristina B. Kochem Vendramin (Universidade Tecnológica Federal do Paraná, Brazil)

Automatic Network Service Discovery and Selection in Virtualization-Based Future Internet Qiang Duan (Pennsylvania State University, USA)

Session-Oriented Communication System for Truly **Reliable and Robust Smart Grid**

Augusto Jose Venancio Neto (Universidade Federal do Ceará, Brazil) Eduardo Cerqueira (Federal University of Para, Brazil) Jose Neuman (UFC, Brazil) Luci Pirmez (Federal University of Rio de Janeiro, Brazil) Danielo Gomes (Federal University of Ceará, Brazil) Rui L. Aguiar (University of Aveiro, Portugal)

A Supervised Learning Approach to Cognitive Access Point Selection

Biljana Bojovic, Nicola Baldo, Jaume Nin-Guerrero (Centre Tecnòlogic de Telecomunicacions de Catalunya, Spain)

Paolo Dini (Centre Tecnòlogic de Telecomunicacions de Catalunya, Italy)

On Reducing the Processing Load of Redundancy Elimination Algorithms

Sumanta Saha (Aalto University, Finland)

Classification of TCP Connection Termination Behaviors for Mobile Web

Junaid Junaid, Markus Fiedler, Patrik Arlos, Tahir Nawaz Minhas (Blekinge Institute of Technology, Sweden) Denis Collange (Orange Labs, France)

10:00 - 12:00Session II.B SACONET

Chair: Scott Fowler (Linköping University, Sweden)

Performance Evaluation of Various Routing Protocols in Opportunistic Networks Sanjay Kumar Dhurandher

(Netaji Subhas Institute of Technology, India) Deepak Kumar Sharma (University of Delhi, India) Isaac Woungang (Ryerson University, Canada) Han-Chieh Chao (National Ilan University, Taiwan)

Autonomous Navigation Systems for Emergency Management in Buildings Avgoustinos Filippoupolitis, Gokce Gorbil,

Erol Gelenbe (Imperial College London, United Kingdom)

Study on Power Saving Based on Radio Frame in LTE Wireless Communication System Using DRX Scott Fowler (Linköping University, Sweden)

A Lightweight Privacy-Preserving Mutual Authentication Protocol for RFID Systems

Xinxin Fan, Guang Gong (University of Waterloo, Canada) Daniel W. Engels (Revere Security, USA) Eric Smith (AuthentiCrypt, USA)

Modeling Routing Overhead Generated by Wireless **Proactive Routing Protocols**

Nadeem Javaid (COMSATS Institute of IT, Pakistan) Ayesha Bibi (ICIT, Gomal University, Pakistan) Akmal Javaid, Shahzad A. Malik (COMSATS Institute of Information Technology, Pakistan)

A Solution to the III-Conditioned GPS Accuracy **Classification Problem: Context Based Classifier** Nabil M. Drawi, Haitham Amar, Otman Basir (University of Waterloo, Canada)

13:30 - 15:30

Session III: SCPA - Routing and Multicast **Protocols and Algorithms**

Chair: Rui L Aguiar (University of Aveiro, Portugal)

Robust Multicast Scheduling Based on Relaying, Power Control, and Rate Adaptation in Wireless Networks Izhak Rubin, Kian Hedayati (UCLA, USA)

An Adaptive Threshold Method to Address Routing Issues in Delay-Tolerant Networks

Nicole Ng (Mitre Corporation, USA) Chorng Hwa Chang, Zhongjian Zou, Sai Tang (Tufts University, USA)

A Greedy Ant Colony Optimization for Routing in **Delay Tolerant Networks**

Ana Cristina Vendramin, Anelise Munaretto, Myriam Regattieri Delgado (Federal University of Technology of Paraná, Brazil) Aline Carneiro Viana (INRIA/TU-Berlin, France)

Traffic Engineering Framework for Inter-working

Multi-hop Wireless Networks Oladayo Salami, Antonie Bagula, H. Anthony Chan (University of Cape Town, South Africa)

Ant-based Dynamic Hop Optimization Protocol: A Routing Algorithm for Mobile Wireless Sensor Networks

Alexandre Massayuki Okazaki, Antônio Augusto Fröhlich (Federal University of Santa Catarina, Brazil)

16:00 - 18:00

Session IV: SCPA - MAC Layer **Chair: Aravind Kailas**

(University of North Carolina, Charlotte, USA)

NS-MAC: An Energy Efficient Low Latency Duty-Cycling MAC Protocol for Wireless Sensor Networks Hao Chen, Ling Tang, Hao Liu, Jianhui Wu (Southeast University, China)

Performance of Only-Phase Equalization in OFDM with Soft Decoding in Indoor Environment Esam Ali Obiedat, Bassam R. Asir, Loay D. Khalaf (CommScope Inc., USA)

Intelligent Cross-Layer Distributed Data Aggregation in Wireless Sensor Networks Minglei Huang, Yu Hen Hu (University of Wisconsin-Madison, USA)

Establishing Performance Bounds for Alternating Cooperative Broadcasts under High Path-Loss Aravind Kailas

(University of North Carolina, Charlotte, USA)

Mobility Prediction Clustering Algorithm for UAV Networking

Chunhua Zang, Shouhong Zang (Nanjing University of Aeronautics and Astronautics, China)

WORKSHOPS (M9)

Monday, 5 December 2011 • 8:00 - 18:30 • Room: GRB 351 D/E

M9: 2nd Workshop on Multimedia Communications & Services (MCS)

Organizers:

Hsiao-Hwa Chen, National Cheng Kung University, Taiwan

Liang Zhou, Technical University of Munich, Germany Honggang Wang, University of Massachusetts, Dartmouth, USA

8:00 – 9:30 Keynote Session

Robust and Efficient Stream Delivery for Application Layer Multicasting in Heterogeneous Networks Prof. Nei Kato, Tohoku University

On Accelerating Content Delivery Prof. Nirwan Ansari, New Jersey Institute of Technology

Information Hiding and Multimedia Prof. Hamid Sharif, University of Nebraska-Lincoln

10:00 – 12:00 Session I: Multimedia Transmissions Chair: Shaoen Wu

An Adaptive Modulation Scheme in Wireless Multimedia Sensor Networks Ali Alghamdi, Kun Hua

Video Transmission over Cognitive Radio Networks Jingfang Huang, Zhaoyang Zhang, Honggang Wang, Hong Liu

QoE-driven Cross-Layer Optimization in Wireless Networks Addressing System Efficiency and Utility Fairness Srisakul Thakolsri, Serdar Cokbulan, Dan Jurca, Zoran Despotovic, Wolfgang Kellerer

A Survey of Deployment Information of Delay-based TCP Congestion Avoidance Algorithm for Transmitting Multimedia Data Peng Yang, Lisong Xu

A Network Management Algorithm Based on 3D Coding Techniques for Stereoscopic IPTV Delivery Jaime Lloret, Marcelo Atenas, Alejandro Canovas, Miguel Garcia

13:30 – 15:00 Session II: Multimedia Coding, Processing Chair: Wei Wang

A TV Program-Oriented User Generated Content Service with Seamless Video Reconstruction Ranking in Cloud Networks Wei-Ting Cho, Chin-Feng Lai, Shau-Yin Tseng, Han-Chieh Chao, Yueh-Min Huang

Privacy-Preserving License Plate Image Processing Ikechukwu Azogu, Hong Liu

An Improved Method for Side Information Generation and Correlation Parameter Estimation for Distributed Video Coding Bin Li, Yumei Wang, Yu Liu, Lin Zhang

Multimedia Content Distribution of Real Time Controlled and Non-reliable Datagrams between Peers Leandro M Sales, Hyggo Almeida, Angelo Perkusich

Lightweight Packet Scheduling Algorithms for Content Uploading From Mobile Devices to Media Cloud Yonggang Wen, Ge Zhang, Xiaoqing Zhu 16:00 – 17:30: Session III: Network Protocol and Security Chair: Kun Hua

Testbed-based Performance Evaluation of Routing Protocols for Vehicular Delay-Tolerant Networks João Dias, João Isento, Vasco N. G. J. Soares, Farid Farahmand, Joel J. P. C. Rodrigues

Performance Evaluation of Channel Guard Scheme for Cognitive Radio Networks Tigang Jiang, Honggang Wang, Wei Wang

Matrix-Tree Based Hybrid Broadcast Encryption Li Tao, Huaqun Guo, Maode Ma

Frame Fountain: Coding and Decoding MAC Frames Qingmei Yao, Chong Tang, Shaoen Wu

17:30 - 18:30

Session IV: Video Streaming and Overlay Networks Chair: Honggang Wang

Prediction-based Loss Recovery for Frame-level Streaming Video Chun-I Kuo, Chi Huang Shih, Ce-Kuen Shieh, Wen-Shyang Hwang

An Architecture for Autonomic Management of Overlay Networks Yousif Al Ridhawi, Imad Abdeljaouad, Ahmed Karmouch

An End-to-End Video Quality Metric Considering Impacts From Both Encoding and Transmission Yang Yan, Wen Xiangming

Panels:

Gabriel-Miro Muntean, Dublin City University Bin Ni, University of South Carolina Hrishikesh Venkataraman, Dublin City University Dalei Wu, Massachusetts Institute of Technology, Tigang Jiang, University of Electronic Science and Technology of China Chin-Feng Lai Haiyan Luo, Cisco Systems Qian Lv, Western Digital Sherali Zeadally, University of the District of Columbia Shaoen Wu, University of Southern Mississippi Hua Kun, Lawrence Technological University Wei Wang, South Dakota State University

WORKSHOPS (M10)

Monday. 5 December 2011 • 8:00 – 17:20 • Room: GRB 351 C/F

M10: Workshop on Recent Advances in Cognitive Communications and Networking

Organizers:

Ming Yu, Florida State University, USA Nirwan Ansari. NJIT, USA

Wei Liu. Huazhong University of Science and Technology, China

8:00 - 9:20

Session I: Spectrum Sensing in Cognitive Radio Networks Chair: Ming Yu (FSU, USA)

Further Results on the Energy Detection of Unknown Deterministic Signals Over Generalized Fading Channel Oluwatobi O. Olabiyi, Shumon Alam,

Olusegun O. Odejide, Annamalai Annamalai (Prairie View A&M University, USA)

Collaborative Spectrum Sensing Based on the Ratio Between Largest Eigenvalue and Geometric Mean of Eigenvalues

Muhammad Zeeshan Shakir, Anlei Rao, Mohamed-Slim Alouini (KAUST, Saudi Arabia)

Proposal and Hardware Implementation of Smart Threshold Setting Methods for **Spectrum Sensing**

Chunyi Song, Mohammad Azizur Rahman, Hiroshi Harada (National Institute of Information & Communications Technology, Japan)

Licensed Receiver Detection and Authentication in Simplex Licensed Networks Chao Zou, Chunxiao (Tricia) Chigan (Michigan Tech, USA)

10:00 - 12:00

Session II: Protocol Designs in Cognitive Networks Chair: Nirwan Ansari (NJIT, USA)

Analysis of TCP Throughput in Cognitive Radio Networks

Jian Wang, Aiping Huang, Wei Wang, Zhaoyang Zhang (Zhejiang University, China) Vincent Lau (University of Science and Technology, Hong Kong)

Impedance Matching Based Cross-Layer Architecture for Cognitive Networks Rong Li, Zhiyong Feng, Peng Yin, Ying Wang

(Beijing University of Posts and Telecomm, China)

A Cross-layer Selfishness Avoidance Routing Protocol for the Dynamic Cognitive Radio Networks

Kiam Cheng How, Maode Ma (Nanyang Technological University, Singapore) Yang Qin (HIT Shenzhen Graduate School, China)

Joint Routing and Resource Allocation for Delay Sensitive Traffic in Cognitive Mesh Networks

Amr El-Sherif (Alexandria University, Egypt) Amr Mohamed (Qatar University, Qatar) Y. Charlie Hu (Purdue University, USA)

Modeling and Analysis of CogNet Architecture for Cognitive Radio Networks Suyang Ju, Joseph B. Evans (University of Kansas, USA)

Optimal Presence Detection of Improper-Complex Second-Order Cyclostationary Random Signal for Spectrum Sensing in Cognitive Radio Jeong Ho Yeo, Joon Ho Cho

(Pohang University of Science and Technology, Korea)

13:30 - 15:30 Session III: Resource Allocation in Cognitive Radio Networks Chair: Wei Liu (Huazhong University of Science and Technology, China)

Real-Time TVWS Trading Based on a Centralized CR Network Architecture Athina Bourdena (University of the Aegean, Greece)

Evangelos Pallis (Technological Educational Institute of Crete, Greece) Georgios Kormentzas, Harry Skianis (University of the Aegean, Greece) George Mastorakis (Technological Educational Institute of Crete, Greece)

Game-Theoretic Channel Selection for Interference Mitigation in CRNs with **Block-Fading Channels**

Yuhua Xu (Institute of Communications Engineering, PLA University of Science and Technology, China) Qihui Wu, Jinlong Wang (PLA University of Science and Technology, China)

Gao Zhan (Institute of Communications Engineering, China) Alagan Anpalagan (Ryerson University, Canada)

Learning-based Dynamic Channel Selection for Opportunistic Spectrum Access Chin-Wen Chou (HTC, Taiwan)

Kate Ching-Ju Lin (Academia Sinica, Taiwan)

Coalitional Game Formulation for Multi-Channel Cooperative Cognitive Radio Networks

Yu-Wei Chan (National Tsing Hua University, Taiwan) Ronald Y. Chang (Academia Sinica, Taiwan) Feng-Tsun Chien (National Chiao Tung University, Taiwan) Min-Kuan Chang (National Chung Hsing University, Taiwan) Yeh-Ching Chung (National Tsing Hua University, Taiwan)

Reciprocal Spectrum Sharing Game and Mechanism in Cellular Systems with **Cognitive Radio Users**

Pin-Yu Chen, Weng Chon Ao, Shih Chun Lin, Kwang-Cheng Chen (National Taiwan University, Taiwan)

Spectrum Map Retrieval Using Cognitive Radio Network Tomography Chung-Kai Yu, Kwang-Cheng Chen (National Taiwan University, Taiwan)

16:00 - 17:20

Energizing Global Communications

Session IV: Performance of Cognitive Radio Networks Chair: Ming Yu (FSU, USA)

Effect of the Primary User Traffic on Cognitive Relaying with Adaptive Transmission

Anlei Rao, Hao Ma, Mohamed-Slim Alouini (KAUST, Saudi Arabia) Yunfei Chen (University of Warwick, United Kingdom)

Queue Performance Measures for Cognitive Radios in Spectrum Sharing Systems

Abdallah K. Farraj, Scott Miller (Texas A&M University, USA) Khalid A. Qarage (Texas A&M / University at Qatar, USA)

Performance Evaluation of Multiband Multi-Sensor Spectrum Sensing Systems Che Kang Liang, Steven D. Blostein (Queen's University, Canada)

A Geographically Homogeneous Mesh Grouping Scheme for Broadcast **Cognitive Pilot Channel in Heterogeneous Wireless Networks** Zhiqing Wei, Zhiyong Feng

Beijing University of Posts and Telecommunications, China)

Friday, 9 December 2011 • 8:00 - 16:00 • Room: GRB 342 A/B

F1: Joint Workshop on Complex Networks and Pervasive Group Communication

Organizers: Thomas C. Schmidt,

My T. Thai, University of Florida, USA

Duc A. Tran, UMass Boston, USA HAW Hamburg, Germany Matthias Wählisch.

Freie Universität Berlin, Germany

8:00 – 9:30 Complex Networks I Chair: Rong Zheng (University of Houston, USA)

Self-organization of Nodes Using Bio-Inspired Techniques for Achieving Small World Properties

Rachit Agarwal (Telecom SudParis / SAMOVAR UMR, France) Abhik Banerjee (Nanyang Technological University, Singapore) Vincent Gauthier (Institut TELECOM / Telecom SudPari / SAMOVAR UMR, France) Monique Becker (Institut TELECOM / Telecom SudParis, France) Chai Kiat Yeo (Nanyang Technological University, Singapore) Bu Sung Lee (Nanyang Technological University, Singapore)

An Internet Local Routing Approach Based on Network Structural Connectivity Pau Erola, Sergio Gómez, Alex Arenas (Universidad Rovira I Virgili, Spain)

Towards Community-Centric Integrity Management in Crowd-Sourced Systems Amin Ranjbar, Muthucumaru Maheswaran (McGill University, Canada)

10:00 – 12:00 **Pervasive Group Communication Chair: Thomas C. Schmidt** (HAW Hamburg, Germany)

Alleviating Network Load in Dense Urban Multi-Access Application-Layer Multicast

Christian Hübsch (Karlsruhe Institute of Technology, Germany) Oliver P. Waldhorst (Ilmenau University of Technology / Karlsruhe Institute of Technology, Germany)

Service Sharing in Mobile Sensing Systems

Pramita Mitra, Christian Poellabauer (University of Notre Dame, USA)

Group-based Underwater Wireless Sensor Network for Marine Fish Farms Jaime Lloret, Sandra Sendra, Miguel Garcia (Universidad Politecnica de Valencia, Spain) Ginés Lloret (Instituto Politécnico Marítimo Pesquero del Mediterraneo, Spain)

A Markovian Model for Evaluating the Performance of a Key Management Scheme

Hani Ragab-Hassen (University of Kent, United Kingdom) Imed Romdhani (Edinburgh Napier University, United Kingdom) 13:30 – 14:30 Complex Networks II Chair: Rong Zheng (University of Houston, USA)

Self-organization of Wireless Ad Hoc Networks as Small Worlds Using Long Range Directional Beams

BeamsAbhik Banerjee (Nanyang Technological University, Singapore Rachit Agarwal (Telecom SudParis & SAMOVAR UMR, France) Vincent Gauthier (Institut TELECOM / Telecom SudParis; SAMOVAR UMR, France) Chai Kiat Yeo (Nanyang Technological University, Singapore) Hossam Afifi (Institut Telecom / Paris South, France) Bu Sung Lee (Nanyang Technological University, Singapore)

Analysis of Academic Ties: A Case Study of Mathematics Genealogy Engin Arslan, Mehmet Hadi Gunes, Murat Yuksel (University of Nevada - Reno, USA)

14:30 - 16:00

Complex Networks III Chair: Matthias Wählisch (Freie Universität Berlin, Germany)

Novel Path Protection Scheme for Multi-Domain Networks

Feng Xu, Feng Gu (University of New Mexico, USA) Hamed M. K. Alazemi (Kuwait University, Kuwait) Min Peng (Wuhan University, China) Nasir Ghani (University of New Mexico, USA)

Packet Reordering in TCP

Per Hurtig, Anna Brunstrom (Karlstad University, Sweden)

Routing, Weight Assignment and Load Balancing for Tunnel-based Fast IP Local Failure Recovery

Po-Kai Tseng, Wei-Ho Chung (Academia Sinica, Taiwan)

Georg Wittenburg, INRIA, France

INRIA, France

Rong Zheng, University of Houston

WORKSHOPS (F1)
Friday, 9 December 2011 • 9:00 - 15:20 • Room: GRB 342 D/E

WORKSHOPS (F2)

F2: Workshop on Ubiquitous Computing and Networks (UbiCoNet)

Organizers:

Alexander Garcia Davalos, Universidad Autonoma de Occidente, Colombia Pablo Cesar, CWI, Netherlands Xabiel García Pañeda, University of Oviedo, Spain

9:00 – 9:30 Keynote Address CUBIQ - Ubiquitous Service Platform Hiroshi Dempo, NEC, Japan

10:00 – 12:00 **UbiCoNet-1 Ubiquitous Networks Chair: Alexander Garcia Davalos** (Universidad Autonoma de Occidente, Colombia)

A Study on Energy Efficient Cluster-based Network Coding Protocol for Aggregated-Data Gathering in Wireless Sensor Networks Qian Xiao, Kangfeng Zheng, Shoushan Luo, Yajian Zhou (Beijing University of Posts and Telecommunications, China)

A Flexible QoE Framework for Video Streaming Services

Alberto Alvarez, Sergio Cabrero, Xabiel García Pañeda, Roberto Garcia, David Melendi, Rafael Orea (University of Oviedo, Spain)

A Framework for Ubiquitous IP Communications in Vehicle to Grid Networks Sandra Céspedes, Sherman Shen (University of Waterloo, Canada)

An Energy Efficient, High Throughput MAC Protocol Using Packet Aggregation Kien Nguyen (Graduate University for Advanced Studies, Japan) Ulrich Meis, Yusheng Ji (National Institute of Informatics, Japan)

Energy Aware Secure Cluster Based Routing for Ad Hoc Networks Pushpita Chatterjee (IIT, Kharagpur, India)

Real Options for Mobile Communication Management

Rodolfo Esteves, Michael D McCool, Christiane Lemieux (University of Waterloo, Canada)

13:40 – 15:20 UbiCoNet-2 Ubiquitous Computing Chair: Xabiel García Pañeda (University of Oviedo, Spain)

Preserving Privacy While Reducing Power Consumption and Information Loss in LBS and Participatory Sensing Applications Idalides Vergara-Laurens, Miguel A. Labrador (University of South Florida, USA)

Dynamic Telecommunication Service Reconfiguration Algorithm in JSLEE Andres Muñoz, Fabian Hoyos,Oscar Caicedo (University of Cauca, Colombia)

A Realistic Weighted Clustering Algorithm for Data Gathering in Single Hop Cell Phone Based Sensor Network

Mehul B Shah (G H Patel College of Engineering and Technology, India) Pravin Tamhankar (IIT Bombay, India) Prof Merchant (IIT Bombay, USA) Uday B Desai (IIT Hyderabad, India)

Software Platform for Services in Colombian Cities Using the Living Labs Approach

Andres Felipe Millán Cifuentes, Claudia L. Zuñiga (University of Santiago de Cali, Colombia) Alexander Garcia Davalos, Lina Escobar (Universidad Autónoma de Occidente, Colombia) Andres Navarro (Universidad Icesi, Colombia)

Intelligent Configuration Recommendation of Context-aware Mobile Application Haitao Xie, Xiangwu Meng

(Beijing University of Posts and Telecommunications, China)

Example 2 Energizing Global Communications

Friday, 9 December 2011 • 8:50 - 17:20 • Room: GRB 342 C/F

WORKSHOPS (F3)

F3: Multicell Cooperation

Organizers:

Hongyang Chen, University of Tokyo, Japan Zander Zhongding Lei, Institute for Infocomm Research, Singapore Chia-Chin Chong, DOCOMO USA Labs, USA

8:50 – 9:00 Welcome/Opening Address

9:00 - 9:30

Keynote Address Fundamentals of Cooperation in Cellular Networks Prof. H. Vincent Poor, Princeton University, USA Chair: Yi Qing Zhong (Chinese Academy of Sciences, China)

10:00 - 10:30

Keynote Address Coordinated Multipoint Processing and Relaying Prof. Markku Juntti, University of Oulu, Finland Chair: Yi Qing Zhong (Chinese Academy of Sciences, China)

10:40 – 12:00 Session I: MIMO and CoMP Chair: Guido Dartmann (Rwth Aachen University, Germany)

Constrained Joint Transmission for Downlink CoMP Zhenning Shi, Daqing Gu (France Telecom R&D, China)

Jointly Optimized Two-Cell MIMO System

Chan-Byoung Chae (Yonsei University, USA) Insoo Hwang (Samsung US R&D Center, USA) Robert Heath (University of Texas, Austin, USA) Vahid Tarokh (Harvard University, USA)

A Novel Precoding Scheme in Coordinated Multi-point Transmission Systems Yueqiao Xu, Hua Zhou, Yi Wang (Fujitsu R&D Center, China)

Impact of Antenna Downtilt on Cooperative Uplink Detection in a Large Scale Field Trial

Michael Grieger, Gerhard Fettweis (Technische Universität Dresden, Germany)

13:30 – 14:30 Session II: System Design of Multicell Cooperation Chair: Zhenning Shi (France Telecom R&D (Beijing), China)

A General Algorithm for Uplink Opportunistic Interference Alignment in Cellular Network

Lifeng Wang National Key Lab of Communications / UESTC, China) Li Qiang, Li Shaoqian (University of Electronic Science and Technology of China, China) Jingyi Chen (Tongfang Electronic Co. Ltd, China)

Degrees of Freedom and Interference Mitigation for MIMO Interfering Broadcast Channels

Ratheesh Kumar Mungara, Antti Tölli, Markku Juntti (University of Oulu, Finland)

Polynomial Complexity Optimal Detection for Oversaturated M-ary Complexvalued Multiple-Access Systems Wenlong Liu, Guannan Zhao, Jie Wang, Minglu Jin (Dalian University of Technology, China) Jae Moung Kim (INHA University, Korea)

14:30 - 15:30

Session III: Advanced Techniques for Multicell Cooperation Chair: Chan-Byoung Chae (Yonsei University, Korea)

Joint Power Allocation Solutions for Power Consumption Minimization in Coordinated Transmission System Qimei Cui, Bing Luo, Xueqing Huang (Beijing University of Posts and Telecommunications, China)

Cooperative Spectrum Sharing Economy for Heterogeneous Wireless Networks Hung-Bin Chang (University of California, Los Angeles, Taiwan) Kwang-Cheng Chen (National Taiwan University, Taiwan)

Optimum Power Control for Transmitter Cooperation in OFDMA Based Wireless Networks

Sezi Bakım, Onur Kaya (Isik University, Turkey)

16:00 - 17:20

Sessions IV: Performance Evaluation and Relay Technology Chair: Xiaoyi Liu

(Beijing University of Posts and Telecommunications, China)

Beamforming with Relays in Multicell Networks Based on Correlation Knowledge

Guido Dartmann, Dhiraj Shah, Xitao Gong, Gerd H. Ascheid (RWTH Aachen University, Germany)

Performance Evaluation of Existing Network and Advanced Testbed Network for 3G/B3G Systems

Li Chen, Xiaoyi Liu, Xiaohang Chen, Bin Wang, Xin Zhang (Beijing University of Posts and Telecommunications, China)

A Multi-link Relay Station and a Fast Inter-cell Handover Procedure Min Lee, Seong Keun Oh (Ajou University, Korea)

Cooperative Multiuser MIMO Precoding Design for Asynchronous Interference Mitigation

Sen Bong Gee (National University of Singapore, Singapore) Zander Zhongding Lei, Yong Huat Chew (Institute for Infocomm Research, Singapore)

IEEE Global Communications Conference

Friday, 9 December 2011 • 8:30 - 17:30 • Room: GRB 350 A

WORKSHOPS (F4)

F4: Broadband Wireless Access Workshop

Organizers:

Edmundo Monteiro, University of Coimbra, Portugal

Andreas J. Kassler, Karlstads Universitet, Sweden **Leonardo Badia**, MT Lucca Institute for Advanced Studies, Italy

Vasilios Siris, Athens University of Economics and Business, Greece

8:30 – 8:40 **Welcome Chair: Edmundo Monteiro** (BWA'11 Chair, University of Coimbra, Portugal)

8:40 - 9:30

Keynote Address Femtocells and Games: Towards Self-organizing Small-cell Networks Walid Saad, University of Miami, USA

10:00 – 10:40 Session I: WiMAX and LTE Chair: Gabor Fodor (Ericsson Research, Sweden)

WiMAX Non-Saturated Analysis Giovanni Giambene, Snezana Hadzic (University of Siena, Italy)

A New Approach for Improving Indoor LTE Coverage Carlos Gandarillas, Victor Iglesias, Maria Teresa Aparicio, Emilio Mino, Pedro Olmos (Telefonica Research and Development, Spain)

10:40 – 12:00 Session II: Relaying Chair: Thomas Michael Bohnert (SAR Beccarch Switzerland)

(SAP Research, Switzerland)

Generalized Multiplicative Network Coding for the Broadcast Phase of Bidirectional Relaying Jawad Manssour (Ericsson AB, Sweden) Islam Alyafawi, Slimane Ben Slimane (KTH, Sweden)

Effects of Outdated Channel State Information in Partial Relay Selection Systems with Multiple Antennas At the Destination

Fangxiang Wang (BUPT, China) Guodong Xie (Peking University, China) Hang Long, Ding Xu (BUPT, China)

Distributed Beamforming with Relay-Aided Interference Alignment in Fully Connected Interference Network

Yunchuan Yang, Hui Zhao (BUPT, China) Cong Sun (Chinese Academy of Sciences, China) Hua Sun, Wenbo Wang (BUPT, China)

Single-Carrier Frequency-Domain Equalization for Multi-Relay Cooperative Systems with Relay Selection

Homa Eghbali, Sami Muhaidat (Simon Fraser University, Canada) 13:30 – 15:00 Session III: MIMO and Interference Cancellation Chair: Giovanni Giambene (University of Siena, Italy)

Time-domain ML Channel Estimation Considering Antenna Switching Time for RF-MIMO-OFDM Masahiro Yasukawa, Takahiko Saba (Chiba Institute of Technology, Japan)

On Eigenvalue and Capacity Distributions of Cooperative Multi-Keyhole Propagation Channels Yi Zhou (Tongji University, China) Yusheng Ji (National Institute of Informatics, Japan) Weidong Xiang (University of Michigan, Dearborn, USA)

Sateesh Addepalli (Cisco, USA) Aihuang Guo, Fuqiang Liu (Tongji University, China)

Joint Compressed Estimation of Delay-AOA Information for MIMO Channel

Xiaofeng Zhang, Victor Peng, Fansheng Zeng, Wenbo Wang (BUPT, China)

Performance of WH-Spread CI/MC-CDMA System with Interference Cancellation Receiver Mithun Mukherjee, Preetam Kumar (Indian Institute of Technology Patna, India)

Joint ICI Cancellation and Channel Estimation with Real-Time Channel Adaptation for High-Mobility OFDM Systems

Chun-Hao Liu (University of California, Los Angeles, USA) Gene C. H. Chuang (Industrial Technology Research Institute, Taiwan)

16:00 - 17:30

Session IV: Power Efficiency and Scheduling Chair: Andreas J. Kassler

(Karlstads Universitet, Sweden)

On Pilot Dimensioning in Multicell Single Input Multiple Output Systems

Pablo Soldati, Mikael Johansson (Royal Institute of Technology, Sweden) Gabor Fodor, Stefano Sorrentino (Ericsson AB, Sweden)

A Peak Power Efficient Cooperative Diversity Using Star-QAM

Koji Ishibashi, Won-Yong Shin, Hyo Seok Yi (Harvard University, USA) Hideki Ochiai (Yokohama National University, Japan)

Energizing Global Communications

Consumption Factor: A Figure of Merit for Power Consumption and Energy Efficiency in Broadband Wireless Communications James Murdock, Theodore Rappaport (University of Texas, Austin, USA)

An Exact Outage Analysis of Zero-Forcing V-BLAST with Greedy Ordering Serdar Ozyurt, Murat Torlak (University of Texas, Dallas, USA)

A Reduced Feedback Proportional Fair Multiuser Scheduling Scheme Mohammad Shaqfeh, (Texas A&M University, Qatar)

Mohamed-Slim Alouini (KAUST, Saudi Arabia)

Poster Session

Chair: Andreas J. Kassler (Karlstads Universitet, Sweden)

Blind and Semiblind Detection of OFDM Signals by CIR Model in the Multipath Fading Channel Ren-Shian Chen, Ming-Xian Chang (Nation Cheng Kung University, Taiwan)

D-BLAST with Group Zero-Forcing Detection: Diversity and Multiplexing Tradeoff Analysis

Yi Lu, Wei Zhang (University of New South Wales, Australia) Xiang-Gen Xia (University of Delaware, USA)

Resource Allocation for Multiuser Cognitive Radio with Primary User's Cooperation

Ding Xu, Yizhe Li, Zhiyong Feng (BUPT, China) Ping Zhang (WTI-BUPT, China)

Analysis of the Capacity Enhancement of Cellular Systems Using Multiuser Receivers and Multiple Power Zones

Bathiya Senanayake, Mark Reed (Australian National University, Australia)

An Analysis of the Received Signal Strength Accuracy in 802.11A Networks Using Atheros Chipsets: A Solution Towards Self Configuration Sebastian Robitzsch, Liam Murphy (University College Dublin, Ireland) John Fitzpatrick (NEC Laboratories Europe, Germany)

Friday, 9 December 2011 • 8:30 - 17:00 • Room: GRB 350 B

WORKSHOPS (F5)

F5: Physical-Layer Security Workshop

Organizers:

Sennur Ulukus, University of Maryland, USA

8:30 – 9:30 Keynote Address I Suhas N. Diggavi, UCLA Chair: Ashishi Khisti

10:00 – 11:00 Relay Assisted Wiretap Channels Chair: Ashishi Khisti

Secure Wireless Communications via Cooperative Relaying and Jamming Ling Tang, Xiaowen Gong, Jianhui Wu, Junshan Zhang

Gaussian Two-way Wiretap Channel with an Arbitrarily Varying Eavesdropper Xiang He, Aylin Yener

Deaf Cooperation for Secrecy in Multiple-Relay Networks Raef Bassily, Sennur Ulukus

11:00 – 12:00 Secret-Key Generation Chair: Ashishi Khisti

A Remark on Secret-Key Generation Over Correlated Fading Channels Ashish Khisti, Suhas Diggavi

Secret Key Generation from Mobility Onur Gungor, Fangzhou Chen, Can Emre Koksal

Maximization of Worst-Case Secret Key Rates in MIMO Systems with Eavesdropper Anne Wolf, Eduard Jorswieck

13:30 – 14:30 Keynote Address II Prof. Deepa Kundur, TAMU Chair: Sennur Ulukus Ashish Khisti, University of Toronto, Canada

14:30 – 15:30 MIMO Wiretap Channels Chair: Sennur Ulukus

Service Integration in Multiantenna Bidirectional Relay Networks: Public and Confidential Messages Rafael F. Wyrembelski, Holger Boche

On Beamforming Solution for Secrecy Capacity of MIMO Wiretap Channel Jiangyuan Li, Athina Petropulu

Enhanced Physical Layer Security Through Transmit Antenna Selection Hirley Alves, Richard Demo Souza, Mérouane Debbah

16:00 – 17:00 Coding for Secrecy and Cryptography Chair: Sennur Ulukus

LDPC Code Design for the BPSK-constrained Gaussian Wiretap Channel Chan Wong, Wong, Tan Wong, John M. Shea

Known Plaintext Attack on the Binary Symmetric Wiretap Channel Rajaraman Vaidyanathaswami, Andrew Thangaraj

Creation of Degraded Wiretap Channel through Deliberate Noise in Block Ciphered Systems Yahya Khiabani, Shuangqing Wei

Friday, 9 December 2011 • 8:30 - 17:50 • Room: GRB 350 C

WORKSHOPS (F6)

F6: Workshop on Machine-to-Machine Communications "Key" to the Future Internet of Things

Organizers:

Rahim Tafazolli, University of Surrey, United Kingdom

Thierry Lestable, Sagemcom Communications, France Carles Antón-Haro, Centre Tecnologic de Telecomunicacions de Catalunya, Spain **Trevor Gill**, Vodafone, United Kingdom

Pirabakaran Navaratnam, University of Surrey, United Kingdom Peter Rost, NEC Laboratories Europe, Germany

> **Djelal Raouf**, Sagemcom, France

8:30 – 8:40 Welcome: Rahim Tafazolli, Workshop Chair, University of Surrey, UK

8:40 - 9:40

Keynote Address: Next Generation Machine-to-Machine Solutions - Delivering M2M services over Heterogeneous Networks Narayan Menon, Vice President R&D, InterDigital, New York

10:00 - 12:00

Session I: Radio Resource Allocation Thierry Lestable (Sagemcom Communications, France)

Uplink Scheduling for Machine-to-Machine Communications in LTE-based Cellular Systems.

Athanasios Lioumpas, Angeliki Alexiou (University of Piraeus, Greece)

Performance Analysis of a Distributed Resource Allocation Scheme for D2D Communications

Marco Belleschi (University of Siena, Italy) Gabor Fodor (Ericsson Research, Sweden) Andrea Abrardo (University of Siena, Italy)

Power Allocation Schemes for Spatial Field Estimation with Compressed Observations in M2M Capillary Networks Javier Matamoros, Carles Antón-Haro

(Centre Tecnologic de Telecomunicacions de Catalunya, Spain)

Prioritized Random Access with Dynamic Access Barring for RAN Overload in 3GPP LTE-A Networks

Jen-Po Cheng ,Chia-han Lee (Academia Sinica, Taiwan) Tzu-Ming Lin (ITRI, Taiwan)

Throughput Comparison of Random Access Methods with M2M Customers in LTE Networks

Ki-Dong Lee, Sang Kim, Byung Yi (LG Electronics Mobile Research, USA)

A Novel Low Complexity Differential Energy Detection for Sensing OFDM Sources in Low SNR Environment Parisa Cheraghi, Yi Ma, Zhengwei Lu, Rahim Tafazolli (University of Surrey, UK)

13:30 – 14:30 Session II: Energy Efficiency Carles Antón-Haro (CTTC, Spain)

Energy Harvesting Communication System with Battery Constraint and Leakage Bertrand Devillers, Deniz Gunduz (CTTC, Spain)

Power Saving for Machine to Machine Communications in Cellular Networks Hua Chao, Yu Chen, Jinsong Wu (Alcatel-Lucent Bell Labs, Shanghai, China)

Energy-Efficient Data Collection in WSN with Network Coding Stephan F. Pfletschinger, Monica Navarro, Christian Ibars (CTTC, Spain) 14:30 – 15:50 Session III: Selected Topics Peter Rost (NEC Laboratories Europe, Germany)

IoMANETs: Mobility Architecture for Wireless M2M Networks Andrew Attwood, Madjid Merabti, Omar Abuelmaatti (Liverpool John Moores University, UK)

Mobile Cloudable Applications - New Way of Distributing Mobile Tasks Into the Cloud

Sebastian Presecan (iQuest Technologies, Romania)

A Mediated Gossiping Mechanism for Large-scale Sensor Networks Frieder Ganz, Payam Barnaghi, Francois Carrez, Klaus Moessner (University of Surrey, UK)

VALUE CHAIN Scenarios for Machine to Machine ECOSYSTEM Oswald Jumira (University of Stellenbosch, South Africa)

16:10 - 16:40

Keynote Address: M2M Standardization: Status, Trends and Challenges

Jeffrey O. Smith, CTO, Numerex, USA

16:40 - 17:40

Panel Session: Technical and Business Challenges of Large Scale M2M Networks

Moderator: Rahim Tafazolli (University of Suuey, United Kingdom) Panelists: Narayan Menon (InterDigital, USA) Jeffrey O. Smith (CTO, Numerex, USA) Thierry Lestable (Sagemcom Communications, France)

17:40 – 17:50 **Closing**

WORKSHOPS (F7)

Friday, 9 December 2011 • 8:30 - 16:45 • Room: GRB 350 D/E/F

F7: 6th Workshop on Heterogeneous, Multi-Hop, Wireless and Mobile Networks 2011 (HeterWMN)

Organizers:

Waltenegus Dargie, Technische Universität Dresden, Germany Alexandre Guitton, Clermont University, France

8:00 – 9:30 Session I: Hybrid and Heterogeneous Networks Chair: Alexandre Guitton,

LIMOS CNRS, France

Efficient Zero - Knowledge Identification Based on One Way Boolean Transformations

Peter Stavroulakis (Technical University of Crete, Greece) Oleksandr P. Markovskyi (National Technical University of Ukraine, Polytechnic Institute of Kiev, Ukraine) Nikolaos G. Bardis (University of Military Education - Hellenic Army Academy, Greece) Nikolaos Doukas (Hellenic Army Academy, Greece)

A Generalized Spatial Boundary Analysis Method for Clustering/Multi-hop Hybrid Routing in Wireless Sensor Networks

Sampath Priyankara (University of Osaka, Japan) Kazuhiko Kinoshita (Osaka University, Japan) Hideki Tode (Osaka Prefecture University, Japan) Koso Murakami (Osaka University, Japan)

A Novel Tractable Framework to Analyse Heterogeneous Cellular Networks

He Wang, Mark C. Reed (Australian National University, Australia)

A New Distributed Optimization Framework for Hybrid Ad Hoc Networks

Georgios Tychogiorgos, Athanasios Gkelias, Kin K. K. Leung (Imperial College, United Kingdom) 10:00 – 12:00 Session II: Cross-layering and Optimization Chair: Djamel Djenouri, CERIST, Algeria

Estimators for RBS-Based Time Synchronization in Heterogeneous Wireless Networks Djamel Djenouri (CERIST Research Centre, Algiers, Algeria)

Fast Multichannel Switching for IEEE 802.11S Multiradio Wireless Mesh Networks

(École de Technologie Supérieure, Canada) Zbigniew Dziong (École de Technologie Supérieure, University of Quebec, Canada) Jean-Charles Gregoire (University of Quebec, INRS, Canada)

Monotonic Signed Graph Approach for Cross-layer Congestion Control in Wireless Ad Hoc Networks Hemant Kumar Rath, Rajan M A, P. Balamuralidhar (Tata Consultancy Services, India)

Cross-layer Quality of Service Based Admission Control for Web Services

Frank T. Johnsen, Trude Hafsøe, Mariann Hauge (Norwegian Defence Research Establishment, Norway) Øyvind Kolbu (University of Oslo, Norway)

Energy-Efficient Task Allocation for Distributed Applications in Wireless Sensor Networks

Virginia Pilloni, Luigi Atzori (University of Cagliari, Italy)

Energy and QoS- a New Perspective in a City Vehicular Communication Network

Hamdi Idjmayyel, Wanod Kumar, Bilal R. Qazi, Jaafar Elmirghani (University of Leeds, United Kingdom) Thierry Val, University of TOULOUSE, France

13:00 – 15:30 Session III: MIMO Cognitive Chair: Jaafar Elmirghani, University of Leeds, United Kingdom

Effect of Antenna Correlation on the Performance of MIMO Multi-User Dual Hop Relay Network Nuwan S. Ferdinand, Nandana Rajatheva, Matti Latva-aho (University of Oulu, Finland)

Energy Detector's Performance Evaluation in a Relay-Based Cognitive Radio Network: Area under the ROC Curve (AUC) Approach Shumon Alam, Oluwatobi O. Olabiyi,

Olusegun O. Odejide, Annamalai Annamalai (Prairie View A&M University, USA)

2-User Multiple Access Spatial Modulation

Nikola Serafimovski, Sinan Sinanovic, Abdelhamid Younis (University of Edinburgh, United Kingdom) Marco Di Renzo (French National Center for Scientific Research, France) Harald Haas (University of Edinburgh, United Kingdom)

On Ergodic Capacity of Cooperative Non-Regenerative Relay Networks in Rice Fading Environments

Bhuvan C. Modi, Oluwatobi O. Olabiyi, Annamalai Annamalai, Dhadesugoor R. Vaman (Priarie View A&M University, USA)

16:00 – 16:45 Session IV: Discussion on Future Heterogeneous Networks Chair: Dr Waltenegus Dargie, Dresden Technical University, Germany

Friday, 9 December 2011 • 8:30 - 17:00 • Room: GRB 351 A/B

WORKSHOPS (F8)

F8: Workshop on Rural Communications: Technologies, Applications, Strategies and Policies (RuralComm)

Organizers:

Sudhir Dixit, HP Labs India, India **Roch Glitho**, Concordia University, Canada Mehmet Ulema, Manhattan College, USA

8:30 – 9:30 Opening and Keynote Address Edward Knightly (Rice University, USA) Chair: Sudhir Dixit (HP Labs India, India)

10:00 - 11:30

Session I: The Wireless Aspects of Rural Communications Chair: Mehmet Ulema (Manhattan College, USA)

IncrEase: A Tool for Incremental Planning of Rural Fixed Broadband Wireless Access Networks

Giacomo Bernardi, Mahesh K. Marina (University of Edinburgh, United Kingdom) Francesco Talamona, Dmitry Rykovanov (NGI SpA, Italy)

Next Generation Communication Technologies: Wireless Mesh Network for Rural Connectivity

Adnan Quadri, Montasir Farhan, Kazi M. Hasan (North South University, Bangladesh) Elizabeth Ali (Amadeyr Cloud, Bangladesh) Ashir Ahmed (Kyushu University, Japan)

A Low Cost and Power Efficient TV White Space Technology Solution for Future Rural Broadband Access Networks

Malcolm Brew (Steepest Ascent Ltd, United Kingdom) Faisal Darbari, Colin McGuire, Gregour Bolton, Stephan Weiss, Robert Stewart (University of Strathclyde, United Kingdom)

13:30 – 14:00 Session II: Country Specific Issues Chair: Roch Glitho (Concordia University, Canada)

Reaching the Unreached by ICT and Social Business Ashir Ahmed (Kyushu University, Japan) 14:00 – 15:30 Session III: Backhauls for Rural Communications Chair: Mehmet Ulema (Manhattan College, USA)

Two-channel Two-transceiver IEEE 802.16 Wireless Backhaul Pey San Nancy Chai, Kah Seng Chung, King-Sun Chan (Curtin University of Technology, Australia)

LTE Relay Backhaul Design for Sparsely Populated Environments Philippe Sartori (Huawei Technologies Co., Ltd., USA) Aaron Callard (Huawei, Canada) Anthony Soong (Huawei Technologies, USA) Zhongfeng Li, Zhengwei Gong (Huawei Technologies Co. Ltd, China)

Connecting the Unconnected - Economical Constraints and Technical Requirements Towards a Back-Haul Network for Rural Areas Daniel Henkel, Sebastian Englaender (Detecon Consulting, Germany) Mathias Kretschmer, Christian Niephaus (Fraunhofer FOKUS, Germany)

16:00 - 17:00

Session IV: Local Area Networks for Rural Communications Chair: Sudhir Dixit (HP Labs India, India)

Sub 1GHz Wireless LAN Deployment Scenarios and Design Implications in Rural Areas

Stefan Aust, Tetsuya Ito (NEC Communication Systems, Ltd., Japan)

Self-Sustainable Energy Efficient Long Range WiFi Network for Rural Communities

Khairuddin Ab-Hamid, Chong Eng Tan, Sei Ping Lau (Universiti Malaysia Sarawak, Malaysia)

17:00 Closing

Friday, 9 December 2011 • 8:00 - 17:30 • Room: GRB 351 D/E

WORKSHOPS (F9)

F9: Multimedia Communications Workshop – Enabling Green Wireless Multimedia Communications

Organizers:

Jiangtao Wen, Tsinghua University, China

Fraunhofer FOKUS, Germany

Xiaoli Chu, King's College London, United Kingdom

Thomas Magedanz,

Yung-Hsiang Lu, Purdue University, USA

8:00 - 9:30**Opening and Keynote Session** Welcome Thomas Magedanz, TU Berlin, Germany

Keynote Addresses

Mobile Operator Network Decentralization: Merits, Challenges and Some Solutions Dr. Tarik Taleb.

Senior Researcher and 3GPP Standards Expert, NEC Europe Ltd, Heidelberg, Germany

State of the Art and Future of Streaming Media, Focusing on Personalisation and Social P2P Media Dr. Charalampos Z. Patrikakis,

Assistant Professor, TEI of Piraeus, Greece

Energy Aware Mobile Communications: Green Radio Techniques and Architectual **Considerations** Dr. Vasilis Friderikos, King's College London, United Kingdom

10:00 - 12:00Session I: Next Generation Network Infrastructures & Green Computing and Communications **Chair: Vasilis Friderikos**

An Integration of Semantics in Multi Criteria Decision Making for Converged Multimedia Network Management

Sajjad Ali Mushtaq, Christophe Lohr, Annie Gravey (Telecom Bretagne, France)

Evolution of the Resource Reservation Mechanisms for Machine Type Communication Over Mobile **Broadband Evolved Packet Core Architecture** Marius Corici, Jens Fiedler, Thomas Magedanz, Dragos Vingarzan (Fraunhofer FOKUS, Germany)

A Novel Architecture for Efficient Management of Multimedia-Service Clouds

Nancy Samaan (University of Ottawa, Canada)

Enhanced Subcarrier Index Modulation (SIM) OFDM Dobroslav Tsonev, Sinan Sinanovic, Harald Haas (University of Edinburgh, United Kingdom)

13:30 - 15:30

Session II: Wireless Communications Systems Chair: David Lopez-Perez

Providing Absolute Priority and Airtime Fairness in WLANs

Youngsoo Lee, Hyungho Lee, Chong-Ho Choi (Seoul National University, Korea)

Analytical Interference Models for the Downlink of a **Cellular Mobile Network**

Bjoern Almeroth, Albrecht Fehske, Gerhard Fettweis (Technische Universitat Dresden, Germany) Èrnesto Zimmermann (RadioOpt GmbH, Germany)

Distributed Resource Allocation for Femtocell Interference Coordination via Power Minimisation Akos Ladanyi

(Budapest University of Technology and Economics, Hungary) David Lopez-Perez (King's College London, United Kingdom) Alpar Juttner (University of Bedfordshire, Hungary) Xiaoli Chu (King's College London, United Kingdom) Jie Zhang (University of Sheffield, United Kingdom)

Joint Combiner and Precoding in MU-MIMO Downlink Systems with Limited Feedback and User Selection

Guanghui Li, Xin Zhang, Dacheng Yang (Beijing University of Posts and Telecommunications, China)

16:00 - 17:30

Session III: Wireless Communications Systems & Video Coding and Communications Chair: Charalampos Z. Patrikakis

The Energy Cost of Mandatory Bidirectionality in Wireless Multimedia Communication Xiaoyu Chu, Harish Sethu (Drexel University, USA)

Real-Time Unequal Error Protection for Wireless Imaging

M. Imran Igbal, Hans-Juergen Zepernick (Blekinge Institute of Technology, Sweden)

Advanced Packet Scheduling for Efficient Video Support with Limited Channel Feedback on MIMO LTE Downlink

Stanislav Nonchev, Mikko Valkama (Tampere University of Technology, Finland) Ridha Hamila (Qatar University, Qatar)

Free Admission • Food/Drinks • Door Prizes



Tuesday, 6 December 2011 • 17:30 - 19:30 • Room 310 C / F

IEEE Graduates Of the Last Decade (GOLD) Presents

Life with IEEE after graduation and... Panel topic: Unveil the Myth of IEEE Journals: Meet the Editor-in-Chiefs

GOLD Speakers / Panel Chairs:

Kheng Swee Goh R5 GOLD Coordinator Jingxian Wu Comsoc GOLD Rep



Sarah Kate Wilson Editor-in-Chief IEEE Communications Letters

PANEL SPEAKERS



Chengshan Xiao Editor-in-Chief IEEE Transactions on Wireless Communications



Michele Zorzi Editor-in-Chief IEEE Transactions on Communications

Discover the world of IEEE after graduation through IEEE GOLD

and learn what we do (both for work and fun... mostly fun)!

After that, our panel speakers will talk about the operations and decision processes of IEEE journals; and how to write a good IEEE journal paper. You also get to meet face-to-face with the Editor-in-Chiefs (EICs) of major IEEE Communication Society (ComSoc) Journals and network with other GOLD members in the event. The EICs will discuss topics such as the scope of the journals, the editorial works, publication policies, publication statistics, and how to write a good journal paper, etc, followed by an interactive Q/A session.

Social & Networking/GOLD Slideshow

is between 17:30 - 18:00, main presentation starts at 18:00.

The panel is co-sponsored by IEEE GOLD, IEEE ComSoc and IEEE GLOBECOM 2011.

Energizing Global Communications

Welcome Reception

Awards

Luncheon

Monday, 5 December 2011 • 19:30 – 22:00 CONVENTION CENTER – LEVEL 3 – GRAND BALLROOM

SOCIAL EVENTS

The welcome reception with a western theme is your chance to connect with peers, interact with exhibitors while giving the organizing committee's a chance to celebrate your arrival at IEEE GLOBECOM 2011. All registrants are welcome to attend.



Tuesday, 6 December 2011 • 12:00 – 13:30 Hilton Americas – Lanier Grand Ballroom (4th Floor)

Join us as we celebrate and honor fellow members of the IEEE Communications Society with a myriad awards for their various contributions to the society. The Awards Luncheon is included in full registrations. Additional awards luncheon tickets available for purchase at the registration desk.





Thursday, 8 December 2011 • 19:00 - 22:00 Hilton Americas – Lanier Grand Ballroom (4th Floor)

The banquet is included in full registrations. Additional banquet tickets available for purchase at the registration desk. Join us for an evening of daring acrobatics and a majestic aerialist sure to mesmerize you.

IEEE Global Communications Conference

Our technical committees define and implement the technical directions of the Society. As a fundamental element of the Society, all members are invited and encouraged to participate in one or more of its technical committees. Throughout the year, these committees also play a major role in determining which events (conferences, workshops, etc.) are technically co-sponsored by ComSoc. Many of these committees - networks of professionals with common interests in communications - will be meeting at IEEE GLOBECOM 2011.

Enclosed in your registration bag is a committee meetings schedule, which includes technical committees. Schedules will also be available at the registration desk. We look forward to your participation.

Ad Hoc & Sensor Networks

The Committee will serve as ComSoc's focal point in the area of wireless ad hoc and sensor networks technologies, stimulating and organizing leading-edge wireless ad hoc and sensor networks symposia, workshops, sessions and tutorials at ComSoc conferences. It will also serve as a proactive facilitator in the dissemination of evolving wireless ad hoc and sensor networking standards.

Cognitive Networks

The goal of TCCN is to provide a platform for its members in particular, and the cognitive networking research, development, policy making and standardization community in general, to interact and exchange technical ideas to identify major challenges and also derive solutions in the development of cognitive networking technologies.

Communications & Information Security

This committee will promote security of all types of communication networks and forms of information transported by them and through them, end to end. Our security interests start from the network physical layer and they end on the end user application layer. The committee will support conferences, symposia, technical sessions, publications, etc., where information is exchanged within the scope of interest of the TC.

Communications Quality and Reliability

This committee focuses on and advocates worldwide communications quality and reliability on behalf of, and within, the Communications Society. CQR serves as the catalyst for global awareness and the exchange of information relative to technical and management-related aspects of communications quality and reliability.

Communications Software

The mission of this committee is to advance the state of the art in communications software and its various aspects and applications. It serves as the major forum for discussion among communications software professionals in both of the communications and computer industries.

Communications Switching & Routing

The objective of this committee is to sponsor publications, conference technical sessions, workshops and topical meetings and discussions in the theory and applications of information switching. Specific areas include, but are not limited to theory, architecture, traffic, performance, signaling protocol and networks, call and mobility control, services and features, planning, economic factors and management of switching systems.

Communications Systems Integration & Modeling

This committee is concerned with the systems disciplines and modeling tools that facilitate the integration of information-transport equipment, subsystems, and networks into communications systems. The committee particularly addresses computer-aided modeling of integrated subsystems to answer architectural and performance questions.

Communication Theory

This committee sponsors conference sessions, workshops, tutorials, as well as promoting and reviewing papers in the broad area of communication theory, with emphasis on applications to practical systems. The technical content of these sessions and papers focuses on the analytical and theoretical aspects of many diverse areas that include modulation, coding, synchronization, equalization, signal processing and neural networks, transmission over all media, source and channel coding, spread spectrum and multiple access, data communications, and communication networks.

Data Storage

This committee (DS) promotes advances in the state of the art of coding and signal processing to enhance digital data storage systems, in order to achieve high storage densities, fast access, and low error rates. The committee is also interested in VLSI implementations of read/write channel electronics.

Enterprise Networking

This Committee focuses on "end-to-end" solutions, addressing topics such as re-engineering of business processes around computers and communications, end-to-end network design and integration of subsystems, interconnection and interoperability of all components of an enterprise network, including Local/Wide/Global Area Networks, networked applications and services. It addresses the needs of vertical markets, such as healthcare, finance and telecommunications with respect to functional (e.g., VPNs and ERP) as well as non-functional (e.g., security and management) requirements.

High-Speed Networking

This committee promotes interest within and outside the Communications Society on the emerging applications and architectural solutions for high-speed networks. A primary goal is to serve as a focal point for activities in high performance networking by participating in and sponsoring conferences and workshops; encouraging publications, fostering discussion; and providing education on the utility of high-speed networks and possible architectural alternatives required for optimum infrastructure.

Information Infrastructure

This committee identifies and exchanges knowledge on issues related to National Information Infrastructure (NII) and Global Information Infrastructure (GII). It stimulates interdisciplinary conferences, sessions, workshops, publications, and standards activities, and offers leadership and support to the Communications Society in furthering its own use of the national and global information infrastructures.

Internet

Energizing Global Communications

This committee is a joint committee of the Internet Society and the IEEE Communications Society for stimulating interdisciplinary exchanges and applications of state of the art communications and related technologies to Internet infrastructure and services. The committee contributes to the emergence of an ubiquitous, multimedia, and high-performance Internet serving large segments of the world's population.

Multimedia Communications

This committee examines systems, applications, services and techniques in which two or more media are used in the same session. These media include, but are not restricted to, voice, video, image, music, data, and executable code. The scope of the committee includes conversational, presentational, and transactional applications and the underlying networking systems to support them.

Network Operations & Management

This committee (CNOM) focuses on network and service operations and management. It encourages the exchange of information on the operational and technical management aspects of public and private networks for voice, data, image, and video, and organizes and sponsors publications and discussions of these topics. Specific technical interests include automation of network operations, customer network management and control, knowledge-based technologies, real-time management, and end-to-end management across several jurisdictional boundaries.

Optical Networking

The committee will serve as ComSoc's focal point in the area of optical networking technologies and play an active role in stimulating/organizing leading-edge optical networking symposia, workshops, sessions and tutorials serving OFC and other premier M&C venues. ONTC will also serve as a proactive facilitator in the dissemination of evolving optical networking standards by working closely with standards forums such as OIF, IETF, and ITU/T1.

Power Line Communications

The Committee sponsors conference sessions, special issues, workshops, tutorials, and promotes the dissemination of technical information in the broad area of communications over power lines. Our primary goal is to serve as a focal point for all activities in the area of power line communications.

Radio Communications

This committee sponsors and promotes technical papers, workshops, and tutorials on the engineering aspects of communications systems, equipment, and operation in which electromagnetic transmission through space near the earth's surface is the dominant factor. Specifically included are systems in which the transmission follows the surface or takes place within the atmosphere of the earth. Technologies are considered for point-to-point, point to multipoint, mobile radio, and personal communications are outside the scope of the Committee.

Satellite & Space Communications

This committee facilitates technical exchange in the field of satellite and space communications and maintains a keen interest in the development and maintenance of standards in this area. It explores the evolution of new satellite and space-based systems and the application of new and emerging technologies.

Signal Processing & Communications Electronics

This committee (SPCE) sponsors papers, participates in the organization of conferences, and promotes technical workshops on those aspects of communications that pertain to the innovation, development and application of algorithms and electronic and photonic devices or subsystems for generation, processing, storage, transmission, recovery, and presentation of communications signals. In so doing, the committee also has as a goal the professional development of committee members and other practitioners that work in the above areas.

Tactical Communications & Operations

The mission of this committee is to sponsor conferences, workshops, technical sessions, publications, professional meetings, and standards on all aspects of tactical communications and operational situation management in military, homeland defense, and disaster recovery application areas. It provides a forum for members to exchange ideas, techniques, and applications, and share experience among researchers and engineers. Its areas of interest include military communication infrastructures including tactical radio, landline, mobile and space communications; advanced battlespace command and control models, including, C4ISR, net-centric operations, asymmetric warfare, special operations command; surveillance, monitoring and control, including target identification, tracking and signal intelligence; homeland security management infrastructures, models, and architectures; disaster rescue, recovery and support missions; operational situation management, including situation awareness, decision support, information fusion, situation control, situation prediction, and situation management architectures and engineering solutions; semantic information processing, including semantic modeling, ontologies, knowledge representation, semantic modeling languages, tools, and platforms.

Transmission, Access, & Optical Systems

This committee sponsors and organizes papers, conference sessions, workshops and standards development relating to both optical and metallic guided media transmission and access systems for the transport of speech, data, and visual information of any bandwidth. Specific areas of interest include: testing and performance of analog and digitally transmitted signals; systems and equipment for subscriber access over fiber, coaxial cable, and twisted copper pairs; analog and digital subscriber lines over wires and interfaces to wireless media; inductive coordination and electrical protection of wired media; network synchronization; and development of IEEE-oriented standards.

Wireless Communications

EEE Global Communications Conference

The mission of the committee TCPC is to sponsor publications, conferences, technical sessions, workshops, and other information exchanges on architectures, applications, systems, terminals and technologies to provide personal, location-independent communication and computing in voice, data and visual media. Its areas of interest include techniques for achieving portability, ubiquity and transparency using wireless networks ranging from microcellular to satellite, and wired networks ranging from narrow to broadband.

IEEE GLOBECOM 2011 Badges and Tickets

IEEE GLOBECOM 2011 Badges must be worn at all times and are necessary for entrance into all IEEE GLOBECOM sessions. Tickets are required for the Luncheon Awards and the Conference Banquet.

Conference Location

The Hilton Americas-Houston is the headquarters hotel for IEEE GLOBECOM 2011 conference.

The hotel is conveniently located in the heart of downtown Houston, between the Toyota Center and Minute Maid Park. It is also directly connected to the George R. Brown Convention Center and across the street from Discovery Green Park and the Pavilions.

Registration

Conference Registration will take place at the George R. Brown Convention Center in the Grand Ballroom on Level 3. All attendees and accompanying guests must register and receive a conference badge in order to participate in conference activities.

Photo ID is required. Individuals are responsible for picking up their own Registration packages. No attendee will be allowed to pick up bags for their colleagues.

Registration / Meeting Information Desk Hours

Sunday, 4 December	15:00 - 18:00
Monday, 5 December	7:00 - 19:00
Tuesday, 6 December	7:00 - 18:00
Wednesday, 7 December	7:30 – 16:00
Thursday, 8 December	7:30 – 16:00
Friday, 9 December	7:00 - 14:00

Food and Beverages

Workshop attendees receive a complimentary lunch on the day of the workshop. For the Welcome Reception, you will also receive complimentary drink ticket.

Internet Café / Wireless Access

IEEE GLOBECOM 2011 will offer free wireless access. Internet stations are located in the Grand Ballroom of the Convention Center and will be open during registration hours. Additionally, sleeping rooms in the Hilton Americas-Houston include complimentary internet access.

Local Information

Average temperature in December: 64.0 °F (High) – 43.0 °F (Low) Standard Time Zone: Central Time Zone

Here are some examples: restaurants: 15% of bill, unless a gratuity is already added to the bill; bartenders: 10%-15%; bellhops: at least \$3.50 per bag or \$5-\$8 for a lot of baggage; taxi drivers: 15% of the fare; airport attendants: \$3.00 per bag or \$5-\$8 for a lot of baggage; valet parking attendants: \$2.

SOCIAL EVENTS

Welcome Reception/Exhibit Opening

Monday, 5 December 2011 • 19:30 – 22:00 Grand Ballroom/Convention Center/Level 3

Join us as we kick off the IEEE GLOBECOM 2011 Expo. Interact with exhibitors amidst the Exhibits at the Grand Ballroom in the Convention Center. This event is included with the conference registration fee. Accompanying guests are welcome to attend.

Awards Luncheon

Tuesday, 6 December 2011 • 12:00 – 13:30 Grand Ballroom/Hilton Americas Hotel/Level 4

Celebrate with your colleagues at this biannual event honoring the achievements of the IEEE and IEEE Communications Society members. This event is included with the full conference registration. Additional tickets are available. Check onsite with the registration desk.

Conference Banquet

Wednesday, 7 December 2011 • 19:00 – 22:00 Grand Ballroom/Hilton Americas Hotel/Level 4

Join the IEEE GLOBECOM 2011 Committee for a relaxing evening of fine dining and entertainment at Grand Ballroom/Hilton Americas Hotel. This event is included with the full conference registration. Additional tickets are available. Check onsite with the registration desk.

IEEE GLOBECOM/EXPO 2011

IEEE GLOBECOM/EXPO 2011 is located at the George R. Brown Convention Center in the Grand Ballroom.

EXPO Hall Hours:

Monday, 5 December	19:30 – 22:00
	(Welcome Reception)
Tuesday, 6 December	9:30 - 17:00
Wednesday, 7 December	r 9:30 – 17:00
Thursday, 8 December	9:30 - 17:00

Coffee Breaks

Coffee breaks will be held in the George R. Brown Convention Center in the Grand Ballroom on Tuesday, 6 December from 9:30 - 10:00 and 15:30 - 16:00, Wednesday, 7 December from 10:00 - 10:30 and 15:30 - 16:00 and Thursday, 8 December from 10:00 - 10:30 and 15:30 - 16:00.

Don't miss the opportunity to network and win special prizes. Must be present to win.

Companion Hospitality

Companions are invited to begin their daily activities in the Companion Hospitality room with coffee and a pastry. Check on-site for exact room location. Meet your friends prior to one of the daily tours or to make your plans for the day.

Speaker Ready Room

Room GRB 362B in the convention center is the Speaker Ready Room. The room is available for authors to rehearse Monday – Friday from 7:00 - 17:00 for any presenters, who wish to rehearse and prepare for their presentations.

Student Travel Grants

Student Travel Grant Recipients can pick up their certificates at the Registration Desk during registration hours.

Business Center

The Business Center is open 24 hours, self service via room keycard. For full service, the office operates during the following hours: Monday, 7:00 – 19:00; Tuesday, 7:00 – 19:00; Wednesday, 7:00 – 19:00; Thursday, 7:00 – 19:00; Friday, 7:00 – 19:00; Saturday, 10:00 – 15:00; Sunday, 10:00 – 15:00. Additionally, there is a full service UPS Store is onsite.

Language

All conference sessions and publications will be in English.

Cell Phones/IPDAs/Laptops/Beepers

Please be cognizant and respectful of your fellow conference attendees and speakers. During sessions, please lower the volume on your electronic devices and put your phones on vibrate mode.

Evaluation Form

You will receive an email after the conference for the overall evaluation of the event. Please take the time to fill out an Evaluation Form. We value your feedback.

Tutorial and Workshop Materials

Tutorial evaluations will be available via web link. Workshop evaluation forms will be paper and handed out afterwards. We value your feedback. Please be sure to take the time to fill out the forms.

What can I do in Houston?

Houston is America's fourth largest city and with this accolade come numerous quality tourist attractions, with the Space Center Houston being number one for its excellent activities and out-of-this-world exhibits.

Other major tourist attractions in Houston can be found in the Hermann Park area of downtown Houston, which covers a massive area and has several worthwhile attractions, including numerous museums, the Downtown Aquarium and Houston Zoo.

Tours and activities are being coordinated by Cosmo Cool Concepts. For additional information, visit http://www.ieee-globecom.org/tours.html.

You can also contact Kimberly Shipman at kshipman@cosmocoolconcepts.com.

Additionally, the concierge desk at the Hilton Americas can provide you with maps and brochures.

HILTON AMERICAS-HOUSTON (Committee Meetings, Awards Lunch & Conference Banquet)



Meeting/Function Rooms IIII Escalator Elevator Coat Room

IEEE Global Communications Conference

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HOUSTON CONVENTION CENTER • LEVEL 3 (Sessions, EXPO & Welcome Reception)



LEVEL 3

EXHIBITORS

AT&T Booth: 7 Website: www.att.com

AT&T Inc. (NYSE:T) is a premier communications holding company and one of the most honored companies in the world. Its subsidiaries and affiliates – AT&T operating companies – are the providers of AT&T services in the United States and around the world. With a powerful array of network resources that includes the nation's fastest mobile broadband network, AT&T is a leading provider of wireless, Wi-Fi, high speed Internet, voice and cloud-based services. A leader in mobile broadband and emerging 4G capabilities, AT&T also offers the best wireless coverage worldwide of any U.S. carrier, offering the most wireless phones that work in the most countries. It also offers advanced TV services under the AT&T U-verse® and AT&T | DIRECTV brands. The company's suite of IP-based business communications services is one of the most advanced in the world. In domestic markets, AT&T Advertising Solutions and AT&T Interactive are known for their leadership in local search and advertising.

Additional information about AT&T Inc. and the products and services provided by AT&T subsidiaries and affiliates is available at http://www.att.com.

Cambridge University Press Booth: 1 Website: www.cambridge.org/us

Cambridge University Press is a leading publisher in telecommunications, producing authoritative books for students, researchers, and practitioners. Visit our booth to see a range of new titles including 'Network Information Theory' by A. El Gamal and Y.-H. Kim, 'Information Theory' by I. Csiszar and J. Korner, 'Software Receiver Design' by C. R. Johnson Jr., W. Sethares, and A. Klein, 'Applied Digital Signal Processing' by D. Manolakis and V. Ingle, 'Cognitive Dynamic Systems' by S. Haykin, 'Essentials of LTE and LTE-A' by A. Ghosh and R. Ratasuk., and 'Game Theory in Wireless and Communication Networks' by Z. Han et al.

Disneyland Resort

Booth: IÉEE Pavilion Table #2 Website: www.disnevland.disnev.go.com/disnevland-hotel/

The site for GLOBECOM 2012 now offers more luxurious rooms, new pools and waterslides, themed dining and more. This classic hotel has been given a contemporary twist. Modern, sophisticated features have been crafted for even more comfort and convenience. New stylish furniture has been added, world-class linens adorn each bed and, of course, magical Disney touches enchant each room. Make your plans now to join us next year!

Electronics and Telecommunications Research Institute (ERTI) Booth: 10

Website: www.etri.re.kr/eng/

ETRI is the biggest national ICT research institute in Korea. Established in 1976, ETRI has been playing the major role for the development of ICT in Korea. ETRI's major achievements are; Dynamic Randum Access Memory (DRAM), Code Division Multiple Access(CDMA), Digital Multimedia Broadcasting(DMB), Wireless Broadband(WiBro), and so on. ETRI is leading R&D activities under the goal for the "Smart & Green Technology" which contributes to human well being.

ETRI will continue to work for the future of Korea in creative and innovative ways, and make Korea a global IT convergence leader by developing 3D contents broadcasting services, converged internet services and IT convergence industries.

The Internet Research Laboratory of ETRI leads in the areas of cellular/short range mobile communications, next generation Internet infrastructure, and the convergence network technologies that will be applied to wired-wireless integration and next generation Internet technologies. With the aim to help people realize a fully mobile lifestyle, the Internet Research Laboratory woks to enhance the quality of life by providing communications services that are capable of high-speed wired/wireless communication, anytime and anywhere.

To realize a future society where knowledge expands through IT convergence, the laboratory conducts research into mobile communications technology, optical fiber internet infrastructure technology, and service platform technology, along with the technology for future networking.

Representative fields of research relate to the source technology of each area, such as next generation Internet infrastructure and service technology, 4th generation mobile communications technology (LTE-Advanced, Mobile WiMAX), high-speed short range wireless communications technology, internet-based convergence network technology, packet-optic convergence technology and national defense communications. The laboratory has achieved some of the world's most successful R&D accomplishments, including CDMA, WiBro and QoS Router, driving the advancement of the national information and communications industry.

Fujitsu

Booth: 6

Website: www.us.fujitsu.com/telecom

Fujitsu Network Communications Inc., headquartered in Richardson, Texas, is an innovator in Connection-oriented Ethernet and optical transport technologies. A market leader in packet optical networking solutions, WDM and SONET, Fujitsu offers a broad portfolio of multi-vendor network services as well as end-to-end solutions for design, implementation, migration, support and management of optical networks. The only major optical networking vendor to manufacture its own equipment in North America, Fujitsu has over 450,000 network elements deployed by major North America carriers across the US, Canada, Europe, and Asia. For more information, please see: http://us.fujitsu.com/telecom.

IEEE GLOBECOM 2012

Booth: IEEE Pavilion Table #1 Website: www.ieee-globecom.org/2012

The Magic of Global Connectivity

The 2012 IEEE Global Communications Conference (GLOBECOM) will be held in beautiful Southern California right in the heart of Disneyland at the DISNEYLAND HOTEL December 3-7, 2012. Please join us for a most informative conference.

IEEE GLOBECOM 2012 will offer cutting edge communications technology symposia, forums, panel discussions, tutorials, workshops, industry exhibits and renowned industry CEOs & CTOs in panel sessions and keynote speeches.

Come to the Anaheim IEEE GLOBECOM 2012 to learn but come also to enjoy the world famous Disneyland Resort. And be sure to bring your family to help you enjoy the wonder and magic of Disneyland and Southern California. We look forward to welcoming you.

IEEE GLOBECOM 2013 Booth: IEEE Pavilion Table # 3

EEE Global Communications Conference

Come to Atlanta, Georgia for IEEE GLOBECOM 2013!

The 2013 IEEE Global Communications Conference (GLOBECOM) will be held in Atlanta, GA at the Hilton Hotel, in the heart of downtown's finest eating and tourism establishments. Please join us December 9-13, 2013 for an unforgettable conference experience.

IEEE GLOBECOM 2013 will offer cutting edge communications technology symposia, forums, panel discussions, tutorials, workshops, industry exhibits and renowned industry CEOs & CTOs in panel sessions and keynote speeches. And be sure to schedule some time for yourself and your loved ones to experience many of the nearby family-friendly attractions, such as the largest indoor aquarium in the US, numerous museums for art, history, and science (and Coca Cola, of course!), as well as one of the finest restaurant scenes in North America.

EXHIBITORS

IEEE GLOBECOM 2014

Booth: IEEE Pavilion Table #4

Website:

http://www.ieee.org/conferences_events/conferences/conferencedetails/i ndex.html?Conf_ID=18177

Austin is proud to be hosting The IEEE Communications Societies' IEEE GLOBECOM Conference in the heart of Silicon Hills (technology corridor of the Southwest), from Dec ember 8-12, 2014 at the Austin Hilton Hotel Complex. IEEE GLOBECOM 2014 will offer the latest technology research for the technical community along with an innovative program for industry management and engineers. Austin has a great music scene, nightlife, weather, and the conference will be held right in the heart of the most vibrant downtown in the southern United States, and one of America's fastest growing, youngest, and most desirable cities.

We look forward to seeing you in Austin.

IEEE ICC 2012

Booth: IEEE Pavilion Table #7 Website: www.ieee-icc.org/2012

The IEEE Ottawa Section is proud to host IEEE ICC 2012 Conference, Industry Forums and Exhibition from June 10-15, 2012 at the Ottawa Convention Centre which is located on the scenic banks of the Rideau Canal and embedded in the cultural center of Ottawa, the beautiful capital city of Canada.

IEEE ICC 2012 is expected to attract and bring together thousands of the world's industry leaders, scientists, academics, engineering professionals, policy makers, and government officials to the presentation of nearly 1500 keynotes, business panels, technical papers, workshops and tutorials held under the theme of the conference, "CONNECT – COMMUNICATE - COLLABORATE." For participants, it promises to stimulate the scientific exchange of ideas, the identification of future trends in communications, and the illumination of business opportunities.

The IEEE ICC 2012 conference has a balance between the industry and academia participation. The IEEE ICC 2012 conference has also been expanded to include the new 16 Industry Forums (recommended by industry). The conference also features 12 Technical Symposia where hundreds of high quality accepted technical papers will be presented. Therefore, the focus of IEEE ICC 2012 is to bring the industry and academia to meet and discuss the trends of the communications market.

The Ottawa region is an ideal location for IEEE ICC 2012. It is not only the hub of the Canadian government, but it is also a core Canadian centre for high technology and referred to as Silicon Valley North. There are more than 1800 companies in the area of software, telecommunications, photonics, semiconductors, defense and security, wireless technology, and many others. It boasts the highest level of R&D spending per capita in Canada.

Come early and enjoy your stay in the national capital and Canada's hub of technology innovation and creativity. Visit www.ieee-icc.org/2012 for more details.

IEEE ICC 2013 Booth: IEEE Pavilion Table #8 Website: www.ieee-icc.org/2013

IEEE ICC 2013 will be held in the charming city of Budapest, Hungary during June 9-13, 2013. The conference will be hosted in three adjacent five-star hotels in the very heart of the city, on the banks of the river Danube. The hotels offer magnificent panoramic views across the river, the Gellert Hill and the Royal Castle District, part of the UNESCO World Heritage. We much look forward to an enlightening and enjoyable event with you!

Institution of Engineering and Technology Booth: 5 Website: www.theiet.org

The IET is one of the world's leading professional societies for the engineering and technology community, with more than 150,000 members in 127 countries and offices in Europe, North America and Asia-Pacific. The IET provides a global knowledge network to facilitate the exchange of ideas and promote the positive role of science, engineering and technology in the world.

IET books, journals and the Inspec database provide a wealth of research and information in the areas of engineering and technology. The portfolio of research and letters journals, to include IET Networks and IET Wireless Sensor Systems, are available online through the IET Digital Library together with conference proceedings, seminar digests and magazines. The IET's professional and academic book program spans 21 specialist disciplines, available in print and as e-Books. The IET's Inspec database contains over 12 million bibliographic abstracts and other literature in the fields of science and technology.

For more information, visit www.theiet.org.

NTT DOCOMO, INC.

Booth: 12 Website: www.nttdocomo.com/

NTT DOCOMO is Japan's premier provider of leading-edge mobile voice, data and multimedia services. With more than 58 million customers in Japan, the company is one of the world's largest mobile communications operators. NTT DOCOMO has been actively involved in the 3rd Generation Partnership Project (3GPP) standardization and launched a commercial Long-Term Evolution (LTE) service in December 2010 under the new service brand of "Xi" (crossy). In 3GPP standardization, there have been efforts towards establishing the enhanced LTE radio interface called LTE-Advanced (LTE Release 10 and beyond) and specifications for LTE Release 10 were finalized.

In our booth, we will show our activities towards LTE-Advanced. We will show our Indoor/outdoor field experiments of LTE-Advanced key technologies such as carrier aggregation and enhanced MIMO based on Release 10 LTE specification, and also show our visual demonstration of Release 10 LTE HetNet (Heterogeneous Network) ICIC (Inter-Cell Interference Coordination) based on real-time system simulation.

Prairie View A&M University's Roy G. Perry College of Engineering Booth: 9

Website: www.pvamu.edu

Energizing Global Communications

Prairie View A&M University's Roy G. Perry College of Engineering has a rich and well established legacy of producing outstanding engineers in the nation. The ECE Department established graduate programs (M.E and Ph.D.) in Electrical Engineering with funded research in the department and the Centers of Excellence:

 ARO Center of Excellence for Battlefield Communications Research focuses on network architectures; tracking of friendly & malicious nodes in MANET, video and voice transport with QoS; CR/SDR design.

 The Center of Excellence for Communications Systems Technology Research focuses on wavelet transforms and compressed sensing/compressive sampling Systems for video, DSP Solutions, mixed signal systems, communication control and broadband systems.

 The Center for Radiation Engineering and Science for Space Exploration focuses on supporting the international space Station and mars missions with research on radiation protection and the effects of space radiation on electronics and bio systems.

RANPLAN Wireless Network Design Ltd.

Booth: 11 Website: www.ranplan.co.uk

RANPLAN Wireless Network Design Ltd. is a wireless technology company that produces the world leading in-building wireless network planning and optimization (P&O) software tool – iBuildNet®, a world leading radio propagation tool Ranplan Radiowave Propagation Simulator (RRPS) and provides radio access network (RAN) planning and optimization solutions, consulting and training services.

RANPLAN was founded in 2006 by a group of leading academics in RAN planning and optimization. It is headquartered in the UK with a few strong partnerships around the world. At the end of Sept. 2011, RANPLAN released its world leading in-building network design and optimization tool - iBuildNet®, which features superior 3D building modeling, fast and accurate 3D ray-tracing propagation engine, measurement data analysis, automatic Wi-Fi AP location optimization, automatic antenna type and power optimization, automatic channel assignment and joint indoor-outdoor heterogeneous network planning and optimization.

The mission of iBuildNet® is to turn in-building wireless network design and optimization into an engineering art. It can be used by mobile operators, telecom vendors and consulting firms to design and optimize all types of indoor and joint indoor-outdoor networks based on BBU+RRU, picocells, Distributed Antenna System (DAS), repeaters, radiating cables and femtocells. Its streamlined and automated processes revolutionize the way in-building networks are designed and deployed, providing comprehensive information on all of projects. It improves communication and collaboration across different organizations and departments, resulting in lower CAPEX/OPEX, greater productivity and return on investment.

iBuildNet® is well suited to study femtocell and HetNet deployments. It can also be used to study smart building, M2M communications and smart meter deployment by both industry and academia.

For more information about RANPLAN and the services and products it provides, please visit www.ranplan.co.uk.

Springer Booth: 2 Website: www.springer.com

Springer is a leading publisher of books, journals and electronic products. Visit us at booth# 2 to purchase our latest publications at a 20% conference discount. Our publishers are available to answer any questions you may have. Visit springer.com/engineering for more information on our latest products.

IEEE Women in Engineering (WIE) Booth: IEEE Pavilion Table #6 Website: www.ieee.org/women

The mission of IEEE WIE is to facilitate the recruitment and retention of women in technical disciplines globally. IEEE WIE envisions a vibrant community of IEEE women and men collectively using their diverse talents to innovate for the benefit of humanity. Goals include facilitating the development of programs and activities that promote the entry into and retention of women in engineering programs and enhancing the career advancement of women in the profession.

University of Houston

Booth: University Pavilion Table #1 Website: www.tech.uh.edu

The College of Technology at the University of Houston has been providing the highest quality education for students in the practical fields of engineering technology since the early 1940s.

We offer a fully accredited Bachelor of Science degree in Computer Engineering Technology and a Master of Science in Engineering Technology with a track in Network Communications. The Master's program provides an advanced knowledge of communication between and within computer networks, including data processing in the network environment, network operations software and operating systems and communication systems. The program emphasizes the following topics: network security, network management and project management. Graduates are prepared to be advanced level technologists in computer applications in industry and technology instructors for educational institutions offering baccalaureate and associate degree programs.

We are 3,000 people learning to make the world run - better, faster, smarter. And we want you to join us-http://www.tech.uh.edu/information/students/. We have a very ethnically diverse student body of over 3,000 students, reflecting the ethnically diverse nature of the University of Houston itself, which is ranked among the most ethnically diverse universities in the United States. Visit us at http://www.tech.uh.edu/college/explore-our-college/.

Wiley-Blackwell

Booth: 4 Website: www.wiley.com

Wiley's Scientific, Technical, Medical, and Scholarly (STMS) business, also known as Wiley-Blackwell, serves the world's research and scholarly communities, and is the largest publisher for professional and scholarly societies. Wiley-Blackwell's programs encompass journals, books, major reference works, databases, and laboratory manuals, offered in print and electronically. Through Wiley Online Library, we provide online access to a broad range of STMS content: over 4 million articles from 1,500 journals, 9,000+ books, and many reference works and databases.

EXHIBITOR FLOOR PLAN

IEEE GLOBECOM 5-9 DECEMBER 2011



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AT&T proudly supports IEEE Globecom 2011 Global Communications Conference, Exhibition, and Industry Forum.



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Technology is one factor that makes us an outstanding business partner. Another is our people and the pride they take in understanding and responding to customer needs. It's the unique combination of the two that makes Fujitsu a market leader.

Together Fujitsu people and Fujitsu packet optical, WDM and SONET technology offer you a complete solution for design, implementation, migration, support, and management of next-generation communications networks.



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INVITATION FROM THE FUTURE

Where: The Future. Located at T.um, SK Telecom head office building, Seoul, Korea

We invite you to the future, realized through the most advanced ICT. Here at T.um, people from 140 countries have witnessed the future. See how SK Telecom's future technology breaks mobile communications boundaries. See why SK Telecom is known as the leader in ICT. SK Telecom creates a happier future for everyone.



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IEEE ICC 2012 covers the entire range of communications technologies, offering in-depth information on the latest developments in voice, data, image, and multimedia.

KEYNOTES SPEAKERS

JUNE 10-15, 2012 • OTTAWA, CANADA

Technical Symposia focus on technological trends in recent communication research and development from academia to the industrial laboratories throughout the world.

Tutorials and Workshops address emerging technical and business issues in communications technologies.

Industry Forums feature high-level executives addressing challenges, opportunities and the future of the Industry.

> Exhibition showcases the latest technologies, applications and services.



DARREN ENTWISTLE CEO & President, TELUS



CRAIG FARRELL CTO, Global Telecom Industry IBM







MARCUS WELDON Alcatel-Lucent



PHIL WINTERBOTTOM CTO, Ericsson



VADIM LANDER Chief Identity Architect,



MATT BROSS



BASIL ALWAN CTO, President, Alcatel-Lucent's IP Division



JAMES SEGIL President, EdgeCast Networks

Venue **IEEE ICC 2012 will** take place at the **Ottawa Convention Centre.**



Visit www.ieee-icc.org for conference updates.

IEEE 2012 INDUSTRY FORUM & EXHIBITION DECEMBER 3-7, 2012

DISNEYLAND. HOTEL ANAHEIM, CALIFORNIA USA

CALL FOR PAPERS AND PROPOSALS

IEEE GLOBECOM 2012 will feature a comprehensive technical program including 12 Symposia and a number of Tutorials and Workshops. IEEE GLOBECOM 2012 will also include an attractive industrial and forum program featuring keynote speakers, various Business, Technology and Industry for a and vendor exhibits. Prospective authors are invited to submit original technical papers for presentation at the conference and publication in the Proceedings. Proposals for Tutorials, Workshops, and Fora are also invited. Visit the IEEE GLOBECOM 2012 website, http://www.ieee-globecom.org/2012, for details and submission information.

TECHNICAL SYMPOSIA

— IEEE GLOBECOM 2012 will feature the following 12 technical symposia.

Symposium on Selected Areas in Communications Track: Access Systems and Networks

Ravi Subrahmanyan, Immedia Semiconductor, USA

Track: Power Line Communications and SmartGrid Moises Ribeiro, Federal University of Juiz de Fora, Brazil

Track: Green Networks and Communication Systems Michael Devetsikiotis, North Carolina State Univ., USA

Track: Data Storage Zining Wu, Marvell, USA

Track: Satellite & Space Communication Hiromitsu Wakana. National Institute of Information and Communications Technology (NICT), Japan

Track: Tactical Communications and Situation Management

Kenneth Young, Telcordia, USA

Ad Hoc and Sensor Networking Symposium

Nidal Nasser, Guelph University, Canada Stefano Basagni, Northeastern University, USA Lynda Mokdad, University of Paris-Est, Créteil, France Yacine Ghamri-Doudane, ENSIIE & CNRS LIGM Lab, France

Jianping Pan, University of Victoria, Canada

Communication and Information System Security Symposium

Wenjing Lou, Virginia Polytechnic Institute and State University, USA

Peter Mueller, IBM Zurich Research Laboratory, Switzerland

Shiguo Lian, France Telecom R&D, China

INDUSTRIAL FORUM AND EXHIBITION PROGRAM

IEEE GLOBECOM 2012 will feature several prominent keynote speakers, major business and technology fora, and a large number of vendor exhibits. Submit your proposals to the IF&E Chair Narisa Chu at narisa.chu@ieee.org

TUTORIALS

Proposals are invited for half- or full-day tutorials in communication and networking topics. Instruction about tutorial proposals will be available on the web. For enquiries, please contact the Tutorials Co-Chairs, niuzhs@tsinghua.edu.cn, xun.luo@ieee.org.

Communication Theory Symposium Erik Perrins, University of Kansas, USA Cheng Li, Memorial University of Newfoundland. Canada

Hyundong Shin, Kyung Hee University, Korea Communications QoS, Reliability and

Modelling Symposium Fabrizio Granelli, University of Trento, Italy Chonggang Wang, Interdigital, USA Tetsuya Yokotani, Mitsubishi Electric Corporation, Japan

Communications Software, Services and Multimedia Symposium

Shiwen Mao, Auburn University, USA Gene Cheung, National Institute of Informatics, Japan Brice Augustin, University of Paris, France Lisandro Zambenedetti Granville, UFRGS, Brazil

Cognitive Radio and Networks Symposium Ahmed Kamal, Iowa State University, USA Peter Jung, KommunikationsTechnik, Germany Girish Chandra, TCS Innovations Labs, India

Next Generation Networking and Internet Symposium

Abdallah Shami, University of Western Ontario, Canada

Stefano Giordano, University of Pisa, Italy James Sterbenz, University of Kansas, USA Hai Jin, Huazhong University of Science and Technology, China

Optical Networks and Systems Symposium Tarek S. El-Bawab, Jackson State University, USA Brigitte Jaumard, University of Concordia, Canada Jun Zheng, Southeast China University, China

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THE MAGIC OF GLOBAL CONNECTIVITY

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Signal Processing for Communications Symposium

Hsiao-Chun Wu. Louisiana State Univ., USA Tomoaki Ohtsuki, Keio University, Japan Ying-Chang Liang, Institute for Infocomm Research, Sindapore

Wireless Communications Symposium Yi Qian, University of Nebraska-Lincoln, USA Ravi Adve, University of Toronto, Canada Yahong Rosa Zheng, Missouri University of Science and Technology, USA Lorenzo Mucchi, University of Florence, Italy Angela Yingjun Zhang, Chinese University of Hong Kona

Wireless Networking Symposium Linda Xie, University of North Carolina, Charlotte, USA Walaa Hamouda, Concordia University, Canada Yusheng Ji. National Institute of Informatics. Japan Mohammed Atiquzzaman, University of Oklahoma, USA

WORKSHOPS

Proposals are invited for half- or full-day workshops in communication and networking topics. Proposals should be submitted to Workshops Co-Chairs, Nirwan.ansari@njit.edu, ixue@asu.edu

ADDITIONAL INFORMATION

Contact the TPC Chair, Zhensheng Zhang, zzhang@ieee.org, the TPC Vice Chair Stefano Bregni, bregni@elet.polimi.it, or the IF&E Chair Narisa Chu, narisa.chu@ieee.org.

ORGANIZING COMMITTEE Technical Program Vice Chair **Conference Operations Chair**

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Executive Chair Pierre Perra

Executive Vice Chair Doug Zuckerman

Technical Program Chair Zhensheng Zhang

Stefano Bregni Industry Forum & Exhibit Chair Narisa Chu

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Symposia Co-Chairs Abbas Jamalipour Nei Kato

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