Global
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Newsletter
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3rd International Workshop on Reliable Networks Design and Modeling (RNDM 2011)

By Jacek Rak, Poland; Brigitte Jaumard, Canada; Roland Wessäly, Germany

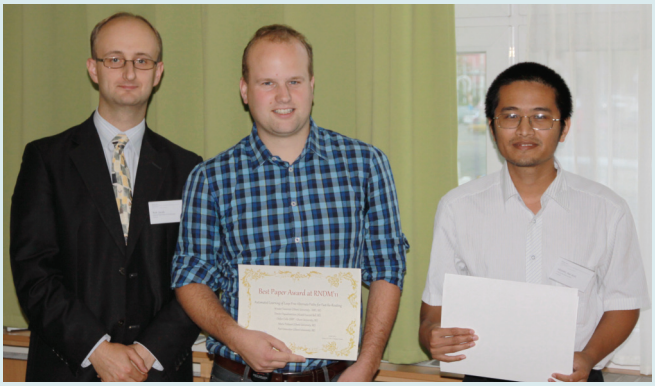
The third edition of the International Workshop on Reliable Networks Design and Modeling (RNDM 2011), technically co-sponsored by IEEE and IFIP TC6 WG 6.10, took place on 5–7 October in Budapest, Hungary. The event was organized by Dr. Jacek Rak from Gdansk University of Technology, Poland, in cooperation with Prof. Brigitte Jaumard (Concordia University, Montréal, Canada) and Dr. Roland Wessäly (atesio GmbH, Berlin, Germany), in conjunction with the 3rd International Congress on Ultra Modern Telecommunications and Control Systems (ICUMT 2011).

RNDM 2011 was a three-day symposium following two very successful consecutive events in St. Petersburg and Moscow, Russia, in 2009 and 2010. It provided a discussion forum for participants from both academia and industry presenting high-quality results in the area of reliable network design and modeling.

After a detailed review process (all papers received at least three reviews, and some as many as five), 27 papers were finally selected for oral presentation and publication in workshop proceedings (including IEEE Xplore and printed proceedings). They were organized into seven technical sessions:

- Optical Networks Survivability
- Resilience of Multilayer and Overlay Networks
- Models and Algorithms of Survivable Networks Design
- Network Reliability Assessment
- Theory of Network Reliability
- Survivability of Anycast and Multicast Networks
- Shared Link Risk Groups

Technical program of RNDM 2011 was enriched by keynote talks of Prof. David Tipper (University of Pittsburgh, United States) and Prof. János Tapolcai (Budapest University of Technology and Economics, Hungary) entitled "On Providing Quality of Resilience Classes in Multi-Layer Networks" and "Signaling-Free Failure Localization in All-Optical Mesh Networks via Monitoring Trails," respectively, and by the tutorial of Prof. James P. G. Sterbenz (University of Kansas and Lancaster University, United Kingdom, United States) entitled "Future Internet Resilience, Survivability, and Disruption Tolerance: Disciplines, Architecture, and Analysis.



Presentation of the Best Paper Award (left to right: Jacek Rak, RNDM 2011 General Chair, with Wouter Tavernier, and Hai Anh Hoang.

During the closing session, the papers "Automated Learning of Loop-Free Alternate Paths for Fast Re-Routing" by Wouter Tavernier *et al.* and "A New Flow Formulation for FIPP p-cycle Protection subject to Multiple Link Failures" by Hai Anh Hoang and Brigitte Jaumard were given the best paper award.

A special issue of *Telecommunication Systems Journal* (Springer) is being prepared for extended versions of selected highest-quality RNDM 2011 papers.

The next edition of RNDM workshop will take place in St. Petersburg, Russia, on 3–5 October, 2012. More information on the workshop may be found at http://www. rndm.pl.

Group photo of RNDM 2011 participants.

ComSoc Chapter Chairs Meeting at IEEE Sections Congress 2011

By Gabe Jakobson, IEEE ComSoc NA Director, and Ana Alejos, New Mexico State University, USA

IEEE Sections Congress was held on 19–22 August 2011 in San Francisco, California. The congress gathered 1133 attendees from 92 countries. Gabe Jakobson, North America Region (NAR) Director, was the primary ComSoc representative at the congress. The working sessions of the congress were grouped into three major tracks: Empower the Member; Enhance Geographic Unit Vitality; and Serve the World.

On the last day of the congress the primary delegates voted on 15 recommendations. The top five recommendations as ranked by the primary section delegates are noted below. These recommendations will be included as part of the 2012 MGA Board projects listing:

1. IEEE is to develop a comprehensive long-term strategy to increase the number of the next generation of youth pursuing science and engineering careers.

2. As members maintain their IEEE membership over their years, IEEE must reward them for their loyalty. Rewards ought to be tangible and useful, and can be done simply and inexpensively. Create Global Fidelity Programs including: (a) Continue membership recognition for 5–10–15–20 years of membership; (b) bonus for specific benefits (e.g., reduced fee, IEEE merchandise, etc.).

3. IEEE membership (including e-Membership) should include a Society membership as part of the basic membership fee.

4. Increased support to students in technical activities, with grants to attend conferences and organization of technical competitions.

5. To encourage interest in pre-university students in engineering careers, IEEE shall publish a subscription periodical (paper or electronic) targeted at high school students that highlights engineering activities of interest to those students. The periodical should also have articles promoting the benefits of an engineering career.

Participants of the Chapter Chairs meeting (picture courtesy of Ting Qian). Sitting (left to right): Wahab Almuhtadi, Celia Desmond, Gabe Jakobson, Doug Zuckerman, and Scott Atkinson. Standing (left to right): Ali Abedi, Carlos-Andres Lozano, Xavier Fernando, Alan Newton, Zhensheng Zhang, Jose-David Cely, Cheng Li , Wai Pang Ng, Dick Carrillo Melgarejo, and Bob Shapiro.

In addition to the main program of the congress, an informal two-hour meeting of the NAR chapter chairs attending the congress was held to discuss chapter activities, issues, and plans. Besides NAR, representatives from the Latin America (LA) and Europe, Middle East, and Africa (EMEA) regions attended the meeting, which allowed exchanging of ideas and plans that are important across ComSoc geographic regions.

NAR Director Gabe Jakobson set the stage by listing a few issues Chapters might address, including: (a) why potential members want to join ComSoc and what values the Society can bring to the table; (b) which Chapter activities make more sense to members, such as technical meetings, Distinguished Lecturer Tours (DLTs), student and industry activities, conferences and publications, and so on; (c) ComSoc globalization; and (d) ComSoc Vision 2020.

The main discussed topics and related action items are listed as follows:

Ali Abedi (Region 1 Chapters Coordinator, former Maine Chapter Chair) stressed the importance of developing and strengthening Chapters, helping new Chapter Chairs, and organizing DLTs on new technologies (e.g. nano technologies). As an action item, Gabe Jakobson will inform DLT organizers of this request.

Soon Wan (Boston Chapter) talked about the humanitarian aspect of the ComSoc activities. He also posed the question of why only small numbers of student members go on to become full ComSoc Members. As an action item, Gabe Jakobson will contact Mehmet Ulema to suggest that ComSoc's humanitarian activities ought to get more visibility. The Humanitarian Communications Technology Ad Hoc Committee under Mehmet Ulema's leadership is engaged in a number of activities already and should be visible in doing so.

Wahab Almuhtadi (Ottawa Chapter, Region 7 ComSoc Liaison, and NAR IS) pointed out that not all Chapters keep their websites active and updated, and some ComSoc NAR Chapters do not have websites at all, but refer to NAR Chapter pages. Wahab Almuhtadi emphasized the importance of the Chapter website as a significant link between the Chapter and their members to keep updated with Chapter technical seminars and other activities. He reported that the NAR website [1] will soon be improved and transferred to a central ComSoc server. Also, in order to keep the Chapter active and successful, Almuhtadi suggests the Chapters keep their relations strong with the ComSoc Society and with their Section. Also, it was recommended to attend the monthly Section meetings. As an action item, Wahab Almuhtadi and Ting Qian offered to work together on reorganizing the NAR website [1].

Scott Atkinson (San Antonio Chapter, Region 5 ComSoc Liaison and NAR MD) stressed that membership development still remains an important issue for ComSoc. He also reported on related activities that he and Shri Goyal, Director, Membership Development, are working on together in an IEEE committee. Action item: Scott Atkinson will elaborate more on the topic and report on those activities.

Alan Newton (Vancouver Chapter) reported on Vancouver Chapter activities. Alan Newton recently became the Vancouver Chapter Chair, and mentioned that such face-to-face meetings are very informative and instructive to new Chapter Chairs. As an action item, it was decided to introduce a proposal to ComSoc management on inviting new Chapter Chairs to ComSoc management meetings.

Jose David Cely (Colombia Chapter, Director LA Region) pointed out that cross-chapter cooperation should be improved. He also mentioned that more DLTs should be organized in the LA Region. Action item: all chapters, specially the chapters in the LA region, should be encouraged to invite DLs.

Xavier Fernando (Toronto Chapter) shared his experience in chairing the Toronto Chapter of Canada Region 7.

Ting Qian (Senior Project Manager, IEEE ComSoc) gave a very informative and enthusiastic review of the recent progress in introducing social media services and encouraged all participants to use those services more actively in their

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ComSoc Activities in the AP Region, 2010–2011

By Takaya Miyazawa, National Institute of Information and Communications Technology (NICT), Japan;
Kohei Shiomoto, NTT Network Service Systems Laboratories, Japan

The Asia-Pacific Board (APB) organized and held IEEE Communications Society Distinguished Lecture Tours (DLTs) and a Distinguished Speaker Program (DSP) in the Asia-Pacific (AP) region in 2010 and 2011. In 2010, there were three DLTs and 1 DSP in the AP region. As for DLTs, Prof. Arun Somani visited Singapore, Taiwan, and Taipei. Dr. Bhumip Khasnabish visited Bombay, Hyderabad, Kharagpur, and Calcutta in India. Prof. Qian Zhang visited Kuala Lumpur in Malaysia. As for the DSP, Dr. Heather E. Hudson visited Wellington, New Zealand. Please see AP Newsletter No. 39 for more details, which can be obtained from APB's website (http://chapters.comsoc.org/~APB/). This article introduces the DLTs and DSP held in 2011. It also announces the next APB general meeting and concludes with an acknowledgment.

DSP Lecture by Dr. Jin Li.

Report of DLTs and DSP in 2011

From January to September 2011, there were two DLTs and one DSP:

In April 2011, Dr. Jin Li visited Beijing and Shanghai for a DSP Lecture. The title of his talk was "Utility Maximization for P2P Applications and Its Application in Optimizing Multiparty Conferencing." More than 20 people attended the lecture; some were students and some were industry researchers. The audience asked many questions and actively responded to various questions raised by Dr. Li. Including the questions and answers, the whole lecture was about two hours. After the lecture, some of the audience showed interest and asked for his slides.

On 22, 23, and 25 August 2011, Prof. Qian Zhang visited Australia. On 22 August, she delivered a talk titled "Cooperation in Cognitive Networks" at Queensland University of Technology. The lecture was attended by a mix of academic staff, students, and industry members. The talk was paced and formatted skillfully to address the needs of the wider audience. On 23 August, she delivered a talk titled "Cooperation in Cognitive Radio Networks" at the Australian National University. The lecture was well attended, mainly by people from academia. On 25 August, she again delivered"Cooperation in Cognitive Networks" at the University of New South Wales. The lecture was attended by 52 IEEE members, student members, and a few non-members. Attendees included academic staff, postdoctoral fellows, research fellows, research students, and engineers who they came from various universities in Australia, research institutes (CSIRO ICT Centre, NICTA), industry, and organizations, where communications are of serious research and development interest. At each lecture, she provided broader insight into the cognitive radio and cooperation concepts. She also presented some recent advances in these areas. She highlighted the importance of regulatory initiatives in these areas and of spectrum efficiency measures for the future of wireless communications networks. Much interest and many questions were raised from the audience. She was very accessible, and the audience had the opportunity to interact with her on a number of subjects related to cognitive radio.

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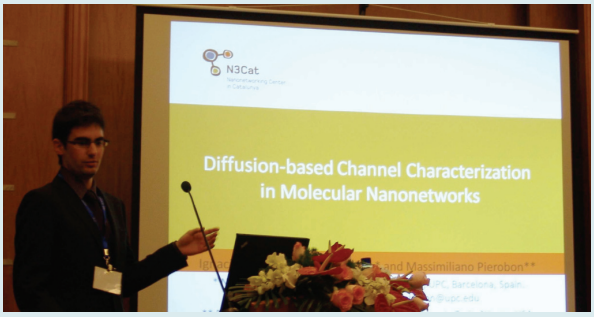
1st IEEE International Workshop on Molecular and Nano Scale Communications (MoNaCom 2011)

by Ian F. Akyildiz, MoNaCom General Chair;
Sasitharan Balasubramaniam, Albert Cabellos-Aparicio, Jian-Qin Liu, MoNaCom Technical Program Co-Chairs

The 1st IEEE International Workshop on Molecular and Nano Scale Communications (MoNaCom) was held in conjunction with IEEE INFOCOM on 10 April 2011 in Shanghai, China. The Workshop was organized by General Chair Ian F. Akyildiz (Georgia Institute of Technology, USA; NaNoNetworking Center in Catalonia, N3Cat, Universitat Politècnica de Catalunya, Spain) and Technical Program Co-Chairs Sasitharan Balasubramaniam (TSSG, Waterford Institute of Technology, Ireland), Albert Cabellos-Aparicio (N3Cat, Universitat Politècnica de Catalunya, Spain), and Jian-Qin Liu (NICT, Japan).



Ignacio Llatser Martí from NaNoNetworking Center in Catalonia (N3Cat), Universitat Politècnica de Catalunya, Spain.

Massimiliano Pierobon from Georgia Institute of Technology, United States.

During the last decade, the advancement of nanotechnology has largely been attributed to the integration of diverse disciplinary fields of research (e.g., materials science, molecular biology, biochemistry). While these various fields have advanced the capabilities of these miniaturized devices, one limited capability of these devices is the ability to communicate and network between each other. The aim of IEEE MoNaCom was to address this limitation, by bringing together

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AP Region Activities/*continued from page 3*

From 12 to 19 August, Dr. George Rouskas visited Sri Lanka, but this DLT will be reported in the next AP newsletter.

Two more DLTs were planned for the rest of 2011: Dr. Weihuang Zhuang was to visit Beijing, Shanghai, Nanjing and Xian in China from 12 to 29 October, and Prof. Marco Chiani is going to visit Bombay, Bangalore, Hyderabad, Pune in India from 17 to 25 October. Their DLTs will be reported in the next AP newsletter.

Announcement of the next APB general meeting

This article mainly introduced the activities on DLTs and DSP in 2011, but the APB holds many other activities, as we described in the *Global Communications Newsletter* of September 2010 (http://dl.comsoc.org/gcn/pdfs/gcn0910.pdf). As an occasion to report on its activities, the APB has general meetings at ICC and GLOBECOM every year. Any AP Region ComSoc member is invited to the meeting to converge the interests and opinions of AP Regional ComSoc members and reflect them in ComSoc's policies and procedures. Participants will enjoy a great opportunity to deepen exchange with researchers in the Asia-Pacific region and enjoy wonderful food. The last APB general meeting was held in Houston, Texas, United States, at GLOBECOM '11 is held. Please visit the website of APB for details:

http://chapters.comsoc.org/~APB/

Acknowledgment

The APB would like to thank Ms. Ewell Tan at IEEE Asia Pacific Regional Headquarters/Comunications Society Office, Prof. Jinhong Yuan (New South Wales ComSoc Chapter Chair), Dr. Abd-Krim Seghouane (ACT Signal Processing and Communication Chapter Chair), Prof. Dhammika Jayalath (Signal Processing and Communications Chapter Chair in IEEE Queensland Section). and Prof. Chenyang Yang for their providing information related to this article.

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MoNaCom 2011/*continued from page 3*

researchers from various backgrounds and disciplines who could work together in developing and fostering this new emerging field of communication.

From the very beginning, the aim of IEEE MoNaCom was to attract high-quality research papers, and to use this workshop as a base to showcase the current research in this area to the wider ICT community. The workshop, which is the first of its kind to be held at IEEE INFOCOM, started off with a great success that exceeded our expectations. The papers that were accepted for the workshop came from numerous countries, including China, the United States, Turkey, Spain, Ireland, Japan, Canada, and Hungary. The half-day workshop included two full paper sessions and one short presentation session. The first session of the workshop focused on "Nanonetworking Communication Techniques" and presented papers addressing new communication paradigms for molecular and nanoscale communications, ranging from the use of bacteria as information carriers to characterizing signaling channels for neuronal networks and molecular-diffusion-based communication. The second session focused on "Networking Concepts for Molecular Communications," which consisted of papers addressing higher-level networking protocols such as addressing, routing, and scheduling that could be realized at nano and molecular scales. The last session was dedicated to short presentations on early ongoing research in this new field. A number of best papers from the Workshop were also invited to Elsevier's *Nano Communication Networks* journal.

Throughout the entire workshop, lively discussions from the audience and presenters, has brought along a new sense of awareness to ICT researchers. This awareness has led to new research questions for the research community, in particular questions on how this new paradigm shift can be pursued in the foreseeable future. We believe that this new mindset of the participants and the ability for new generation ICT researchers to embrace this new field, highlights the original goals and intention of the workshop.

We would like to take this opportunity to thank the authors as well as the presenters for making this Workshop an inaugural success. This success is also highly attributed to the distinguished Technical Program Committee, who provided their valuable time in providing thorough and constructive reviews that ensured the high scientific standard of the Workshop. Lastly, we would like to thank all the participants who attended the Workshop. We hope that this inaugural Workshop will mark a new beginning in nano and molecular communications, and lay the foundations for the future of this new emerging area.

Chapter Chairs Meeting/*continued from page 2*

ComSoc activities and networking.

Celia Desmond (ComSoc, Canada) reported on the success of the Wireless Communication Engineering Technologies Certification (WCET) program [2] and future plans to expand the WCET program.

Doug Zuckerman (IEEE Division III Director-Elect) reported on IEEE Division III activities.

Bob Shapiro (IEEE ComSoc E-News EIC, MAL of ComSoc BoG) encouraged Chapter Chairs to make their voice heard at the ComSoc management level.

Other attendees were Zhensheng Zhang (San Diego Chapter), Cheng Li (Newfoundland and Labrador Chapter), Carlos-Andres Lozano (Colombia Chapter), Dick Carrillo Melgarejo (Brazil Chapter), and Wai Pang Ng (United Kingdom and Ireland Chapter

References

[1] http://chapters.comsoc.org/NA/
[2] http://www.ieee-wcet.org/