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CONFERENCE REPORT

IEEE ConTEL 2015

By Drazen Lucic, Hakom, Croatia

The International Conference on Telecommunications (ConTEL) 2015 was organized by the Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia, and the Institute of Microwave and Photonic Engineering, Graz University of Technology, Austria. ConTEL 2015 was technically co-sponsored by the IEEE. This year ConTEL celebrates the 13th issue of bi-annual events, and after 2011 as an alternate to Zagreb in Croatia, it was hosted again by Graz University of Technology 13–15 July. ConTEL 2015's program is a platform for scientists, industry, operators, and service providers to share ideas, discuss recent advances, to exchange their R&D experience, and present state-of-the-art techniques. The ConTEL 2015 technical program comprised keynote talks, a general track, special sessions on smart cities and multimedia services, as well as a workshop on future regulatory challenges.

The special sessions were on "Design and Evaluation of Interactive Multimedia Services and Applications" and "Smart Cities: Crowdsourcing and M2M Communication for a Connected Society". The special session included 12 papers, whereas the general track comprised eight sessions with 37 papers to be presented, both selected from more than 100 valid submissions. Each paper was evaluated by at least three independent reviewers with respect to their technical content, novelty, originality, and presentation. Overall, the review process involved 148 reviewers and 331 reviews. Keynote and invited talks were presented with in plenary sessions. The first keynote, entitled "Overcoming the Optical Networks Capacity Crunch", was given by Peter J. Winzer, head of the Optical Transmission Systems and Networks Research Department at Bell Labs, Holmdel, NJ, United States. The second keynote, "Discovering the NFC Air Interface", was presented by Michael Gebhart, System Expert at NXP Semiconductors, Austria. The third keynote speaker was Magdy A. Bayoumi from the University of Louisiana at Lafayette, United States.

In the context of the Fifth Workshop on Regulatory Challenges in the Electronic Communications Market, Fatima Barros, Professor at the Lisbon School of Business and Economics and 2015 Chair of the Body of European Regulators for Electronic Communications, spoke about the "Regulatory Challenges in a New Digital Eco-system". Her speech concerned the anticipation of the new regulatory requirements and challenges at both the national and EU levels to create new opportunities for growth and innovation. In contrast to the papers submitted for the general track, or special sessions, the 12 contributors to the regulatory workshop are based on extended abstracts.

The research papers session on "Regulatory Challenges in the Electronic Communications Market" was a joint session with the main conference. After the session two round tables were performed, the first one with the topic "Digital Single Market", and the second one with the topic "Broadband Networks, Services and Users". Among others, the contributors, as well as the partici-



Participants of ConTEL 2015 in Graz.



ConTEL 2015 Session.

pants of the round tables, were the heads and of the national regulatory authorities of Albania, Austria, Croatia, Macedonia, Portugal, and Serbia. The conclusion of the debate at the round tables was that the development in technology, in the electronic communications and related markets, as well as the continuous change in consumers' needs, expectations and behavior, is affecting all sectors of the economy and society, resulting in a new digital economy. New opportunities for growth and innovation are emerging in Europe, and it is crucial that the new regulatory requirements and challenges are anticipated and addressed at both the national and European Union levels, in a coordinated way. Therefore, to make the most of the European digital economy, it is necessary to break down existing barriers, and use a holistic approach to promote the required cross-sector measures. The Digital Single Market Strategy for Europe, presented by the European Commission, goes in this direction and identifies the key role of telecommunications and the importance of appropriate regulation. Therefore, the main regulatory challenges are related to the fair treatment of players on new and cross-sector markets, demand take-up, and the promotion of competition as the main driver for investment in new infrastructures. In order to meet the long term connectivity needs of the European Union, exploit innovation, and capitalize on the new digital economy, European regulators will need to have an active role and regulate and deregulate as and when needed.

The next ConTEL conference is scheduled for 2017 in Zagreb, Croatia.

IEEE ComSoc DLT of Pradeep Ray to China

By Pradeep Ray, Australia

I have been serving IEEE, particularly ComSoc, for more than 20 years as an author, a reviewer, an editor, a conference organizer, and a TC Chair, but this is my first time serving as a ComSoc Distinguished Lecturer (DL), for the term 2014-2015. I made my Distinguished Lecture Tour (DLT) to China during this past summer (22 June – 6 July). Before this I delivered a DL in 2014 in India, Bangladesh, UAE, and the Philippines. It was indeed a fantastic experience. I shared my research findings with our IEEE members, and also got to know more researchers to support multi-disciplinary collaboration across the engineering, public health, and business sectors, and enrich my understanding of local cultures.

I prepared a list of lectures on various aspects of eHealth and telemedicine, including talks on “Cooperative Service Management in Healthcare Sector: Emerging Trends and Future Challenges”, and “Towards an Intelligent and Ubiquitous Healthcare Infrastructure”. These talks were delivered at the IEEE Chapters in Beijing, Xian, Harbin, and Shanghai. The hosting chapters provided me with the necessary logistic arrangements, i.e. accommodations, local transportation, English speaking guides (essential in China), and meals, as required during the DLT program. My first lecture was in Beijing, which was hosted at the Beijing University of Post and Telecommunications (BUPT) on June 22, that happened to be a public holiday. In spite of its being a public holiday, there were approximately a dozen attendees during my talk. Most of them were Ph.D. students or researchers (some from overseas). It seemed that most of the



Pradeep Ray lecturing at Harbin Institute of Technology at Harbin.

attendees did not have much background in this emerging area of communications, although they were quite interested, based on their questions. After the talk at BUPT, the host took me to the Beijing West railway station, from where I took the overnight train to Xian. I was able to visit the Great Wall and the Summer Palace in Beijing on Sunday 21 June.

Xidian University in Xian was the host of my second talk on 24 June. They also provided me with pick-up arrangements from the Xian Railway Station on 23 June and took us to the Xian Airport on 25 June for the trip to Tianjin, where we spent the weekend before travelling to Harbin. This talk was longer, as requested by the hosts, and it seemed this group, led by Prof. Gang Yang, were already working on telemedicine. There were approximately 20 attendees, and we had a long discussion with the team of Prof. Gang Yang after my talk on 24 June. I was most impressed with the historical sites that have been preserved the 5000 years of Chinese history in Xian, which was the capital of 13 dynasties out of the 19 in Chinese history. The most prominent museum (the largest on-site archeological museum in the world) is the Terracotta warriors, which features full size colored statues of different divisions of armed forces built to protect the soul of the buried emperor. These statues were buried in 600 pits in that area. Only three of them have been excavated so far. The rest have not been touched because the statues lose color as soon as they come in contact with the outside atmosphere. Xian was considered the safest capital in China, as it is surrounded by mountains on three sides and the ferocious yellow river on the fourth side. This city has been the home of many Chinese intellectuals and politicians, including Chairman Mao Tse Tung.

My lecture in Harbin was conducted at Harbin Institute of Technology (HIT). The Chapter arranged to meet me at Harbin station on 29 June and take me to the Harbin airport on 5 July. It seemed that a number of schools of HIT were interested in multi-disciplinary research in eHealth, and hence I met with more than 50 people at different times during my week-long stay there. Prof. Weixiao Meng was my host from the HIT School of Information and Electronics Engineering. I had long discussions on future collaborations with Prof. Yongbin Yan, Prof. Doug Vogel, and Prof. Xitang Guo of HIT eHealth Research Institute, and I delivered three more lectures on different aspects of eHealth services and research. Prof. Meng's students took my photo, shown above, during the IEEE DL. Of course, I did not miss the opportunity to visit the famous Siberian Tiger Reserve that hosts 1000 tigers of different types and age groups. We were driven in a caged vehicle while the tigers roamed free inside the reserve.

The Joint Institute of Shanghai Jiao Tong and Michigan University were my hosts for IEEE DL at Shanghai on 6 July. There were approximately 20 attendees. Prof. Xinwan Li was my host, and we discussed possible collaborations. I took this opportunity to take some photos of the building architectures around the famous Bund in Shanghai:

Thanks to the excellent organization by the IEEE Communications Society Asia Pacific Office, ComSoc DL organizers, and the hosts in Beijing, Xian, Harbin, and Shanghai, this IEEE ComSoc DLT

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Pit 1 of Terracotta Warriors Museum near Xian.



Night view of European architecture at the Bund in Shanghai.

Recent Activities in the ComSoc Northeastern USA Region 1

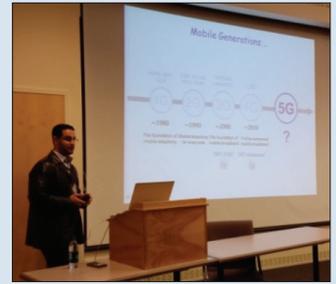
By Dr. Ali Abedi, Chair of Maine Chapter and Region 6 Representative on the North America Region Board, and Dr. Ronald O. Brown, Vice-Chair of Maine Chapter, USA

The Northeastern USA Region 1 consists of the following chapters: Binghamton, Mohawk Valley, North Jersey, Boston, New Hampshire, Princeton Central Jersey, Buffalo, New Jersey Coast, Rochester, Connecticut, New Jersey Coast (Joint), Syracuse, Long Island, New York, Worcester County, and Maine.

The IEEE Maine Communications Society Chapter, in collaboration with several other chapters on the east coast (Rochester, Boston, North Jersey, Princeton Central Jersey, Jersey Coast, Columbus, Atlanta, and Palm Beach) organized a Distinguished Lecture Tour for Dr. Tarik Taleb on the East Coast.

Dr. Tarik Taleb is currently a professor at the School of Engineering, Aalto University, Finland. He has been working as senior researcher and 3GPP Standards Expert at NEC Europe Ltd, Heidelberg, Germany. His talk, titled "Towards 5G: Carrier-Grade Programmable Virtual Mobile Networks," was delivered on 19 March 2015 at the University of Maine. The talk highlighted the chal-

lenges that current and future mobile systems do and will face. He then showcased how programmable virtual mobile networks can be used as an efficient solution to revolutionize the congestion management concept and deal with the ever-growing volume of mobile traffic. His talk was well received by students, faculty,



Dr. Taleb.

and industry professionals in attendance. Dr. Taleb's talk was unique in that it provided the audience with a multi-faceted perspective from the academic, industry, and standards points of view. The talk was followed by a tour of NASA's Inflatable Lunar Habitat (see photo below left), which is at the University of Maine's Wireless Sensing laboratory, and includes a 124-node wireless network of passive and active sensors.

On 24 April the Maine Chapter hosted Sebastian Ventrone, IBM Senior Technical Staff Member and IBM Life Time Master Inventor, to speak about the Art of Design through the Use of Innovation and the Harvesting of Patents. His talk was directed at students to complement their classroom training with this unique professional development opportunity. The student chapter was also involved in organizing this talk, and because of the high level of interest from students, they are planning to repeat this event in the Fall.

Another interesting event hosted by the Maine chapter in collaboration with the Boston and New Hampshire chapters was a DLT talk on 1 May by Dr. Hamid Jaafarkhani on the topic "Distributed Beamforming in Wireless Relay-Interference Networks", which was paired with a second talk on "Decoding of Binary Codes in the

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At NASA's Inflatable Lunar Habitat.



Prof. Jaafarkhani and Szczecinski at the Maine Chapter.

Recent Activities in the ComSoc Western USA Region 6

By Zhensheng Zhang, Vice Chair of the San Diego Chapter and Region 6 Representative on the North America Region Board, USA

Within the North America region of the Communications Society (ComSoc), there are seven local regions (<http://www.comsoc.org/about/chapters/NARegion>), with the Western USA making up Region 6. In this article we will provide some details about the region and report on some of the recent activities within the region.

The Western USA Region 6 has approximately 3,715 ComSoc members and consists of the following 16 chapters: Buena Ventura, Coastal Los Angeles, Foothill, Hawaii, Oakland East Bay, Orange County, Oregon, Phoenix, Sacramento, San Fernando Valley, San Francisco, San Diego, Santa Clara Valley, Seattle, Tucson, and Utah

This region is one of the most active regions within North America. Most of the chapters actively organize technical, advanced, and tutorial-type or hands-on seminars, host distinguished lecture tours, and plan social events to provide our ComSoc members with opportunities to network with their peers and add value to their ComSoc membership. Below are a few sample activities within the region, just to provide a glimpse within the region's activities. More detailed descriptions of the activities can be found in each chapter's website.

The Santa Clara Valley Chapter organized a technical talk on 13 May 2015 on the topic "NFV, SDN, and the Need for Optimized Server and Processor Architectures", given by Gopal Hegde, VP/GM, and Bharat Mota. Software defined networks (SDN) and network function virtualization (NFV), which advance the evolution of cloud computing, are technologies that will play a critical role in next-generation data centers and enterprise networks. Driven by continued demand for low-cost computing, the proliferation of NFV and SDN will place additional burdens on both computing and communications infrastructures of data centers. On one end, computing resources will be expected to shoulder additional demands of network workloads, whereas on the other end, there will be higher demands on scalability, lower latency, and increased I/O bandwidth demands, to mention just a few. Two experts from Cavium and Freescale provided a review of these issues, and presented new optimized server architectures to respond to the higher demands enabled by NFV and SDN. There were approximately 60 attendees. The Santa Clara Valley Chapter also hosted an annual society mixer event on 13 August 2015, providing networking opportunities for our members.

A Distinguished Lecture Tour was hosted by the Seattle, Oregon, and Vancouver chapters between 19 May and 23 May 2015. The Distinguished Lecturer was Dr. Rath Vannithamby, covering the topic "5G Evolution and Candidate Technologies". As 4G standards have been completed and networks are beginning to be deployed, the attention of the mobile research community is shifting toward what will be the next set of innovations

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in wireless communication technologies. Given a historical 10-year cycle for every generation of cellular advancement, it is expected that networks with 5G technologies will be deployed around the year 2020. Technologies for future cellular wireless networks and devices are expected to meet the needs of an increasingly diverse set of devices and services in 5G. This presentation discussed the usages and technologies that will comprise the next set of cellular advancements in 5G, in particular: the applications and usages for future 5G communications; a set of key metrics for these usages and their corresponding target requirements; and the potential network architectures and enabling technologies to meet 5G requirements. It is expected that some of the new technologies comprising 5G will be evolutionary, covering gaps and enhancements from 4G systems, while some other technologies will be disruptive. These technologies will encompass the end-to-end wireless system, from wireless network infrastructure to spectrum availability to device innovations. The presentation also provided an overview of 5G activities around the world to provide a better understanding of the vision and research direction of various teams as they tackle the challenging problems of capacity, massive numbers of IoT devices, ultra-low latency, ultra-low power efficiency, etc., that wireless networks are expected to face beyond 2020.

The San Diego Chapter, which won the ComSoc Best Chapter Award in 2013, hosted many technical talks and is actively co-sponsoring the ComSoc flagship conference IEEE GLOBECOM 2015 to be held 6–10 December 2015 in San Diego.

On 18 June 2015 the San Diego chapter hosted a technical talk on “Noninvasive Detection of Emotional Contagion in Online Social Networks”, given by Dr. Lorenzo Coviello. We can summarize the talk as follows: Does semantic expression spread online from person to person? And if so, what kinds of expression are most likely to spread? To address these questions, the speaker proposed a non-experimental, noninvasive method to detect and quantify contagion of semantic expression in massive online social networks. Using only observational data, the method avoids performing emotional experiments on users of online social networks, a research practice that recently became the object of criticism and concern. The model combines geographic aggregation and instrumental variables regression to measure the effect of an exogenous variable on an individual’s expression and the influ-

ence of this change on the expression of others to whom that individual is socially connected. The method is applied to the emotional content of posts generated by a large sample of Facebook users over a period of three years. Those results suggest that each post expressing a positive or negative emotion can cause friends to generate one to two additional posts expressing the same emotion, and it also inhibits their use of the opposite emotion. The method can be applied to contexts different than emotional expression and to different forms of content generated by the users of online platforms. The method makes it possible to determine the usage of words in the same semantic category spread, and to estimate a signed relationship between different semantic categories, showing that an increase in the usage of one category alters the usage of another category in one’s social contacts. Finally, it also allows one to estimate the total cumulative effect that a person has on all of their social contacts. Approximately 50 people attended the talk.

As mentioned earlier, the Western USA Region 6 is one of the most active local regions within North America. ComSoc members are encouraged to check each chapter’s website for upcoming events and to get involved in their chapter’s activities.

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Presence of Channel Mismatch: Correction of the LLRs”, delivered by Dr. Leszek Szczecinski. Hamid Jafarkhani is a Chancellor’s Professor in the Department of Electrical Engineering & Computer Science at the University of California, Irvine, where he is also the Director of the Center for Pervasive Communications & Computing and the Conexant-Broadcom Endowed Chair. Hamid Jafarkhani is one of the top 10 most-cited researchers in the field of “computer science” in the period 1997–2007. Leszek Szczecinski is an associate professor at INRS-EMT, University of Quebec, Canada, and adjunct professor at in the Electrical and Computer Engineering Department at McGill University. These two talks attracted both a technical and general audience to the event, making the long trips to the talk venue worthwhile.

Because of the large geographic dispersion of members in the Maine section, some attendees had to travel three hours each way to attend these talks. The attendance in these events ranged from 30 to 60 attendees, which is comparable to the membership count in this chapter.

About the authors: Dr. Ali Abedi is the Region-1 representative on the COMSOC North American Region Board and Chair of the IEEE Maine COMSOC Chapter. Dr. Ronald O. Brown is an independent consultant and Vice Chair of the IEEE Maine COMSOC Chapter.

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on eHealth was a great success. I am a great admirer of the IEEE DL program that benefits lecturers as well as the host chapters. I would like to thank all those that made it possible, including Ewell Tan of the Asia Pacific Office and hosts Prof. Xiaofeng Tao, Chair-Beijing Chapter, Prof. Jiandong Li, Chair-Xian Chapter, Prof. Weixiao Meng, Chair-Harbin Chapter, and Prof. Xinwan Li, Chair-Shanghai Chapter.

**GLOBAL COMMUNICATIONS NEWSLETTER**

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