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Distinguished Lecturer Tour of Norman C. Beaulieu in Skopje, Florence, Podgorica, and Belgrade in March 2014

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The idea for Prof. Norman Beaulieu's DL Tour was raised during the Globecom 2013 conference in December 2013 in Atlanta, when Prof. Beaulieu and Prof. Zoran Hadzi-Velkov, the Chair of the R. Macedonia ComSoc Chapter, first discussed it. The Distinguished Lecturer Tour was organized at the beginning of 2014 to include four different European countries: Republic of Macedonia, Italy, Montenegro, and Serbia.

Prof. Beaulieu explaining the geography of Canada.

Prof. Beaulieu and the Chair of R. Macedonia ComSoc Chapter on an evening tour around the capital Skopje.

Prof. Beaulieu started his DL tour in Skopje, with a visit to the R. Macedonia ComSoc Chapter between 1 and 4 March, 2014. On 3 March, 2014 he gave two lectures that took place at the Faculty of Electrical Engineering and Information Technologies (FEIT), Ss. Cyril and Methodius University in Skopje. The first lecture, entitled "Generalized models for fading with diffuse scatter plus line-of-sight components", was well attended by people from academia and the ICT industry in Macedonia. The second lecture, entitled "How to write an IEEE paper", actually was an interactive Q/A session for the EE students, where Prof. Beaulieu explained the art of writing high quality papers based on his vast and highly successful research experience and being the former Editor in Chief of *IEEE Transactions on Communications*.

The Italian Lecture took place in Florence, on 6 March, 2014 (Thursday) at Santa Marta, University of Florence, between 5 pm and 7 pm. Prof. Fantacci introduced the Lecture, thanking Prof. Beaulieu and the IEEE Chapter for the opportunity, and describing the activities of the research units in the Department of Information Engineering. Then Prof. Beaulieu started his Lecture, "Generalized models for fading with diffuse scatter plus line-of-sight components". First he explained how new wireless applications lead to the need for new channel models. In particular, he considered a scenario where more than one specular wave are present. He highlighted the need for a new model to find a physical and mathematical representation, rather than a mere good fit of experimental data, which can be obtained by increasing the distribution parameterization. He proposed three models to describe different propagation conditions, considering both the presence and the absence of line of sight component.

Many members of the Department of Information Engineering attended the lecture, as well as graduate and undergraduated students. It was an excellent opportunity for debating many interesting ideas and different points of views with the presence of an international expert in communication systems.

Finally, Prof. Beaulieu visited both Montenegro and Serbia. He gave a lecture in Podgorica, Montenegro, on 10 March, 2014, and a lecture in Belgrade, Serbia, on 12 March, 2014. The lecture in Podgorica was organized by the Faculty of Electrical Engineering and its Centre for Telecommunications. Prof. Beaulieu gave his lecture and explained his main research activities. All members of the Centre for Telecommunications as well as other faculty staff attended the lecture. Also, undergraduate, master's and some Ph.D. students were present. The lecture was very interactive with interesting debate and participants' questions. Some of the Ph.D. students used this opportunity to discuss with Prof. Beaulieu issues related to their particular research topics in the area of wireless communications.

The organizers of the lecture in Belgrade were the IEEE Serbia & Montenegro COM Chapter, Telecommunications Society Belgrade, and the ETF-School of Electical Engineering, University of Belgrade. The invitations were sent to all IEEE ComSoc members, including student members, as well specifically to several target groups: radio engineers employed in state telecommunications agencies; radio engineers employed by all three mobile operators in Serbia; and students (both non IEEE and IEEE) in the fourth and fifth years of the ETF-Department of Telecommunications. The lecture was well attended, with around 35 listeners. Prof. Beaulieu introduced an interesting personal approach, forcing those in the auditorium to actively participate by answering the lecturer's questions, and in some cases asking their own questions.

Celebrating 20 Years of the Malaysia International Conference on Communications (MICC)

By Borhanuddin Bin Mohd Ali and Hafizal Mohamad, Malaysia Chapter Past-Chairs

The mysterious disappearance of flight MH370 on 8 March this year has put Malaysia under the world's spotlight. As this article is being written, the Boeing 777 aircraft that disappeared into thin air en route to Beijing from Kuala Lumpur has yet to be found. This is despite an unprecedented air, sea, and undersea hunt involving multiple nations, who at any other time were at best uneasy neighbors. In the ensuing period, much attention has been drawn to the technologies that have helped to make flying easy and secure, and why they have failed us this time. Professionals and academics, including some of our own members, have been interviewed live on TV to enlighten the public on various aspects of the technologies that previously were taken for granted. Now the public is more educated on what is the difference between the so called secondary and primary radar; what is Inmarsat, and how the Doppler effect was used to conclude that the aircraft ended its flight in the south Indian Ocean, a most inhospitable place; what is sonar and blue fin, which goes deep underwater looking for the ping from the black box; and what is a black box itself. This is in addition to the inevitable spin of conspiracy theories behind the saga, some plausible, some outlandish. They made Agatha Christie's plot look like a child's play.

Just a few months before this tragedy, on 17–19 November, 2013, ComSoc's Malaysia chapter organized the 2013 Malaysia International Conference on Communications (MICC). This marked the 20th year of the conference, which is quite an achievement. Many of the technologies behind aeronautics are also the subject matter of MICC, which, in hindsight, makes MICC a particularly timely and important event.

The first MICC was held in Kuala Lumpur in 1993, and subsequently the conference has been held every two years, and in most cases collocated or collaborated with another conference. The venue alternated between Kuala Lumpur, the capital city, and another provincial city. The second MICC was held on the legendary island of Langkawi in 1995. The third was back in Kuala Lumpur, collocated with the International Signal Processing and Communications (ISPACs) Conference. The fourth was in the historic city of Malacca in 1999 with the International Symposium on Consumer Electronics (ISCE). The fifth was back in Kuala Lumpur (2001) with the Lightwave Lasers and Optics (LiSLO) Conference. The sixth was in Penang (2003) with the Asia Pacific Conference on Communications (APCC). The seventh was back in Kuala Lumpur with the International Conference on Networks (ICON) (2005). The 8th was again in Penang with the International Conference on Telecommunications (ICT) in 2007. The ninth was back in Kuala Lumpur in 2009. The 10th was in Kota Kinabalu in the Borneo Island with the 16th APCC in 2011. The last MICC was in Kuala Lumpur in 2013, thus completing 20 years of the conference.

The VIPs on stage for the Opening Ceremony. From the left: Dato' Hod Parman, General Chair; HE Dato' Seri Ahmed Shabery Cheek, Minister of Communications and Multimedia; Dato' Azmi Che Harun, Deputy Under Secretary, Communications Sector, Ministry of Communications and Multimedia.

The Banquet, with some of the MICC pioneers.

The two Keynote Speakers; from left Zisheng Niu and Hikmet Sari, with Hod Parman, the General Chair.

As if to mark its significance, for only the second time in its 20 years, this year's event was officially opened by the Honorable Minister of Communications and Multimedia, His Eminence Dato' Sri Ahmed Shabery Cheek. In his speech the minister, who himself was a former university professor, highlighted the importance of research and learning in communications technologies and related areas, to help propel Malaysia forward as a modern nation.

The conference was attended by 120 people from 23

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Highlights from TiECon 2014, Santa Clara, CA, USA: Keynote by the Qualcomm CEO

By Alan J Weissberger, NA Correspondent/IEEE GCN and ComSoc Community Content Manager, USA

TiECon 2014, the two day annual conference of The Indus Entrepreneurs (TiE), took place in Santa Clara, CA, USA, on 16–17 May, 2014. This article is the first part of our report and summarizes the conference's opening keynote, a conversation with Qualcomm's CEO. The second part will be published next month and will cover selected sessions of the Internet of Things (IoT) track.

With 4,200 attendees, this year's TiECON was the largest of all time. That is a testimonial to the superb organization and planning, which produced excellent content on a variety of topics and subject areas that were of interest to technologists, entrepreneurs, and private investors. The top-notch technical sessions included keynotes, panel discussions, lightening rounds with start-ups, and breakthrough thinker presentations.

[TiE-SV and IEEE ComSocSCV have had a strategic partnership since 2010. In September 2013 they held a well attended joint workshop: Quantified Self: The next frontier in mobile self-tracking.]

Qualcomm CEO Steve Mollenkopf's Opening Keynote

The opening TiECon keynote was a fireside chat with Qualcomm CEO Steve Mollenkopf. The format was a Q&A type of "conversation" with Mohan Gyani, formerly President and CEO of AT&T Wireless Mobility Services.

What is Qualcomm? "We are a technology company that invests in core technology that's needed for big changes in the (IT) industry. We try to be fairly flexible in the way in which we go to market, always through partners," Steve said. Technology licensing (number 1) and chipsets (number 2) are the Qualcomm deliverables which generate revenues and profits for the company.

Here are a few of Mollenkopf important points and observations about Qualcomm:

- Scale is very important when pursuing innovation. Qualcomm's scale (of operations and R&D investment) enables the company to pursue new areas of opportunity that smaller companies couldn't afford to undertake.
- Corporate culture is the most strategic asset. It gets you through periods of uncertainty.
- Need to preserve a spirit of innovation which includes being nimble (i.e. quick to change direction/iterate) and learning from one's mistakes.
- Qualcomm tends to focus on a small number of eco-system customers, but the company has a large partner base.
- Qualcomm likes to partner with other companies, because they can't cover all aspects of the many technologies that are now coming together in the wireless/mobility marketplace.
- Qualcomm wants technology to move forward, rather than stagnate.
- Advice for entrepreneurs: embrace the uncertainty of not knowing what's next; keep sights high; pay attention to new technologies; innovate; make changes along the way to be successful.

Is technological change coming too fast? "There's a gap between what people envision and what they can deliver. There is so much more we can do with (wireless) networks, e.g. a sea of sensors."

Mohan Gyani in conversation with Qualcomm CEO Steve Mollenkopf at TiECON 2014.

How does the cloud effect Qualcomm? "For quite some time, (desirable and effective) cloud based services have been needed to be successful in the smart phone business. The portfolio of cloud services has driven smart phone growth. Many mobile device components were needed for that: graphics, wireless connectivity/radios, CPU core, multi-media/video, etc."

What about the future? "Wireless networks will need to be able to move huge amounts of data through networks and this will be a huge opportunity for Qualcomm. We have to take advantage of that."

"Future cloud services will need more wireless bandwidth to and from mobile devices and connected sensors. At the (wireless) network edge, a decision must be made as to how much data to send back to cloud servers," Steve added. Note that this needed intelligence for decision making at the network edge was touched upon in future sessions and is not trivial.

Mollenkopf positioned Qualcomm as a company that "provides technology for partner companies to succeed without making a large investment (in wireless infrastructure). Qualcomm technology scales to a large number of developers." And that will produce a huge amount of wireless devices. "We want to get services enabled on 200M (mobile) devices per quarter," Steve added. Summing up, Mollenkopf said, "As technology gets integrated into mobile devices there will be more of a need for Qualcomm chip sets."

Post TiECON quote for clarification: "We work in a particular space that requires a lot of focus, so we have a very concentrated customer base, but we have an enormous partner base. So our direct customers are really much smaller than a lot of other companies in terms of raw numbers, but we deal with a lot of ecosystem players and we try to be the behind-the-scenes partner for technology."

Steve said that mid to lower tier smart phones will pro-

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20 YEARS OF MICC/*Continued from page 2*

countries, half of them of course from the home country, Malaysia. There were presentations of 102, organized into 21 technical sessions covering current hot topics such as broadband wireless access including LTE and WiMAX, WSN and M2M, other PHY and MAC layer technologies, and many more.

The conference was preceded by a one day of tutorials. Four tutorials were presented, on the topics Green Communications and Networking (Z. Niu); Mobile Broadband Evolution Towards LTE Advanced (T. A. Rahman); A New Approach in Testing of Broadband Access Networks (H. Gacani); and Power Amplifier Efficiency in Wireless Communication Systems (P. Varahram). Most of the tutorials were run for half a day, except the tutorial presented by Z. Niu, which went for a full day. To save costs, the tutorials were held at the International Islamic University, about half an hour's ride from the conference venue in the city. Unlike in previous years, the tutorial fee was bundled together with the conference fee, making it easier for the organizer to hold the tutorials with certainty.

Two keynote speeches were delivered, one on each day. The first was given by Hikmet Sari from Supelec, France, who is now ComSoc's VP for Meetings and Conferences. He discussed the design of power amplifiers for OFDM systems. The other keynote was on Green Communications, given by Zisheng Niu of Tsinghua University, PRC. Another special event was an industry panel on Green ICT, given by two representatives from industry.

The highlight of MICC was the conference banquet. We invited several members of the team that first started the event 20 years ago to celebrate with us. Five of them attended. The event was graced by life traditional music known as the "chak-lem-pong", similar to the Xylophones. With their artistry, the musicians turned the basic musical elements into beautiful tunes, and delivered music from the oldies to the present. In his welcoming speech, our General Chair, Dato' Hod Parman, expressed his delight to see these pioneers and gave encouragement to the young attendees to volunteer for future ComSoc events. He then presented plaques in appreciation to these pioneers.

The next MICC is already being planned, expected to be held in 2015 in Kuching, the capital city of the state of Sarawak on the Borneo Island. Sarawak is well known for its vast equatorial hinterland, and it is home to many indigenous people who still preserve their native culture. There are a variety of species of flora and fauna coupled with some breath taking natural landscapes, among which is the Muru limestone cave system, said to be the largest in the world, until recently. This event is surely not to be missed.

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duce future growth for the smart phone market. The high end is still growing, but it's growth rate is not as high as it was.

Note: IDC forecasts that high-end smartphone growth will be in single digits by 2017, while number one maker Samsung has lowered its internal smart phone sales forecast for 2014.

Mollenkopf: "Qualcomm is getting the cost structure right for these lower priced smart phones. A lot of the Intellectual Property (IP) for high end smart phones trickles down to the mid and lower end."

Steve stated that the Internet of Things (IoT)[1] was an extension of Qualcomm's existing business, as it requires both mobile connectivity and wireless LANs (e.g. WiFi, Zigbee, etc). Note that Qualcomm now owns Atheros Communications, a leading WiFi/wireless LAN chip maker. The company is diligently working on the "Internet of Everything in close proximity," to be described in part 2 of this article series.

"Qualcomm is building a portfolio of products to enable the Internet of Everything (IoE)," Steve said. "Scale is very important to deliver on the very large surface area that will exist for the IoE/IoT," he added.

What about "wearables"? "Health monitoring and wireless healthcare in general is a great but different opportunity for Qualcomm. What's needed is for the health care industry to fully embrace innovation in the IT industry. The supply chain for wearables is an opportunity."

In closing, Mollenkopf said what every entrepreneur is told many times: "We need to make mistakes and (quickly) learn from failures."

Resources:

[1] http://tiecon.org/content/conference-grand-keynote-i-steve-mollenkopf-qualcomm-ceo
[2] Several articles summarizing TiECON 2014 are at: http://community.comsoc.org/blogs/posts

[1] *Qualcomm refers to IoT as the Internet of Everything or IoE.*