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CHAPTER REPORT

Three Years of IEEE ComSoc Student Activities in UFPA, Brazil

By Brenda Vilas Boas, IEEE ComSoc UFPA Student Chapter Chair, Brazil

The UFPA Belém IEEE ComSoc Student Chapter, located in the North of Brazil, was founded in October 2015 as part of the UFPA Belém IEEE Student Branch. Igor Freire, an electrical engineering graduate student at the time, led the petition process and was the first chapter chair. Professor Aldebaro Klautau, an IEEE senior member, has been the chapter advisor since its founding. The petitioners of the IEEE Communication Society student branch were: Igor Antonio Auad Freire, Igor Mesquita de Almeida, Pedro dos Santos Batista, Leonardo Lira Ramalho, Diego de Azevedo Gomes, and Brenda Vilas Boas.

In November 2015, the UFPA Belém IEEE ComSoc Student Chapter hosted its first activity, co-sponsored by the UFPA Graduate Program in Electrical Engineering (PPGEE/UFPA). It was a seminar on Signal Processing for MIMO Systems and a workshop on Scientific Writing, both presented by Professor João Paulo Lustosa da Costa, an IEEE senior member, from Brasilia University (UnB).

The 2016 activities started with a keynote from Professor Vladimiro Miranda, an IEEE Fellow, from INESC System. The keynote was entitled "Cognitive Architectures: A Smart Grid Inspiration" and was co-hosted by the Telecommunications, Automation and Electronics Research and Development Center (LASSE). In August 2016, the UFPA Belém IEEE ComSoc Student Chapter received a visit from Professor Aurenice M. Oliveira, an IEEE Senior member, from Michigan Technological University, who gave a seminar on "Opportunities for Collaboration in Undergraduate and Graduate Studies at Michigan Tech." The event was co-hosted by the Laboratory of Applied Electromagnetism (LEA). Following the same year, the chapter received an EPICS in IEEE grant from the IEEE Foundation to cooperate with LASSE in bridging the digital divide in the Amazon through the CELCOM project, a community network pilot that aims to provide GSM and Internet connectivity for isolated rural areas.

UFPA Belem IEEE ComSoc Student Chapter meeting with professor Ugo Dias, chair of the IEEE ComSoc professional chapter of Centro-Norte Brazil section. From left to right: Aldebaro Klautau (advisor), Ugo Dias, Igor Freire (2015-2017 chair), Leonardo Ramalho, and Brenda Vilas Boas (2018 chair).

Professor Aurenice from Michigan Tech during her visit on 2017 presenting the seminar on "Enabling Autonomous Vehicles with Vehicular Communication Networks."

In January 2017, the student chapter hosted a seminar on "Hyper-Spectral Image Analysis" which was presented by Tales Imbiriba, a post-doctorate student at Federal University of Santa Catarina (UFSC), Brazil. The event was co-hosted by LASSE. Given the fruitful partnership established, Professor Aurenice M. Oliveira revisited our chapter in spring of 2017 to present a workshop entitled "Enabling Autonomous Vehicles with Vehicular Communication Networks." In this same year, UFPA Belém IEEE ComSoc Student Chapter hosted the IEEE Day 2017 which was a roundtable event entitled "Technology for Sustainable Development of the Amazon" with representatives from the Science and Technology State government, research institutions (LASSE and Embrapa) and startups (Barco Hacker and Terras App Solutions). They participated by talking about their perspectives to develop the Amazon while keeping its biodiversity.

In February 2018, Brenda Vilas Boas, an electrical engineering master student, was appointed as the new student chapter chair. In April and May 2018, the UFPA Belém IEEE ComSoc Student Chapter organized a tutorial entitled "IEEE 802.11ay: Introduction to the 1st Standard for 100Gbps Wi-Fi." The tutorial was presented by Dr. Claudio da Silva, a wireless engineer at Intel Corporation, a member of the connectivity standards group focused on the development of the IEEE 802.11ay, and an IEEE senior member. The tutorial took a total of eight hours, starting with an overview of IEEE 802.11ad as a building block to explain the evolution to the new standard, IEEE 802.11ay. The event was organized in partnership with the LASSE and IEEE Young Professionals Centro-Norte Brazil section. During the summer, Brenda participated in the Brazilian National Meeting of IEEE Student Branches (RNR 2018) representing the UFPA Belem chapter in the reunion of Brazilian IEEE ComSoc Student Chapters. The chapter was awarded second place in the success cases, management and partnership category because of its EPICS in IEEE project, which is being developed since 2016 in partnership with LASSE and other institutions. In September 2018, the chapter organized a local event in preparation for the Brazilian Symposium on Telecommunications and Signal Processing (SBRT 2018) with talks on 5G, IoT, and a technical section with papers that were approved for the conference.

COMSOC SISTER SOCIETY

The Forum for European ICT & Media Professionals (FITCE) Explores the Delivery and Consumption of Digital Media

By Edward Smith, UK Representative on the FITCE Board

FITCE is a federation of national associations in each of its 10 member countries and is a Sister Society of the IEEE Communication Society (ComSoc), with which it signed cooperation and publication side agreements in 2015. It allows its members to keep in touch with leading ICT developments and aspires to build strong cultural and business ties between European ICT (Information and Communications Technology) professionals. This is achieved by encouraging members to benefit from the experience acquired by other members in all ICT fields and in particular provide support to young professionals as they develop their careers.

FITCE organizes an annual congress for improving information and knowledge exchange, communication, networking and relationships among members. This year's conference was held in Salford and is described below, together with an overview of the activties of national organizations. For more details please link to the FITCE web site at www.fitce.eu.

The FITCE Conference

The 57th FITCE Congress considered the delivery and consumption of digital media and was held in MediaCityUK, Salford, UK on 6–7 September 2018. There were 75 delegates, who enjoyed four technical sessions delivering 15 papers, seven keynote speeches, an absorbing technical visit to dock10's studios, and an entertaining and thought provoking roundtable. The conference was staged as a joint venture between FITCE and the University of Salford.

Professor Nigel Linge and Vice-Chancellor, Professor Helen Marshall, both of the University of Salford, opened the conference and emphasised Salford's close links with industry, in particular, its links with the media companies located at MediaCityUK. Andy Valdar, President of FITCE, described the impact that video had had on the market place and the influence that media and telecommunications technologies have on each other.

Jamie Hindhaugh, the Chief Operating Officer of BT Sport, then spoke about the BT Sport studios facility and its construction, the service being built and launched in nine months. Ian Macrae, Director of Market Intelligence at Ofcom, spoke on "the changing picture: trends in how we access and watch TV and other video."

In the first paper session, Andy Sutton of BT described BT's 5G Network Architecture and its role in enabling the future delivery and consumption of digital media. Juan Riol Martin of Universidad Carlos III de Madrid provided a techno-economic analysis of suitable 5G use cases. Hassan Hamdoun of BT then described media delivery, and Berit Schubert of ATOS (Germany) described "pathways to digital transformation in the media industry".

Laurence Murphy of the University of Salford considered the evolution of broadcasting and the marriage between broadcast and communications technologies.

Ed Smith of BT described QUIC's role as a transport mechanism for IP video, with particular emphasis on performance requirements. Tom Evens of Ghent University then examined "Platform Mania in Television Distribution," concluding that TV is not dead, but is entering a new era of competition, where its revenues are under threat. Doug Williams of BT considered object based media distribution and Silvia Rossi of UCL talked about learning optimal streaming strategies for virtual reality applications.

Professor Nigel Linge chairs a roundtable discussion on the future of media and communications.

Ian Wagdin, the Senior Technology Transfer Manager with BBC R&D, opened the second day by examining developments in TV broadcasting. This was followed by a session on new TV and video services from Fernando Garcia Calvo, the Director of the Huawei Video Business in Europe.

Brahim Allan from BT explored the subjective testing of High Dynamic Range. Ed Smith and Mauro Ugolini of Roma Tre University asked the question "What is the future for media in the Post Information Age?" Peggy Valcke of KU Leuven followed this by looking at the proposition, "Is regulating the video-sharing platform a slippery slope towards Internet censorship?" Seamus Simpson of the University of Salford then spoke about public policy and media convergence paths and their limitations and prospects.

In the afternoon, Andy Valdar of UCL looked at important developments in telecommunications network architecture and considered the important architectural facets of commercially successful telecommunications services. Doug Williams of BT asked the question "Does exploding data drive a demand for Gigabit connections?" He explored what was driving bandwidth growth and what that meant in reality. Finally, Jon Hart from BT described "5G Network Slicing and Convergence: Key Technologies in Next Generation Networks."

This was followed by a roundtable discussion that examined the question "Where will we be in five years?" The panelists gave some highly individual and insightful responses.

The major conclusions of the conference were that there is a growing dependence on media and networks, creating both opportunities and challenges for telecommunications companies. Artificial Intelligence, improved display and compression technologies, Virtual Reality and 5G radio are expected to be significant enablers of change. Age demographics will play an important part in deciding the mix of media that has to be delivered, with simultaneous access of multiple devices being common.

The media market is changing rapidly and agility in addressing markets is a critical success factor. New formats such as UHD and HDR will enhance the viewing experience. Advertisers exert considerable influence in the marketplace and have significantly exerted pressure on platforms to remove questionable content.

Regulation has struggled to keep up with changes in the market, and while it has focussed on promoting competition, there are issues about the abuse of significant market power and the impartiality, accuracy and balanced nature of some of the material shown.

Around Europe

This has been a hectic year for Belgium, who held eight events, including a symposium in Ghent on Fibre to the Home, which attracted over 100 people. Another symposium was held to investigate the impact of Artificial Intelligence. Following the successful Fibre to the Home webinar, a session on 5G is also

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CONFERENCE REPORT

Amateur Radio Lectures in Poland and Uzbekistan

By Miroslav Skoric, IEEE Austria Section

One of the conferences with the longest traditions in IEEE Region 8, The International conference of Computer Networks (CN2017) was held in Zamek na Skale (The Stone Mount Castle), a remote peaceful place in southwestern Poland. The event was dedicated to all activities related to computer networks, distributed computer systems, and nano- and quantum-technologies and molecular networks. Among others, CN2017 included a 'Teleinformatics and Telecommunications' track that was focused on topics connected with computer communication technologies considered in the context of computer networking and informatics. Therefore I took the opportunity to give a half-day tutorial lecture on amateur radio communications that represent an alternative method for establishing a virtual network in between computers worldwide. At the same time, that session gave me a good opportunity to display and describe actual radio electronics production, including a comparison of older ('big and heavy') and modern ('small'n'light') approaches in the area of portable devices.

The 25th jubilee edition of the International Conference on Computer Networks was planned for June 2018 at the Faculty of Automatic Control, Electronics and Computer Science of the Silesian University of Technology in Gliwice, the place where the conference originated.

This time my tour program was very tight, so I had to leave the conference venue almost two days earlier, in order to catch a train to Wroclaw and from there to Rzeszow. After some eight hours on trains, I arrived at the destination where a seminar for students and staff at Politechnika Rzeszówska (Rzeszów University of Technology) was scheduled. There I had an opportunity to talk about an ad-hoc experiment I had made during the train travel, related to tracking my own position (and locations of nearby radio amateurs in Poland) by using my radio equipment and GPS receivers. The lecture was opened by Prof. Dominik Strzalka, vice-dean for development and cooperation with the economy, Faculty of Electrical and Computer Engineering. Two local radio amateurs, Mateusz Lubecki SP8EBC and Adam Nazimek SP8N informed the audience about the actual status in local and regional development of radio communications in the southeast of Poland. After a short one-day stay in Rzeszow, I rushed by another train to Krakow where I had the final activity in this tour: a three-hour informal presentation and discussion with local technology enthusiasts. The event was promoted on the social media pages of the SP9KPG amateur radio club, OT12 division of PZK (Polish amateur radio union) and HS Kraków Foundation.

Displaying older and modern radio electronics at International conference of Computer Networks, CN2017.

The 2017 IEEE/IFIP International Conference in central Asia on Information Science and Communications Technologies (ICISCT 2017) was held in Tashkent, the capital of the Republic

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CHAPTER REPORT

A Note from San Diego for Year 2018: Again, Another Hectic and Impactful Year for the ComSoc San Diego Chapter!

By Liangping Ma, IEEE ComSoc San Diego Chapter Chair, InterDigital Inc., USA

San Diego is a popular city for hosting various conferences due to its mild weather, beautiful coastlines, and more importantly, its vibrant and welcoming technical communities.

On 23–27 July 2018, San Diego was the site of the IEEE International Conference on Multimedia and Expo (ICME), one of the leading conferences on multimedia signal processing, computation, communication and applications. Local universities such as the University of California–San Diego and San Diego State University, and local companies such as Qualcomm and InterDigital, were among the key supporters of the conference.

Liangping Ma presenting a Distinguished Lecturer talk titled "5G - Technologies and Standards" on August 2nd, Huntsville, Alabama. Photo courtesy of Josh Langford.

This year's theme was "Data-driven Media Computing," with keynote speeches, tutorials, and many paper sessions and workshops featuring big data and machine learning applied to multimedia applications. Many excellent papers and demos were presented. Notably, the Diamond Best Paper Award went to Yunfei Chu, Chunyan Feng and Caili Guo of Beijing University of Posts and Telecommunications for the paper "Social-guided Representation Learning for Images via Deep Heterogeneous Hypergraph Embedding." More information about the conference can be found at http://www.icme2018.org/

IEEE ICME 2018 award banquet (from left to right) on July 25, La Jolla: Prof. Pamela Cosman (Award Committee Chair) was presenting the Diamond Best Paper award to Yunfei Chu and Prof. Caili Guo. Photo courtesy by Nikki Hsueh.

As usual, the ComSoc chapter organized many high-quality technical at this year's conference. One of them was about quantum information, a fascinating field with a potentially profound impact on the computing and communication industries. In recent years there has been a rapid increase in investment in this field from major industry players as well as governments.

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CHAPTER REPORT

ComSoc Jordan Chapter Engages 2018

By Sami Aldalahmeh, IEEE Jordan Section Communications Society Chapter Chair

With new blood joining the ComSoc Jordan Chapter executive committee (ExCom), the ExCom adopted the strategy of engaging ComSoc members on every level. ComSoc Members fall into three main categories: students, academics and professionals. Every tier has unique characteristics that should be considered when approaching them.

Although there is no clear single strategy-fits-all to approach those categories, social networking is the means to reach a significant number of people. Thus, the ExCom started by focusing on the official facebook (FB) page. In less than a year we managed to increase FB followers from less than 10 to around 800. This ensured that we had very good exposure for our activities. Students were the first class to be targeted. We decided to reach out to students by setting up ComSoc booths in student-related events. The first event the ComSoc Jordan Chapter attended was IEEE Grand Tech, which is an annual technology fair for the computer society student chapter held this year in the Hashemite University in April. The attendance was decent but as expected. Part of the reason was not having virtually no printed material for publicity. Hence, we designed a couple of brochures highlighting the benefits of ComSoc membership.

Nonetheless, we received positive feedback from the students. In fact, not long afterward, students from the Al-Balqa' Applied University (BAU) expressed their wish to establish a ComSoc student chapter. The second student event attended was a promotional talk at the BAU about the benefits of ComSoc membership, intended to support the new student chapter, given by the ComSoc Jordan Chapter chair, Dr. Sami Aldalahmeh. Fortunately, the BAU ComSoc student chapter has been very active and participated in organizing the IEEE Jordan Section and Young Professional (JSYP) 2018 event. The ComSoc Jordan Chapter participated in the technical program of the JSYP 2018, in which it provided a technical workshop titled "Software Defined Radio (SDR): Road to 5G," in addition to a roundtable discussion with the students about the requirements of the 5G-based market.

In addition, a booth was reserved for us and at this time we had the opportunity to present more publicity material, also designed by us. Finally, the ComSoc Jordan Chapter presented a live SDR on IEEE Day at BAU.

Our next event was to target academics, who are a vital part of the community. However, their interests are very different from the students' interests. In general, academics, being one myself, are more interested in technical topics. As such, the ComSoc Jordan Chapter hosted a professional from National Instruments (NI) who gave an interesting lecture on SDR and its potential in research.

The ComSoc Jordan Chapter obtained an interesting list of recorded training courses on timely topics such as LTE fundamentals, IoT and software defined networks (SDNs). Those courses where offered with a generous discount from ComSoc headquarters. After a FB survey on our page, it seemed that IoT is the most popular topic to our members. Thus, we organized an event centerd around ComSoc's training course titled "Wireless for IoT" with coffee breaks and commentary.

Our members also contributed to the ComSoc Jordan Chapter by volunteering to give technical talks as well. Dr. Ghazi Al-Sukar, a past chair, gave an energetic and engaging talk about cognitive radios.

Finally, we are considering methods to connect with professionals, the last group of our member base. Unfortunately, it seems to be difficult to reach out to them due to their busy schedules. However, we are working with the IEEE young professionals to find effectives ways to connect with them. In the end, engagement with members with different backgrounds is what enriches IEEE ComSoc.

Grand Tech booth.

Wireless for IoT course.

FITCE/*Continued from page 2*

planned to be made available across FITCE Europe. In addition, the organization held a competition for young professionals to share their ideas and vision on major technology trends, asking the question: "Are you an AI-believer, robotics-enthusiast, or a non-believer?"

Poland has seen modest increases in membership and now offers an award for the best M.Sc., and the Polish Science Academy invites the winner to give a presentation. The organization has also helped with some external consultancy projects, including providing expert witness support to the Polish courts. Work is ongoing in producing a Polish Telecommunications history.

In Spain, they recently held a conference dealing with IT issues, and the organization has prepared a number of reports on new technologies, as well as preparing training courses for engineers.

The UK organization remains very active and has held several major seminars on topics including The Future of Business Services, 5G–More Than Yet Another Generation of Mobile and the Future of Online Entertainment. The popular ITP Family Christmas lecture, an interactive look at telecommunications, was given in Birmingham, Ipswich, London, Salford and Glasgow. The annual ITP Annual Dinner and Awards, where achievements across the industry are honored, was held in November. In addition, there were visits to the BT Archives, the Blandford Museum, Bletchley Park and the Cisco Experience.

AMATEUR RADIO LECTURES/*Continued from page 3*

of Uzbekistan. My participation included a half-day tutorial session, a keynote during the opening session, as well as a four-day seminar ('training') for local students and teachers. The conference was greeted by the H.E. Minister for development of information technologies and communications.

Although ICISCT 2017 was a rather pioneering event of that kind at TUIT (Tashkent University of Information Technologies), the whole three-day program went smoothly, thanks to the organizational efforts of Mr. Javlonbek Abdujalilov, head of the International Relations Department and assistant professor in the Telecommunication Engineering Department. As expected in that post-soviet part of mid-Asia, the majority of domestic participants were not very fluent in English (but were rather good in Russian), so the assistance in translation was provided by Ms. Nayira Ibragimova from the English language department of TUIT, who also provided much help during the radio seminar.

Besides academic activities, the organizers provided a rich social program for a small number of foreign guests, visiting local attractions of national and historical importance, as well as tasting local delicacies. During a gala dinner with TUIT's vice-rector, the guests were informed about the ambitious plan for the period 2017-2021, when TUIT should become the most prestigious university in the country, while Uzbekistan would achieve the leading position among the countries in central Asia.

The four-day amateur radio seminar was organized into 80-minute lectures per group, where three groups of participants (two student groups, one teacher group) were attending the sessions each day. Thanks to the efforts of TUIT's rector, Prof. Teshabaev, I received special permission from the Ministry for Development of Information Technologies and Communications to temporarily import radio transmitting equipment and accessories and bring them to the University. That was an opportunity for seminar participants to become familiar with foreign technologies.

My overall impressions were positive. Both young and seasoned participants have expressed visible interest in starting amateur radio activity and in establishing a 'ham club' at TUIT. In years to come there will be more tutorials and workshop sessions. Prospective presenters are welcomed to contact me at skoric@ieee.org

SAN DIEGO/*Continued from page 3*

To help IEEE members better understand the fundamentals and the state of the art of this field, we invited Prof. Massimo Franceschetti of the University of California–San Diego, an expert in the field, to give a three-hour talk on April 20th. The talk included a tutorial on quantum information theory, followed by a derivation of a quantum entropy bound for band-limited radiation in free space. The talk was met with enthusiasm from the attendees, who raised many interesting and sometimes deep questions. Many attendees are very happy to see these kinds of events.

Wireless communication technologies are experiencing a major transformation. To help students and professionals catch up with the latest developments, on 1 October the University of California–San Diego's Qualcomm Institute (QI) and the Electrical and Computer Engineering Department launched the first seminar series on communication theory and systems given by industry leaders (http://seminarseries.ucsd.edu/), free to all, subject to seating availability. This initiative is expected to greatly benefit the local communities, including IEEE ComSoc.

The fifth-generation (5G) cellular system is on the verge of commercial deployment, and there are huge demands from ComSoc members in many locations for talks on the subject. As a ComSoc Distinguished Lecturer, from June to August, I travelled to Canada and the U.S. to talk about 5G, visiting Calgary and Winnipeg in Canada; Pomona, California; Blacksburg, Virginia; and Auburn, Birmingham, and Huntsville, Alabama. My talks focused on core technologies illustrated with simple examples, and covered standards and commercialization. They were well received and the trips were enjoyable.

The IEEE ComSoc San Diego chapter is fortunate to have strong support from the local communities in bringing information and providing services to its members. In return, it strives to better serve the local communities and communities beyond San Diego.

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