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CHAPTER REPORT

2019 ComSoc Summer School in Austin, TX, USA

By Fawzi Behmann, Chair of the IEEE ComSoc Central Texas (Austin) Chapter, USA

As the chair of the ComSoc and Signal Processing joint chapter in Austin, we have opportunities to reach out to the community and industry. National Instruments is a major industry leader in Austin and ComSoc and National Instruments have collaborated on many conferences and events. Our chapter continues to participate annually in National Instrument Week and support the section at the IEEE booth. Early in 2019, the chapter helped the ComSoc Summer School organizing committee by promoting the Summer School with speakers and promoting the event.

The 5th Edition of the IEEE ComSoc Summer School was held on 16-19 July 2019 at National Instruments Corporation, Austin, Texas. It was designed to help kick-start the careers of over 24 new professionals, Ph.D. candidates, and researchers in wireless communications from around the world.

The event featured a highly interactive classroom environment with an intense focus on learning the cutting-edge trends in communications technology, as well as laboratory tours, demonstrations, hands-on workshops, poster presentations, and networking activities.

The four-day program consisted of 14 lectures by world-leading professors, industry leaders, and executives. The program focused on applications in specific industries including commercial cellular wireless service, automotive V2x and autonomy, and defense funded research. The workshop featured Massive MIMO and mmWave technologies to create real-world wireless testbeds using Software Defined Radio (SDR) and Software Defined Networking (SDN) techniques.

Heena Rathore speaking.

Fawzi Behman and a group of international students attending the School.

Brian Kelly speaking.

Among the speakers were James Kimery, NI Marketing Director of Wireless research, who spoke about Evolving 5G and the Challenges Ahead–5G 2.0. Sarah Yost, a senior manager at NI, provided an interactive demo using FPGAs and SDRs to create real-time testbeds

We were pleased to have three speakers from the Central Texas section, including Dr. Brian Kelly from the University of Texas in San Antonio, who spoke on Software Defined Radio Open Platform, and Dr. Heena Rathore, from Hiller Measurements, who spoke about "Deep Learning Based Security Solutions for the Internet of Medical Things". Finally, I had the opportunity to share my experience and provided a keynote on "Collaborative IoT, 5G and AI Empower Building Smart Solutions towards Smart Cities".

The event was very successful. The students had a great time networking and had the opportunity to visit some attractions offered by Austin.

CHAPTER REPORT

Thai Telecommunications Knowledge Management Forum Celebrates 10th Anniversary

By Keattisak Sripimanwat, Chair, IEEE ComSoc Thailand Chapter

On the occasion of the 10th anniversary of Thai Telecommunication Knowledge Management (TTKM) Forum, related statistics of the past projects are reported with the collection of old time newsletters and photos at www.quantum-thai.org/10th-ttkm-anniversary. Thanks to all sponsors and supporters for those successful public services of the past decade.

Since the first result on "A Brief History of Communications" – A Fifty Year Foundation for the Future (1952-2002) of the IEEE Communications Society was translated into Thai and published in the year 2008, it sparked consequent ideas regarding local historic relevance. The Thai Telecommunications Encyclopedia (2009) with a large content platform was then set up. Following was a project on benchmarking of national technology advancement with coinciding global stories, an elegant pictorial history and milestones granted by the IEEE Foundation, which was published in 2010. The TTKM portal was then formed in the same year to manage and utilize those valuable resources from the national archives, IEEE global history networks, and many others.

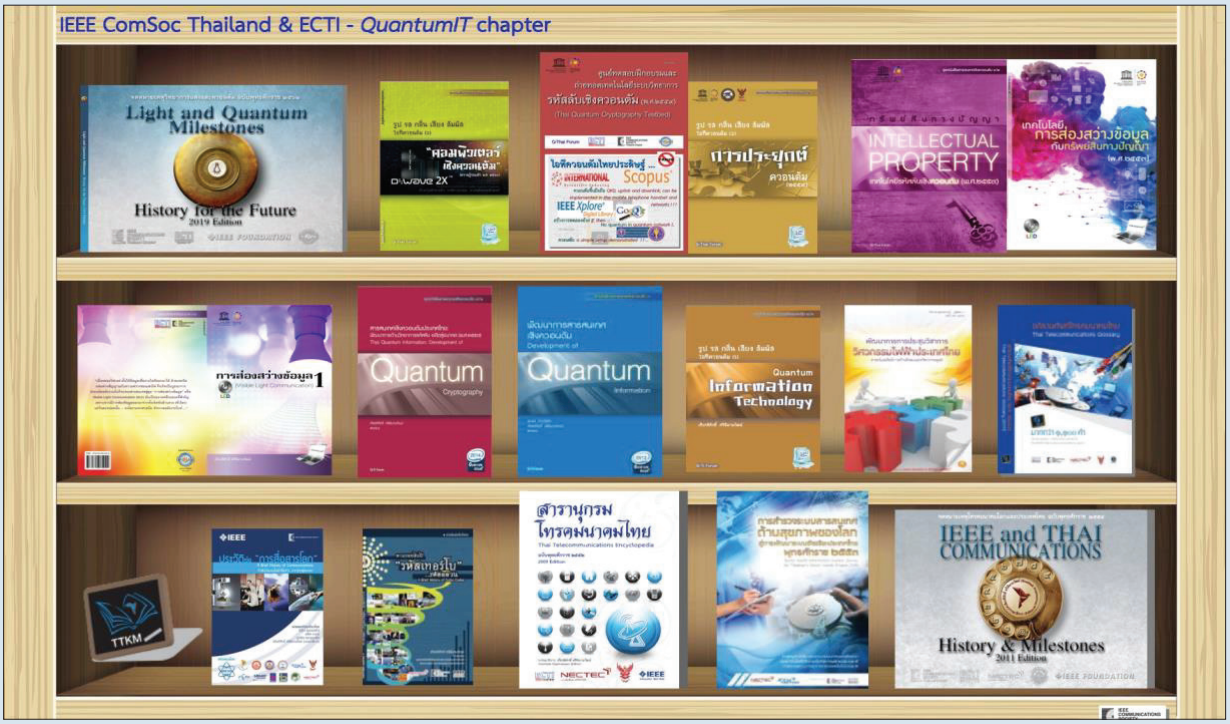
To date, 17 titles have already been published covering a wide range of audiences. Generally, four target groups were categorized in order to ensure appropriate results for each background. Those are: technical book; reference (encyclopedia, glossary, and standards); public realization or easy access story for young generation and non-technical background user (contemporary applications, pictorial and milestone, and Q&A); and an executive summary for policy makers (testbed and intellectual property survey, technology foresight and roadmap, and others).

Till this year, more than 18,000 hardcopies including 6,000 CDs and 4,000 posters and postcards in total have been distributed nationwide through the network of the IEEE Thailand section and institute for the promotion of teaching science and technology (IPST). Those free of charge results were also delivered as a handout for school talks and seminars, workshops and conferences, and exhibition and dinner talk. In addition, the entire electronic version has been downloaded approximately 26,000 times, and a hundred videos (yearly news, technology digest programs, and other topics) have over 48,000 views.

Indeed, past TTKM activities were enhanced from many strong collaborations. The national regulator (National Telecommunications Commission (NTC)) was later combined with broadcasting and transformed to be NBTC, supported heavily on building information infrastructure for the first 2008 encyclopedia and a few later role model projects. Moreover, the Thai ComSoc Chapter as coordinator also proudly bridged the local ECTI–Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology association to be a sister society with the IEEE Thailand Section. As a result, a few national and international agreements were signed. Synergy on education and humanity projects for overcoming the digital divide were proposed jointly, resulting in many more seminars, conferences and publications. Impressively, those exemplary forums also influenced a few more sub-technical fields. New forums of Thai quantum information (Q-Thai.org) and visible light communications (LED-SmartCon.org) were subsequently founded. The extended platform later benefited another highlight pictorial project on "light and quantum milestones (2019)" as a part of the celebration of the International Day of Light (IDL) proclaimed by UNESCO. It was another time of honor, and the IEEE foundation fully supported fully that youngest project.

In conclusion, during the year of the COVID-19 pandemic (2020) all the activities over the past 10 years are reunited and celebrated online. Remarkably, one of many interesting feedbacks is conveyed as: "they are not only accomplished to educate for public understanding in the main field, but also to strengthen a new technical branch and raise awareness on related fraud or fake technology and news". Suggestions are also shown, for instance, the Thai ComSoc chapter should engage with how to play a role for healthy people and society, how to promote more safe and creative media with good media ecosystem, and how to empower women in local engineering community.

Thanks to all messages. They have been addressed as the next challenge toward the new normal society ahead.



The collection of the past seventeen projects.

CONFERENCE REPORT

Second South-American Colloquium on Visible Light Communications (SACVLC) at Universidad de Santiago de Chile, Santiago, Chile

By Ismael Soto, SACVLC 2020 Organizing Committee Chair, and Diego Dujovne, IEEE ComSoc Chile Chapter Chair, Chile

The ComSoc Chile chapter is pleased to announce the sponsorship of the Second South American Colloquium on Visible Light Communications (SACVLC), organized by the University of Santiago de Chile. Visible Light Communications is an evolving research topic, along with a number of new real-life applications.

Visible Light Communications broadens the spectrum of wireless technologies but complements and presents a number of advantages such as increased bandwidth and a focused beam (visible), providing spatial re-use and increased security, as well as the possibility of implementing hybrid systems and indoor and underground location and tracking services.

SACVLC 2020 is a colloquium dedicated to research and development in industry and among academics regarding visible light communications. The development of this type of technology is not only based on the topics of the specific physical layer of light, but also on data communication, and location and detection operated in unlicensed bands.

In 2017, the First South American Colloquium on Visible Light Communications was organized, which took place in the Fundación Telefónica Auditorium, and featured an exhibition of 14 papers by researchers from around the world. This instance counted with four master classes to introduce and explore the current state of the art of VLC from the main leaders of research.

The second VLC Colloquium, called the "South-American Colloquium on Visible Light Communications (SACVLC)", was held on June 4 and 5, virtually, using the Zoom platform and streaming through YouTube. Thirty-nine papers were received, where 18 were presented in a mode that was due to the pandemic and a previous postponement due to the social outburst. There were up to 31 remote attendees on the Zoom platform, plus approximately 29 attendees on the YouTube simultaneous streaming, who were able to participate actively during the conference.

They presented five Key Note Speakers on the following topics:

- Dr. Zabih Ghassemloand presenting "Organic LED-basedVisible Light Communications".
- Dr. Rafael Pérez Jimenez presenting "Trends on OCC Systems for IoT Applications".
- Dr. Marcos Katz presenting "6G and VLC: Opportunities and Challenges".
- Dr. Carlos Gutiérrez presenting "The Visible-Light Communications Channel in Vehicular Environments".
- Dr. Juan Pablo Hurtado presenting "Ventilation on Demand in Smart Mining Using VLC".

Among the papers presented, we can highlight advances and comparisons that improve both the sending and processing of signals in VLC in the following works:

- Performance Analysis of the Bias Tee Circuit in Visible Light Communications.
- Performance Analysis of OFDM-Based VLC Schemes in NLOS Channels.
- Hysteresis-based FSK Modulation for Visible Light Communication.
- Noise Reduction in VLC Channels using Wavelet Multiresolution Analysis.
- An Alternative to Filters for M-FSK Demodulation in VLC Systems.

All papers are available at https://ieeexplore.ieee.org/xpl/conhome/9126048/proceeding

We can highlight a set of papers that showed applications or potential uses of VLC in different contexts such as education, tourism, positioning and IoT:

•WORTECS: Enabling Untethered Virtual Reality through Optical Wireless Communication.

•Comparison of Metaheuristic Optimization Algorithms for RSS-based 3-D Visible Light Positioning Systems.

•Internet of Things in Smart City Santiago.

•Interactive Visible Light Communications (iVLC): Supporting Wireless Communications and Smart Visual Interaction with a Common Lighting Infrastructure.

•The Technological Link to the Communications Service of an Isolated Rural Population Using the Visible Light Communication.

All these works together represent a great advance in VLC, especially because it has been discussed how it can be applied to 6G and how it can be incorporated into more sustainable uses.

For more information about this event, please visit: https://www.sacvlc.cl

CHAPTER REPORT

News from the Finland Joint Chapter: 6G Summit, White papers and Webinars

By Harri Saarnisaari, Chair of the IEEE ComSoc Finland Joint Chapter COM19/IT12

The Finland Joint Chapter is cooperating with the 6G Flagship in Finland, inluding various events, white papers, seminars and so on. The first 6G Summit was held in March 2019 in Levi, and due to Covid the second one was organized online in 2020. Both were great successes showing the wide interest in 6G, or the next generation connectivity solutions.

The 6G Summit 2020 edition (https://www.6gsummit.com/) gathered over 400 registered participants before being cancelled in the previous week on those early dates of Covid influence to our daily activities. The summit was changed, ad hoc, to the online form, but that appeared to be a successful move despite all the rush and mess. The summit included a total of 161 presentations: seven keynotes, 37 invited presentations including 20 recorded videos and 10 slide presentations with audio, 75 technical papers including 29 recorded videos and 45 slide presentations with audio, and 42 posters.

This year's summit included the writing of white papers from various angles of 6G. These were published in June (see https://www.6gchannel.com/6g-white-papers/). Instead of meeting in face-to-face workshops during the summit, writing was totally online. Despite this inconvenience, writing groups did a good job. The topics covered UN's sustainability development goals, business, trials, broadband access, RF, security, artificial intelligence, remote area connectivity, machine communications, edge intelligence, networking and localization.

Activities this autumn include webinars based on these 6G white papers. In total, there will be 12 webinars, one related to each white paper. Each 90-minute webinar in Zoom is free of charge. The individual webinar sessions are open to anyone interested in 6G and include a deep dive into the specific 6G theme followed by a moderated 30-minute discussion. In addition, a recorded video of the webinar will be openly available after the event. The first webinar was on Wednesday, September 9 at 17-18:30 FI time.

The full webinar series program and information on free registration for individual webinars is available at https://www.6gchannel.com/events

6G summit opening ceremony (picture from 2019 edition since 2020 was online).

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