

2016 IEEE Singapore Section Report

PART A - SECTION SUMMARY

A.1 EXECUTIVE SUMMARY

2015 was another eventful and fruitful year for the IEEE Singapore Section. Altogether, the Chapters and the Section, managed to organize 202 technical events, 23 social events and 69 administrative events as of 16 November 2015. The active volunteers in Singapore spent a lot of time organizing and planning all the activities that happened 2015. This is a remarkable achievement.

The Section is also actively involved in the National Committee of Engineering Organizations (NCEO) so that voices of Engineers can be channelled to the national level through the Institution of Engineers, Singapore (IES). Our Section also joined hands together with IES and for the past six years in presenting the IES/IEEE Joint Medal of Excellence Award.

In addition to holding regular Executive Committee and General Committee Meetings, the Section was honoured to have hosted some distinguished guests - the IEEE President (Howard E Michel) and Region 10 Director Ramakrishna Kappagantu.

The Section also hosted a meeting and dinner with Ms Andrea Saks. IEEE Singapore Section is exploring the use of technology as a key enabler to enhance and enrich the daily lives of Singaporeans with disabilities, the elderly and low-income group. With this in mind, Ms Andrea Saks, who is also the key person in the creation of all accessibility events in ITU, and currently is the convener of the recently formed joint coordination activity on accessibility and human factors, felt that Singapore is well placed to take the lead.

1. AWARDS RECEIVED

2015 IEEE Communications Society Best Young Researcher Award has been received by Mo Li.

Two teams from the IEEE Singapore Section have been selected for the AIYEHUM project funding for the year 2015

2. TENCON 2016

The Section will be organizing TENCON 2016, the annual flagship conference of the IEEE region 10, which will be held from 22 -25 November 2016 at Marina Bay Sands. Under the theme of TENCON 2016, "Technologies for Smart Nation", number of oral/poster technical sessions in all areas of electrical and electronic engineering including information technology will be presented at the conference.

3. SHELL STEM YOUTH INNOVATION CHALLENGE 2015

Early in January, STEM Inc. approached IEEE Asia Pacific Ltd to collaborate on the SHELL STEM Youth Innovation Challenge 2015 to make it a bigger event in its second year. Together with the IEEE Singapore Section, SHELL and the Ministry of Education, and with STEM Inc and IEEE Asia Pacific Ltd coordinating, the Challenge was opened up to 25 secondary schools in Singapore. It culminated on the 13 July with the final judging of projects and award

presentations to the winning teams. Guest of Honor, Prof. Low Teck Seng gave a speech on Singapore's sustainability and interest in young innovative minds to take Singapore forward, and presented the winning teams with their prizes.

IEEE members in Singapore served as volunteer mentors to 45 groups of 15 years old students from the participating 25 secondary schools in Singapore. Over 5 months, IEEE volunteer mentors worked with the students on their projects on Food, Water, Energy and Eco-friendly materials. Special thanks was given to the 21 IEEE volunteer mentors for dedicating time and providing their industry experience to the students on their projects. As much as the students gained, this was a rare opportunity for our IEEE members to contribute directly back to the nation in moulding Singapore's future engineers, scientists and professionals.

A.2 FINANCIAL REPORT

Our consolidated financial position continues to remain healthy with the active support of all the chapters under our section. Our total assets, which includes seed monies, fixed deposits, cash & cash equivalents and other receivables held by the Section/Chapters and loans to conference accounts, totaling just over S\$2M, have been fairly stable for the last few years. This level of reserve is not excessive as the Section comprises 30 sub-entities (28 Chapters/council and 2 Affinity Groups), each recognized as a full-fledged IEEE Organizational Unit in terms of its privilege to organize events and to manage its own finance. The Section is registered under the category of Trade Association with the Registry of Societies of Singapore. This status allows the Section/Chapters to generate surplus revenues from organizing their activities such as running conferences and short courses, but requires the Section/Chapters to pay income tax.

PART B - ORGANIZATIONAL ACTIVITIES

B.1 MEMBERSHIP DEVELOPMENT PROGRAMS

IEEE Singapore Section has made a corporate tie-up with the Night Safari Singapore. Members are able to book the card and bring along 3 family members or friends.

The Section also negotiated special rates at these hotels: Marina Bay Sands, Furama RiverFront, Park Avenue Rochester Hotel and Park Hotel Alexandra.

Growing the membership base remains a challenge and our goal would be to strive for a sustainable increase in members by reaching out to more young students and Engineers this year.

Below are the tables for the past 3 years' membership:

IEEE Grade Description	Active Members (2015)
Student Members	83

Graduate Student Members	512
Associate Members	40
Members	1780
Senior Members	403
Fellow	33
Life Members	9
Life Seniors	4
Life Fellow	1
TOTAL	2865

IEEE Grade Description	Active Members (2014)
Student Members	68
Graduate Student Members	575
Associate Members	67
Members	1893
Senior Members	389
Fellow	32
Life Members	6
Life Seniors	5
Life Fellow	2
TOTAL	3037

IEEE Grade Description	Active Members (2013)
Student Members	79
Graduate Student Members	578
Associate Members	84
Members	1879
Senior Members	389
Fellow	28
Life Members	7
Life Seniors	4

Life Fellow	1
TOTAL	3049

B.2 Chapter Activities

The Singapore Section has 28 Chapters and 2 Affinity Groups. The Intelligent Transportation Systems Society, Singapore Chapter was formed on 28 January 2015.

Below is the vTools report as at 5 February 2016, of the summary of the Chapter activities held in 2015. Some Chapters still have not reported their activities in vTools:

S.N.	Section / Chapters / Affinity Groups	OU	Tech	Admin	Non-Tech	Total
1	Aerospace and Electronic Systems / Geoscience and Remote Sensing Joint Chapter	AES10/GRS29	11	6	0	16
2	Antennas & Propagation / Microwave Theory & Techniques Joint Chapter	AP03/MTT17	38	2	0	40
3	Broadcast Technology Chapter	BT02	1	2	1	4
4	Computer Chapter	C16	5	3	2	10
5	Circuits & Systems Chapter	CAS04	10	1	1	12
6	Consumer Electronics Chapter	CE08	2	2	0	4
7	Computational Intelligence Chapter	CIS11	10	2	0	12
8	Communications Chapter	COM19	12	0	0	12
9	Control Systems Chapter	CS23	0	0	0	0
10	Education Chapter	E25	0	0	0	0
11	Engineering in Medicine & Biology Chapter	EMB18	6	3	2	11
12	Electromagnetic Compatibility Chapter	EMC27	3	1	0	4
13	Industry Applications / Power Electronics Joint Chapter	IA34/PEL35	11	3	0	14
14	Industrial Electronics Chapter	IE13	5	4	2	11
15	INTELLIGENT TRANSPORTATION SYSTEMS	ITS038	4	2	0	6
16	Magnetics Chapter	MAG33	3	2	1	6
17	Nanotechnology Chapter	NAN042	6	0	0	6
18	Nuclear and Plasma Science Chapter	NPS05	8	3	0	11
19	Oceanic Engineering Chapter	OE22	6	3	3	12
20	Power & Energy Chapter	PE31	0	0	0	0
21	Photonics Chapter	PHO36	24	7	14	45
22	Reliability / Components, Packaging & Manufacturing Technology / Electron Devices Joint Chapter	R07/CPMT21/ED15	8	2	2	10

23	Robotics & Automation Chapter	RA24	8	1	0	9
24	Section	Section	3	5	0	8
25	Sensors Chapter	SEN39	3	0	0	3
26	Systems, Man & Cybernetics Chapter	SMC28	13	4	0	17
27	Signal Processing Chapter	SP01	6	2	2	10
28	Solid State Circuits Chapter	SSC37	14	4	0	18
29	Technology Management Chapter	TM14	0	3	0	3
30	Vehicular Technology Chapter	VT06	9	3	0	12
31	Women in Engineering Affinity Group	WIE	2	3	2	7
32	Young Professionals	YP	7	2	1	10
	Total		231	70	26	327

B.3 Professional and Continuing Education Activities

Below are the talks organized by the sub-committee.

Speaker	Affiliation	Title of talk	Date
Tulay Adali	University of Maryland Baltimore County	Role of Diversity in Source Separation: Theory and Application	29 April 2015
Wen-yan Yin	Zhejiang University	Wireless Applications: From Electromagnetic To Multiphysics Designs	5 August 2015

In addition, the Section collaborated with the Singapore Management University, School of Information Systems (SIS) for a project call "Let's Code" - an intensive programming course for JC students in June 2015. "Let's Code!" is a teaching program that will roll out this June, and last at least 3 years. Over 3 weeks in June, participants will learn basic programming with an emphasis on problem solving via blended learning pedagogy: most lectures will be done online, assignments need to be submitted and marked by Teaching Assistants, and there will be at least 1 face-to-face meet-up every week. Participants can also attend walk-in consultations during the period. At the end of the course, participants take an exam, and the school will issue a cert for successful candidates who pass. The target audience: 200-300 JC students who have never attended a formal programming course before.

There are multiple objectives of this project: we want to expose JC students to coding – an important aspect of IT/computing. For JC students, it's free enrichment. The IT industry definitely loves to get more JC students exposed to the possibility of IT/computing as a career. This programme is supported by Infocomm Development Authority of Singapore (IDA), Singapore Computer Society and the Science Centre Singapore.

B.4 Students Activities

There are 3 Student Branches (NUS, NTU and SUTD) and 2 Student Branch Chapters - Photonics Student Chapter in NTU, Antennas and Propagation Society Student Chapter in NTU

The NUS Industry Applications Society Student Branch Chapter was formed on 25 March 2015 and the Singapore University of Technology & Design (SUTD) Electron Devices Society Student Branch Chapter was formed on 14 December 2015.

In addition, the IEEE-Eta Kappa Nu (IEEE-HKN) Student Chapter has been formed in SUTD. The initiation ceremony was held on 15 December 2015.

B.5 Affinity Group Activities

IEEE WOMEN IN ENGINEERING (WIE) AFFINITY GROUP

WIE ExCo organized 3 administrative meetings in 2015.

Technical Seminars and Talks

Co-organized a technical seminar with Institute for Infocomm Research (I2R) and IEEE Singapore Section on "Role of Diversity in Source Separation: Theory and Applications" on 29 April 2015.

International Conference

Participated in Women in Circuits and Systems, WiCAS 2015 in Langkawi, Malaysia

Social Events

1. On 31 May 2015, WIE Singapore organized a family day event for all IEEE and WIE members and their families at Marina Barrage. Fun-filled event included interesting games and kite-flying programmes. The event has been successful and was warmly welcomed by members. Many participants also showed their interests in joining future WIE activities and being a volunteer to WIE Singapore.
2. On 22 July 2015, WIE Singapore had a meeting with Assist. Prof. Dr. Supavadee Aramvith, the coordinator of R10 WIE. The WIE Singapore has introduced the activities conducted by WIE volunteers. Prof. Supavadee also exchanged her idea on prospective activities that WIE Singapore Section could involve and organize in the near future.

(B) FUTURE PLANS:

WIE will follow up to meet the potential collaborators to explore and organize possible activity for WIE SG & IEEE members. The committee plans to work closely with IEEE Circuits and Systems Society (CASS) Malaysia Chapter, R10 WIE and WIE (Thailand) which are the new network lists established in 2015.

IEEE YOUNG PROFESSIONALS (YP) AFFINITY GROUP

- **Technical Seminars and Talks (6 Technical Talks)**

Continuing our efforts on entrepreneurship and innovation, this year, we have continued the "Connect to Corporate (C2C) series II". We have invited the following speakers to deliver talks.

1. In May, we invited Marion Lang, Eleven Canterbury, LLC, to give a talk on "Career development in Finance Industry".
2. We also invited Francis Chng, the Candidate School, Indigo Drey, to give a talk on "Cracking the Code: Interview".
3. We also invited Richard Lim, Director (Asia), Black-magic Design, to give a talk on "Trends and Opportunities in Image/Video Industry"

4. In June, we have invited Chong Chee Wah, founder and CEO of TreeBox Solutions, to give a talk on his journey, transiting from an engineer to a successful entrepreneur.
5. In July, we have invited Jonah Kowall, VP Market Development and Insights, AppDynamics and David Siah, Chairman of the Cloud Security Alliance Singapore, Country Manager, Trend Micro Singapore Pte Ltd to give a talk on "Business analytics and market research".
6. In October, we invited Jen Kwong Hwa Angel Investor and Business Advisor to give a talk on "Career development in Semiconductor Industry".
7. The last event for the year will be the Arduino workshop by Dr. Rajesh.

- **Social Events**

- In November, we have organized a social network session cum bowling competition.

(B) FUTURE PLANS:

- Strengthen collaboration with Student Chapters and Various societies.
- Looking for members in SUTD and Industries.

(C) SUMMARY:

- Several sponsorships for our events.
- 2 Admin meetings.
- 7 technical seminars.
- 1 social networking events.

B.6 Awards & Recognition Activities

The Singapore Section presents two awards annually: the Best Chapter Award and the Outstanding Volunteer Award. The purpose of the Best Chapter Award is to recognize the volunteers' efforts, from within the member chapters of the IEEE Singapore Section. The IEEE Singapore Section Outstanding Volunteer Award aims to recognize those volunteers who have made outstanding contributions to the Singapore Section, and/or its Chapters/Affinity Groups and/or its IEEE Conferences.

In 2015, the award was not given since not many nominations were received.

IES/IEEE JOINT EXCELLENCE AWARD

The Award Committee selected Prof. Er Meng Hwa, Vice President for International Affairs at Nanyang Technological University as recipient for this year's award. The award was presented during the IES Annual Dinner and Dance held on 11 November 2015.

B.7 Communication Activities (Newsletter, Home Page, E-mail etc.)

Regular broadcasts containing information on seminars, talks, conferences, social events and membership benefits have been sent to IEEE members in Singapore.

The website (<http://www.ieeesingapore.net/>) provides an ideal publicity platform for IEEE Singapore Section and chapters to promote their events. Under the diligent update and maintenance by our Publicity Chair, Dr Li Wei, the annual maintenance cost is reduced by 50%. The website also generates income for Section through advertisements by external partners.

B.8 Industry Relations

Collaboration with NTUC Singapore is in progress and likely to sign MoU in the beginning of 2016

- Membership growth and retention
- Activities for/with industrial members

B.9 Humanitarian Technology Activities

Collaborated with the Singapore Polytechnic for the “GoServe Event” at the Henderson Moral Welfare Home. The event was held on 25 June 2015 and the activities included bringing the residents on an excursion, bringing them for a meal and doing some shopping for daily necessities.

- Humanitarian Technology related activities supported by the Section including collaboration with other OUs.
- SIGHT Activities

B.10 Community Activities

- IEEE Social activities (Family day, IEEE day, Engineers Week)”