

2017 IEEE Singapore Section Report

PART A - SECTION SUMMARY

A.1 EXECUTIVE SUMMARY

2016 was another eventful and fruitful year for the IEEE Singapore Section. Altogether, the Chapters and the Section, managed to organize 245 technical events, 43 social events and 79 administrative events. The active volunteers in Singapore spent a lot of time organizing and planning all the activities that happened 2016. This is a remarkable achievement.

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) on 15 July 2016 at SUTD, Region 10 Director Ramakrishna Kappagantu and Prof Barry Shoop (IEEE President and Chief Executive Officer) during our AGM on 25 November 2016. Prof Shoop presented a talk "How Advances in Technology are Changing Face of Leadership" just before the AGM commences.

1. AWARDS RECEIVED

During the AGM, Ramakrishna Kappagantu presented the R10 Awards to the following:

2016 R10 YP Affinity Group Award IEEE Singapore Young Professionals AG

Chair: Soumyabrata Dev

R10 Outstanding Industry Academia Collaboration Award

Dr Amit Gupta (Rolls-Royce Singapore)

Prof Tseng King Jet (Nanyang Technological University)

2. TENCON 2016

The Section has organized TENCON 2016, the annual flagship conference of the IEEE Region 10, which was held from 22 - 25 November 2016 at Marina Bay Sands. Under the theme of TENCON 2016, "Technologies for Smart Nation", a number of oral/interactive forum technical sessions in all areas of Electrical and Electronic Engineering including Information Technology were presented at the conference. This year being the special golden jubilee celebrations of Region 10, the conference provided a unique opportunity for international scientists, engineers and scholars to share and exchange their experiences. This year's TENCON received an overwhelming response and was a great success with the support of the IEEE Asia Pacific Office, local Chapters and all the Sections of the Asia Pacific Region. TENCON 2016 received more than 1,500 papers from 50 countries. After peer review, about 990 papers were accepted for presentation.

As a part of the TENCON event, the Young Professionals organized the IEEE Hardtech Summit on 26 November at NTU. Also, the Region 10 Committee on Entrepreneurship also conducted a workshop at NTU on 26 November on Innovation in Forensic, Health Science, Biomedical and Bio-informatics.

3. FELLOWS ELEVATED FOR 2017

1. Lap Pui Chau, *NTU*,
 - For contributions to fast computation algorithms for visual signal processing
2. Teng Joon Lim, *NUS*,
 - For contributions to statistical signal processing in wireless communications
3. Dusit Niyato, *NTU*
 - For contributions to allocation in cognitive radios and cellular wireless networking
4. Shen Zhongxiang, *NTU*
 - For contributions to 3D frequency selective structures and slot antennas
5. Su Guanning, *NTU*
 - For leadership in defense technology and management of educational institutions
6. Shuicheng Yan, *NUS*
 - For contributions to subspace learning and visual classification
7. Rui Zhang, *NUS*
 - For contributions to cognitive radio and energy harvesting communications
8. Josep Pou, *NTU*
 - For contributions to multilevel converters and renewable energy conversion

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 31 sub-entities (29 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 River Front, 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 (2016)
Student Members	116
Graduate Student Members	516
Associate Members	21
Members	1,726
Senior Members	430
Fellow	36
Life Members	9
Life Seniors	10
Life Fellow	1
TOTAL	2,865

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

B.2 Chapter Activities

The Singapore Section has 30 Chapters and 2 Affinity Groups. The Council on RFID, Singapore Chapter was formed on 15 January 2016.

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	4	4	0	8
2	Antennas & Propagation / Microwave Theory & Techniques Joint Chapter	AP03/MTT17	31	4	3	38
3	Broadcast Technology Chapter	BT02	2	0	3	5
4	Computer Chapter	C16	3	2	0	5
5	Circuits & Systems Chapter	CAS04	6	4	3	13
6	Consumer Electronics Chapter	CE08	0	1	0	1
7	Computational Intelligence Chapter	CIS11	5	2	0	7
8	Communications Chapter	COM19	14	2	0	16
9	Control Systems Chapter	CS23	11	2	2	15
10	Council on RFID	RFID741	3	0	0	3
11	Education Chapter	E25	6	3	0	9
12	Engineering in Medicine & Biology Chapter	EMB18	6	4	0	10
13	Electromagnetic Compatibility Chapter	EMC27	10	3	0	13
14	Industry Applications / Power Electronics Joint Chapter	IA34/PEL35	15	4	2	21
15	Industrial Electronics Chapter	IE13	9	4	0	13
16	INTELLIGENT TRANSPORTATION SYSTEMS	ITS038	9	1	2	12

17	Magnetics Chapter	MAG33	2	2	2	6
18	Nanotechnology Chapter	NAN042	5	3	0	8
19	Nuclear and Plasma Science Chapter	NPS05	8	3	1	12
20	Oceanic Engineering Chapter	OE22	9	6	1	16
21	Power & Energy Chapter	PE31	6	3	1	10
22	Photonics Chapter	PHO36	22	0	14	35
23	Reliability / Components, Packaging & Manufacturing Technology / Electron Devices Joint Chapter	R07/CPMT21/ED15	5	3	0	8
23	Robotics & Automation Chapter	RA24	5	0	1	6
24	Systems, Man & Cybernetics Chapter	SMC28	14	3	0	17
27	Signal Processing Chapter	SP01	3	2	1	6
28	Solid State Circuits Chapter	SSC37	13	2	0	15
29	Technology Management Chapter	TM14	3	3	0	6
30	Vehicular Technology Chapter	VT06	6	3	0	9
31	Women in Engineering Affinity Group	WIE	3	3	3	9
32	Young Professionals	YP	7	3	4	14
	Total		245	79	43	367

B.3 Professional and Continuing Education Activities

We received the R10 Outstanding Industry-Academia Collaboration Award – 2016 for Electrical Power System Integration Lab @ NTU (EPSIL@N).

Section developed an Industry Track in TENCON 2016 where eight distinguished speakers from industry delivered talks on Technologies for Smart Nations. The Industry Track also included a panel discussion comprising five distinguished guests from Academia and Industry which was spearheaded by Dr Amit Gupta. .

Section also supported several student activities e.g. HardTech Summit 2016. We help to organize several invited and guest lectures in IEEE events in Singapore. We supported the IEEE IA/PELS Chapter in increasing membership. Section supported the visit of the IEEE Board delegation to several companies including Rolls-Royce Singapore Pte Ltd.

B.4 Students Activities

IEEE Singapore Section has 3 active Student Branches including IEEE NUS, NTU and SUTD Student Branches; and 2 IEEE-HKN Branches: NUS and SUTD.

These Student Branches organize regular educational workshops for the IEEE Student Members and for reaching out to non-members. They serve as platforms for connecting IEEE Members and the Student Members. They are also effective channels for IEEE to reach out to young Engineering students in the local universities under the direction of Dr Huang Shaoying.

B.5 Affinity Group Activities

IEEE WOMEN IN ENGINEERING (WIE) AFFINITY GROUP

WIE ExCo organized 3 technical talks, 3 social events and 3 administrative meetings in 2016.

IEEE YOUNG PROFESSIONAL (YP) AFFINITY GROUP

The Young Professional AG organized 7 technical talks, 4 social events and 3 administrative meetings in 2016.

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 2016, the Oceanic Engineering Chapter won the Best Chapter Award and the Outstanding Volunteer Award was given to Prof See Kye Yak from the Nanyang Technological University.

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

- Membership growth and retention

The section EXCO has formed a sub-committee headed by Dr. Amit Gupta to brainstorm about ways to promote IEEE membership among industry professionals in Singapore.

The section is actively involved with NTUC to develop common technical and professional courses and seminars for the technical personnel in Singapore.

PART C - OTHERS

C.1 Special Events

- Half-day Industry Track held during TENCON2016
- Women-in-Engineering track conducted at TENCON2016
- Young Professionals organized the IEEE Hardtech Summit on 26 November at NTU.
- Region 10 Committee on Entrepreneurship also conducted a workshop at NTU on 26 November on Innovation in Forensic, Health Science, Biomedical and Bio-informatics

C.2 Relationship with National and International Societies and Non-Government Organizations (NGO)

- IES-IEEE Joint medal of excellence being continued. The Institution of Engineers, Singapore (IES) and the Institute of Electrical and Electronics Engineers, Inc. (IEEE) intend to continue with the IES/IEEE Joint Medal of Excellence Award. The aim of the award is to promote engineering as a profession and to recognize an individual for his/her contributions in Engineering that have had far-reaching impacts on society. The award is expected to inspire the young to take up engineering as a profession. This award is highly prestigious and the recipient will be recognized not only in Singapore but also the region and around the world.
- IEEE Singapore section works with the national trade union congress (NTUC) as one of the members of U Associates. U Associate is a partnership program designed to engage and support professional associations. As members of U Associate, IEEE volunteers get chance to engage with professionals from related industry and prepare for future challenges to the economy. NTUC helps us in publicizing IEEE activities among other NTUC members and thus helps in our outreach to industry.

PART D - GOALS AND PLANS

D.2 Goals and Future Plans

Membership Development

To attract new members as well as make existing ones retain their membership.

1. Tie up with Insurance, Hotels and Popular attractions for special discounts
2. Organize movies events for networking
3. To add other attractions as membership benefits
4. Offer seminars / trainings / short courses with NTUC
5. List of activities to be included in website like a calendar of events

Engaging Students

To increase support for HKN activities. To encourage the HKN chapters to lead outreach activities in schools.

To continue to support activities like Graduate Student Symposium (GSS) organized by YP at NUS and towards membership development.

Engaging Industry

The section EXCO has formed a sub-committee headed by Dr. Amit Gupta to brainstorm about ways to promote IEEE membership among industry professionals in Singapore.

The section will engage with NTUC to publicize useful technical and professional courses and seminars for the industry professionals in Singapore.