

Northern Australia Section Report 2019

PART A - SECTION SUMMARY

A.1 Executive Summary

- Section Executive Committee Member List
 - Graham Woods (Chair)
 - Wei Xiang (Vice Chair)
 - Mostafa Azghadi (NA / MTT Comms / PES Treasurer)
 - Melanie Olsen (Secretary)
 - Ron Goodwin (Membership Development Officer)
 - Mostafa Azghadi (Technical seminar coordinator)
 - Joel Cox (Industry Liaison Officer, YP rep)
 - Bronson Philippa (Std. Branch Councilor / Cairns)
 - Melanie Olsen (WIE rep)
 - Mohan Jacob (MTT-S/Comms Chair)
 - Ahmad Zahedi (PES Chair)
 - Paul Chandler (PES Secretary & Vice chair)
 - Mamoun Alazab (NT Sub-Section Chair, Executive Committee Member / Darwin)
 - Ron Goodwin (NA OES Representative)
 - Kenny Leong (Web Master)
- Section Highlights
 - Celebrated our 25th year as an IEEE section
 - Formed the Northern Territory sub-section based in Darwin
 - Held a very successful student member recruitment event in Darwin which resulted in more than 80 new student members
 - Awarded a certificate for membership retention
 - Held more than 10 technical events including 2 Distinguished Lecturer presentations
 - Held the annually IEEE Peter Arlett Night with more than 50 attendees, many from industry
 - Held 5 executive section meetings joint with Chapter meetings and Affinity group meetings
- Major Events (International, National)
 - IEEE Peter Arlett Lecture, John O'Brian "CopperString – Engineering, Energy, Markets, Regulation, Politics – It's all about the money!!!" 27th September 2019. Technical seminar and industry networking event. 50 attendees.
- Major Chapter Activities
 - PES Chapter Technical seminars: 4
 - MTT-S/Comms Chapter Technical seminars: 4
 - Local OES Chapter Technical seminars: 1
- Major Student and Affinity Group Activities
 - Northern Territory Student Recruitment Event: Section supported the event and part membership for student members.
 - Section supported one student member to attend ANZSCON in Wellington, 6-7th July 2019.
 - Australian IEEE WIE International Leadership Summit, 26-27th November 2018. Section supported Janina Mazierska to attend.
 - Held 5 WIE & YP affinity group joint executive meetings
- Awards

Constituted by the Section:
IEEE Northern Australia section awards three undergraduate students awards at University awards ceremonies:

1. Townsville: 1st year Engineering Student with highest GPA, who is joining Electrical/ Computer Engineering UG program.
2. Townsville: 4th year Electrical/ Computer Engineering Student for the best project work.
3. Darwin: IEEE prize is awarded to a 3rd year Electrical Engineering Student with the highest GPA

A.2 Financial Report – (Please follow the format given below)

- Summary – Annual General Meeting Treasurer’s Report
 - \$6,251.36 was paid by Tourism & Events Queensland;
 - \$3,727.31 was paid (including 10% early reporting bonus thanks to Mostafa) as the IEEE NA membership rebate payment for 118 members;
 - Minor interest credits were received over the year;
 - Over the reporting period, payments were made to support posters, talks, meeting catering and representing IEEE at events such as ANZCON;
 - Final balances (as at 1st November 2019) were \$16,448.33 in the everyday account and \$20,799.69 in the term deposit account
- Any other financial activities
 - Was awarded \$1500 (USD) in R10 incentive funding based on activities reported in 2019.

PART B - ORGANIZATIONAL ACTIVITIES

B.1 Membership Development Activities

- Total number of active members in the past 3 years.
 - Membership ranges between 150 and 200 throughout the annual membership cycle
- Summary and evidence of work done to improve the value of membership, which leads to retention and growth of members
 - Held a very successful student member recruitment event in Darwin which resulted in more than 80 new student members
 - Awarded a certificate for membership retention in 2019
 - Held a wide range of technical & networking events in different locations within the section
 - Our focus has been to attract quality technical presentations to the section to support the varied interests of members including Distinguish Lecturer presentations
 - We have also focused on high profile events such the Peter Arlett lecture to attract new members from the local profession, particularly industry members

B.2 Chapter Activities

- Total number of Chapters in the Section
 - Two (2) (MTT/Comm and PES). We are also part of an Australia wide OES Chapter
- Number of Chapters formed in the current year
 - Nil
- Number of active Chapters (Chapters who have reported required number of meetings during the year)
 - All Two (2) (MTT/Comm and PES) full chapters were active this year and we also reported activity locally as part of the Australia wide OES Chapter
- Summary of Chapter activities (Chapter wise with attachment table/information)

PES

 1. A/Prof. Ahmad Zahedi “Smart Grid and the Role of the Electric Vehicle to Support the Electricity Grid during Peak Demand” 16 May 2019. Technical seminar.
 2. Peter Herbert “Electrical Engineering in the Mining Industry” 13th September 2019.

3. IEEE Peter Arlett Lecture, John O'Brian "CopperString – Engineering, Energy, Markets, Regulation, Politics – Its all about the money!!!" 27th September 2019. Technical seminar and industry networking event.
4. Bill Schlesinger "Lightning Protection Designs" 19th November 2019, 5:30-7:00pm Engineers Australia Auditorium, Darwin, NT.

MTT/Comm

1. Dr. Shihao Yan "COVERT WIRELESS COMMUNICATION: POTENTIAL APPLICATIONS TO IoT AND THE OPTIMALITY OF GAUSSIAN SIGNALING" 15 April 2019.
2. Professor Zhisheng Niu "Mobility-Enhanced Edge inTelligence (MEET) for 6G" 25th July 2019.
3. Prof Carey Rappaport "Electromagnetic Sensing and Treatment of Living Things: Using Microwaves to Detect and Treat Disease in Humans and Trees" Cairns Thursday 15th August 2019. 15 attendees. DL Technical seminar.
4. Prof Carey Rappaport "Modelling Standoff Radar Scattering of Concealed Body-Worn Objects for Suicide Bomber Detection" Townsville Monday 19th August 2019. DL Technical seminar.

OES

1. Dr. Jules Jaffe "ADVENTURES IN UNDERWATER IMAGING: FROM THE TITANIC TO THE TINY" 6 June 2019.

B.3 Professional and Continuing Education Activities

Summary of continuing Educational activities including conferences, technical activities, training courses, and distinguished lecture programs with attachment table / information

1. Dr. Shihao Yan "COVERT WIRELESS COMMUNICATION: POTENTIAL APPLICATIONS TO IoT AND THE OPTIMALITY OF GAUSSIAN SIGNALING" 15 April 2019. Technical seminar..
2. A/Prof. Ahmad Zahedi "Smart Grid and the Role of the Electric Vehicle to Support the Electricity Grid during Peak Demand" 16 May 2019. Technical seminar.
3. Dr. Jules Jaffe "ADVENTURES IN UNDERWATER IMAGING: FROM THE TITANIC TO THE TINY" 6 June 2019. Technical seminar.
4. Professor Zhisheng Niu "Mobility-Enhanced Edge inTelligence (MEET) for 6G" 25th July 2019.
5. Prof Carey Rappaport "Electromagnetic Sensing and Treatment of Living Things: Using Microwaves to Detect and Treat Disease in Humans and Trees" Cairns Thursday 15th August 2019. DL Technical seminar.
6. Prof Carey Rappaport "Modelling Standoff Radar Scattering of Concealed Body-Worn Objects for Suicide Bomber Detection" Townsville Monday 19th August 2019. DL Technical seminar.
7. Karl Alstrom "Automatic Control - a Perspective" 9th September 2019. Technical seminar.
8. Peter Herbert "Electrical Engineering in the Mining Industry" 13th September 2019.
9. IEEE Peter Arlett Lecture, John O'Brian "CopperString – Engineering, Energy, Markets, Regulation, Politics – Its all about the money!!!" 27th September 2019. Technical seminar and industry networking event.
10. Bill Schlesinger "Lightning Protection Designs" 19th November 2019. Engineers Australia Auditorium, Darwin, NT.
11. Jerzy Krupka "Microwave measurements of dielectric properties of water and moisture content in soil" 3rd December, 2019.

B.4 Students Activities

- Total number of Student Branches in the Section
 - One (1)
- Number of Student Branches formed in the current year
 - Nil.
- Section level student activities (student congress, paper and other contests, awards etc)
 - One student member attended ANZSCON in Wellington, 6-7th July 2019.

- Student branch held three (3) student branch workshops through year.
- Number of active Student Branches (Student Branches who have reported required number of meetings during the year)
 - One(1)
- Summary of Student Branch activities (Student Branch wise with attachment table/information)
 - Running group study sessions and workshops regularly as a club at JCU, Townsville.

B.5 Affinity Group Activities

- Young Professional (YP)
 - Held five joint executive meetings through year.
- Women In Engineering (WIE)
 - Held five joint executive meetings through year.
- Life Member (LM)
 - Currently don't have enough members to form a LM affinity group.

B.6 Awards & Recognition Activities

- Award constituted by the Section
 - IEEE Northern Australia section awards three undergraduate students awards at University awards ceremonies:
 1. Townsville: 1st year Engineering Student with highest GPA, who is joining Electrical/ Computer Engineering UG program.
 2. Townsville: 4th year Electrical/ Computer Engineering Student for the best project work.
 3. Darwin: IEEE prize is awarded to a 3rd year Electrical Engineering Student with the highest GPA.
- Please list all Awards and Recognitions received by the Section, and members in the Section, from R 10 and IEEE HQ during the year
 - Presented with a banner for 25year anniversary of the formation of the Northern Australia section. Banner was presented at the R10 meeting in Melbourne.
 - Received a certificate for member retention in 2019.
 - Awarded \$1500 (USD) in R10 incentive funding based on activities reported in 2019.

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

- Newsletter (name and number of issues in the year)
 - Nil
- Home Page of the Section (give the URL and how often it is updated)
 - <https://r10.ieee.org/nas/>
Website is currently being revamped. The website is typically updated on an ad-hoc basis approximately 10 times a year.
 - https://www.youtube.com/channel/UCmifeUSFgpY6kBXTvDzJ8_Q
Three youtube video recordings of seminars were uploaded this year
- Other means of contacts with Section members including social media
 - Member contact is based on ad-hoc email to the member lists with information on upcoming events. NEWS & EVENTS are also typically reported on the section Web site.

B.8 Industry Relations

- Membership growth and retention
 - Have had good growth in Industry membership over recent years. A number of events including the Peter Arlett lecture were particularly focused at industry members. These events also included catering to encourage networking between members.
- Activities for/with industrial members
 - 2019 IEEE Peter Arlett Lecture. Joint event with PES. This talk was held in Townsville city and was very well attended by industry professionals and IEEE members. Catering was provided prior to the event to enhance the networking opportunity.

B.9 Humanitarian Technology Activities

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

B.10 Community Activities

- IEEE Social activities (Family day, IEEE day, Engineers Week)”
 - A catered networking event was undertaken prior to the Peter Arlett lecture. Speakers at technical seminars are regularly taken to local attractions and dinner with other members of the executive team.

PART C - OTHERS

C.1 Special Events

- Please briefly describe the importance of special events and the outcomes achieved
 - A recruitment event was held in Darwin to enroll members to the newly formed NT subsection. Over 80 new student members were recruited.
- Funding secured from the IEEE and external sources including sponsorships
 - 2019 Yearly IEEE rebate.
 - Also received funding from Tourism Queensland for hosting the Industrial Symposium on Industrial Electronics, Cairns 13-15 June, 2018.

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

- Nature of relationship and details of any formal agreement signed
 - IEEE has a signed MOU with Engineers Australia

- Details of joint activities
 - The Bill Schlesinger “Lightning Protection Designs” technical seminar on 19th November 2019 in Darwin was a joint event with Engineers Australia.
- Benefit to IEEE members (for example discounts, access to technical information etc.)
 - Attendance at the Bill Schlesinger “Lightning Protection Designs” technical seminar was free to IEEE members.
- Benefit to Section (for example help in membership development, venue facilities, cost saving etc.)
 - The venue for the Bill Schlesinger “Lightning Protection Designs” technical seminar was the Engineers Australia Auditorium, Darwin, NT.

C3. Collaboration with other IEEE Sections

- Support extended to neighboring Sections
 - Supported the formation of the IEEE Northern Territory sub-section.
 - As part of the Australia Council our section contributes to Australia wide initiatives such as the student branch competitions and also consultation on important matters relevant to Australia.
- Joint activities with any other Section
 - The Northern Australia section covers a huge geographical area. The nearest section is approximately 1500km from our sections geographic centre. Joint activities typically involve coordinating visiting lecturers throughout the year. This year we collaborated with APS Chapter in the Queensland section to organize a DL visit and two technical talks by Carey Rappaport.

C4 Support extended to Sub-sections & Society Chapters within the Section

- Support extended for organizing technical, educational and professional activities
 - In a small section the activities of the section and chapters are very closely linked with section executive committee members often also having chapter official positions. In this way the support from section to chapters is continuous throughout the year with near complete removal of barriers in the organizational structure.
- Joint activities for membership development
 - Key membership development activities were focused on joint technical talks and networking events often involving industry partners such as Energy Queensland and the Australian Institute of Marine Science. For details see section B.2 above.
- Support extended for the formation of a Sub-section or transition of a Sub-section into a full Section
 - Supported the formation of the Northern Territory sub-section in Darwin this year. Provided advice and substantial financial support to the sub-section for events and awards. Held a very successful student recruitment event where more than 80 new members were enrolled.

C5 Best Practices of your Section (which you would like to share with other Sections for the benefits of members)

The section has focused on a small number of events to enhance the IEEE’s profile within the local professional community. These events often also included catering in order to promote networking within the section and with other potential members within the wider community.

Executive committee members were encouraged to assist with the planning and execution of key events throughout the year. This was very successful not only leading to outstanding events but also empowering members within the Section. This has led to increased interest from members, particularly young members to take on new executive roles within the Section.

An activities calendar was developed at the start of the year to set dates and start planning for key events in the year. This planning was useful to ensure funding was available to support upcoming events and new initiatives.

A strategic plan for the section was developed to help define what are the main aims of the section and give executive members a resource to assess how best to focus resources in future years.

C.6 Problems anticipated and suggestions for solutions, if any

The student branch did hold some activities this year but was not as active as in previous years. The executive needs to continue to invite and encourage the student branch executive committee members to attend Section executive committee meetings and plan events for the student branch.

The WIE and YP affinity groups were not as active this year as was hoped. The executive needs to continue to encourage affinity group activities perhaps of a social nature and in collaboration with other affinity groups, student branch, industry and the wider community.

PART D - GOALS AND PLANS

D.1 Continuation of project/activity in progress and their implementation plans

Updating of the section website has commenced but needs to be completed. We aim to use the website for saving video copies of presentations as well as for an archive for important documentation such as the section's history, photographic records, strategic plan, etc.

D.2 Goals and Future Plans

Establish Section Volunteer Awards for;

- IEEE Northern Australia Outstanding Volunteer
- IEEE Northern Australia Outstanding Young Professional
- IEEE Northern Australia Outstanding Women In Engineering Volunteer
- IEEE Northern Australia Outstanding Student Volunteer

Details of the awards and nomination forms are to be added to the Website. Nominations will in general close in August of each year with award winners presented with a certificate at the AGM in November.

D.3 Any innovative ideas to make IEEE more creative and value added for sustaining the membership retention and recruitment goals.

Investigate opportunities for hands-on workshops catering to the interests and needs of local members. These could be non-technical in nature and may include a networking/ social focus as well.

Hold an Industry meets Student members event possibly with a Mock Job Interview element included. The event might also incorporate a YP and /or WIE affinity group focus as well.

Engage in regional events involving problem solving, engineering & innovation initiatives to broaden our member-base. This includes joint events with other engineering groups (especially affinity groups) and wider community initiatives such as science week.

Incorporate social media and more frequent website promotion into our advertising regime, to increase the audience at our activities and our presence in the community.

D.4 Business Plan for Sustainable Growth and Financial Stability.

The Section is fortunate to have a stable organizational committee with a good mix of members from academic and industry backgrounds that understand the area and member needs. The executive committee includes representation from many of the major regional cities within the section including Cairns, Townsville and Darwin to encourage activities in the various regions. The executive members are also generally highly motivated and willing to assist and support the Section as required.



By focusing on a small number of high profile events and including networking opportunities, the Section aims to remain relevant to the needs of local members and promote growth within the wider professional community.

This year, a Strategic Plan was also developed to assist our Section in maintaining a cohesive vision moving into the future. It enables the section to focus resources into activities that the section has determined are its core business and are financially sustainable. Regular review of the Section's financial status was conducted to ensure sufficient funding was available for planned events and for future contingencies.