

Region 10

Australian Capital Territory Section Report

PART A - SECTION SUMMARY

A.1 Executive Summary – (Please follow the format given below)

- Section Executive Committee Member List

Chair	Fouad Karouta
Vice Chairs	Martin Leaver / Ambarish Natu
Secretary	Liam Waldron
Treasurer	Ross Summerfield
Webmaster	Ambarish Natu
Educational/Student Activities	Xiuping Jia
Membership Development	Ashley Chonka
Societies Chapter Chairs	
Antennas and Propagation	Rainer Ignatik
Computer Society	Jose Alvarez
Joint Photonics & EDS	Lan Fu
Signal Processing & Communications	Salman Durrani
GRSS	FuQin Li
Nanotechnology Council	Hoe Tan
Young Professionals	Elias Lopez
WIE Affinity Group	Girija Chetty
Oceanic Engineering	Glenn Alcock
Students Branches Representatives	
Australian National University	Miranda Zhang
Australian Defence Force Academy	Meng Xu
Canberra University	Matthew Collingridge
- Section Highlights

In 2014 the AT Section ExCom held three meetings (19 Feb, 11 June, 25 Sep) along the annual general meeting held on 27th of November. Begin of August, the Section Chair, Sharon Lim, stepped down for personal reasons and Fouad Karouta became Acting Chair till December 2014. The main highlight of 2014 was the establishment of an ACT WIE affinity group in March 2014. Furthermore, the Section did support the participation of four ACT students to attend ANZSCON 2014 held in Brisbane. Finally and under the Australian Council initiative an Australian-wide Chapter on Oceanic Engineering has been established in December 2014 and ACT coordinator is Dr. Glenn Alcock.
- Major Events (International, National)

Fouad Karouta represented the ACT Section at the R10 meeting in Kuching, Malaysia in March 2014.

The ACT Section was represented by Liam Waldron at the IEEE Sections Congress held in Amsterdam in August 2014.
- Major Chapter Activities

With the exception of the Computer Society Chapter all other Chapters have organized technical activities, mostly in the form of seminars (Antennas and Propagation, Computer Society, Joint Photonics & EDS, Signal Processing & Communications, geoscience and remote sensing). The newly established WIE affinity group did organise a few activities of which one jointly with the YP group.
- Major Student and Affinity Group Activities

Two major technical and students activities were organized consisting of two industry visits:

 1. Visit to CEA Technologies, accompany located in Canberra and working on new generation radar technology on August 22nd, 2014.
 2. Visit to Dyesol, Queanbeyan (NSW), a company developing dye solar cells on October 10th, 2014.

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

- Summary (as per submitted L50)
The Section started year 2014 with total assets in bank accounts of AUD 15,305.13 and ended the year with a total asset of AUD 12,922.82. This means the Section has spent more money than the income and using a part of the Section savings.
- Any other financial activities
The ACT Section organized a sausages sizzle fundraiser at a hardware store on March 30, 2014. This activity was successful and raised \$460 net benefit to be used in students-related activities.

PART B - ORGANIZATIONAL ACTIVITIES

B.1 Membership Development Activities

- Total number of active members in the past 3 years.
The total IEEE members in the ACT Section was:
 - Dec 2104: 535
 - Dec 2013: 552
 - Dec 2012: 533
 The total IEEE members number shows a moderate fluctuation and the drop between December 2013 and 2014 was 3%, a lower value than the overall decrease of 4.7% reported by IEEE. Though the numbers look satisfactory the Section will undertake a few promotional activities among students to increase students membership.
- Summary and evidence of work done to improve the value of membership, which leads to retention and growth of members.

B.2 Chapter Activities

- Total number of Chapters in the Section
6
- Number of Chapters formed in the current year
1 (WIE Affinity group).
- Number of active Chapters (Chapters who have reported required number of meetings during the year)
5
- Summary of Chapter activities (Chapter wise with attachment table/information)
Summary:
 - 1. Antennas and Propagation Chapter**
Chair: Rainer Iagnetik (rainer.ignetik@ozemail.com.au)
The Chapter held two events in 2014.
 - Seminar presented by Mr Ian Croser from CEA Technologies entitled “The Challenges of Active Phased Array Development and Test”, 7th May 2014, with attendance of 52 people
 - Visit to local industry site at CEA Technologies on 22nd August 2014 for undergraduates, postgraduates and young professionals with 14 people attending of which 12 were students.
 - 2. Computer Society Chapter**
 - 3. Joint Photonics and EDS Chapter**
 - Seminar on 'Nanophosphors: Lighting to Life Sciences', by Dr. Rao Ravilsetty, Specialty Phosphors Inc, Cupertino, August 1st.**Joint activities with Nano-Technology Council:**
 - Seminar on 'Thermal Plasmonics as a Route to Photovoltaics?' by Prof. David Norris, ETH Zurich, February 10th.
 - Seminar on 'Ultra-thin InP-based materials for extended wavelength single photon detectors and high-power quantum cascade lasers' by Dr. Christine Wang, MIT, July 3rd.
 - Seminar on 'Wide-bandgap III-N ultraviolet light emitters and power electronic devices' by Prof. Russell Dupuis, Georgia Institute of Technology, July 4th.
 - Seminar on 'New epitaxial growth techniques for low- and high-density semiconductor quantum dot materials and their applications in classical and quantum optical communications systems' by Prof. Johann Peter Reithmaier, University of Kassel, July 11th.

- Seminar on 'Vertically aligned semiconductor nanowire array and their applications', by Prof. Takashi Fukui, Hokkaido University, December 1st.
- Seminar on 'Photonic bandgap specialty optical fiber devices and applicability to Bragg reflection semiconductor waveguides', by Prof. Bishnu Pal, Mahindra Ecole Centrale, School of Natural Science, Hyderabad, December 9th.

4. Nanotechnology Council

Seminar on 'Atomic scale analysis of semiconductor nanostructures', by Prof. Paul Koenraad, Eindhoven University of Technology, July 25th.

Seminar on 'Controlling the crystal structure of III-V nanowires', by Prof. Vladimir Dubrovskii, St Petersburg Academic University, November 20th.

5. Signal Processing & Communications Chapter:

This chapter (chair is Xiangyun (Sean) Zhou) hosted 6 technical activities in 2014, including 2 Distinguished Speaker Program talks given by Distinguished Lecturers of the IEEE Communications Society. All the activities are in the form of seminar, covering a wide range of interesting topics in signal processing and communications. The audiences include researchers and students at the Australian National University as well as people from other universities, industry and government in the ACT region. The seminars were generally well-received and followed by substantial discussions between the speakers and interested audiences.

6. Geoscience and Remote Sensing joint ACT and NSW Chapter

Chair: Fuqin Li (Geoscience Australia, Fuqin.Li@ga.gov.au)

Co-chair: Simitkumar Raval, University of New South Wales, simit@unsw.edu.au

GRSS workshop given by Jin Chen, Xuehong Chen, Xin Cao, Xiuping Jia, Meng Xu and Ali Hossion, 25 February, 2014, 18 people attended.

GRSS seminar given by Dr Zhi Huang, 14 May, 2014, 50 people attended.

GRSS seminar given by Dr Tom Jackson, 26 May, 2014, 46 people attend

GRSS seminar given by Prof. Qinghuo Liu, 21 November, 2014, 17 people attended

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

B.4 Students Activities

- Total number of Student Branches in the Section
As to the students number that was:
 - Dec 2104: 19
 - Dec 2013: 34
 - Dec 2012: 27
- Number of Student Branches formed in the current year
N/A
- Section level student activities (student congress, paper and other contests, awards etc)
The Section contributed to the participation of four ACT students to attend an Australian New-Zeland Students conference (ANZSCON) held in Brisbane (Australia). This is a biannual conference.
- Number of active Student Branches (Student Branches who have reported required number of meetings during the year)
- Summary of Student Branch activities (Student Branch wise with attachment table/information)

B.5 Affinity Group Activities

- Joint Young Professional (YP) and Women in Engineering
Collaboration and Participation in organisation of IEEE YP sausage sizzle fundraising event on March, 30, 2014, for engaging with the community.

- **Women In Engineering (WIE)**
The WIE Affinity Group - IEEE ACT Section (Canberra), Australia is a newly established affinity group, with an objective to enhance networking opportunities for women engineers, and encourage younger generation particularly women to consider engineering as a career path. With this focus the WIE affinity group focused on working in collaboration with different groups within the IEEE ACT Section and successfully conducted and participated in several events and activities, within IEEE member community in ACT section, as well as engaged with several community groups outside IEEE. Following is the list of events, where WIE affinity group in ACT Section (Canberra), Australia engaged in 2014:
 1. Organisation of Distinguished Speakers' Seminar on 5th June 2014 for networking with WIE members, for inauguration of WIE affinity group in Canberra, ACT, Australia. (Two Distinguished Researchers: Prof. Lan Fu from ANU, and Dr. Hanna Suominen from NICTA were the distinguished speakers).
 2. Organisation of 'Hour of Code' Workshop at Aspire UC, University Marketing Event for High School Students in Australia on 23rd July 2014 and 24th July 2014, for promoting Engineering and Computing careers
 3. Organisation of "Learn to Code" event during National Science Week in iconic QUESTACON in Canberra in August 2014 for five days (18th August - 22 August 2014) , for engaging with younger generation (Age group 5 to 12), and was done in collaboration with IEEE, TISP, ACT Section, and UC IEEE Student Member Group.
 4. Organisation of coding activity for children during the ACT Section AGM in collaboration with TISP and UC Student Member Group. (November 27th).
- Life Member

B.6 Awards & Recognition Activities

- Award constituted by the Section
The Section delivered eight certificates of appreciation to eight students who contributed to the “learn to Code” activity organized by WIE at the Science museum Questacon in Canberra (Aug 18-22, 2014). Their names are: Nigel Bates, William Johnson, Matthew Collingridge, Taylor Fang, Michael Nay, Joseph McHugh, Astoria Marlovic and Bradley Collingridge.
- Award(s) received from R10
N/A
- Award(s) received from IEEE HQ
N/A

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

- Newsletter (name and number of issues in the year)
None
- Home Page of the Section (give the URL and how often it is updated)
<http://ieeeact.org/>
- Other means of contacts with Section members
IEEE e-notices and emails.

B.8 Industry Relations

- Membership growth and retention
The ACT Section counts 220 members working in industry. This is about 40% of the total number of members.
- Activities for/with industrial members
Please see under “Students Activities” the two student visits to industry in the ACT geographical area.

B.9 Humanitarian Technology Activities

B.10 Community Activities

- IEEE Social activities (Family day, IEEE day, Engineers Week)
At the Annual General Meeting partners and children were admitted and one hour coding activity was given by students from University of Canberra to children accompanying their parents to the AGM.
The coding activity as or

PART C - OTHERS

C.1 Special Events

A sausage sizzle fundraising event was organised by GOLD and supported by WIE on March, 30, 2014.

Organisation of "Learn to Code" event during National Science Week in iconic QUESTACON, science museum in Canberra, for five days (18th August - 22 August 2014) engaging with younger generation (Age group 5 to 12), and was done in collaboration with IEEE, TISP, ACT Section, and UC IEEE Student Member Group.

C.2 Relationship with National Societies

IEEE ACT Section maintains an excellent relation with Engineers Australia through a Section Liaison officer. ACT Section contributes in the organization of seminars given

C3. Collaboration with other IEEE Sections

- Support extended to neighboring Sections
- Joint activities with any other Section

C.4 Support extended to Sub-sections & Society Chapters within the Section

The Section contributed to local costs of speakers at seminars and other events of various Chapters and Affinity Groups.

C.5 Best Practices of your Section (which you would like to share with other Sections for the benefits of members)

The Section coding activity was a very successful activity that was much appreciated by the attending scholars and public either at the Open Market Day (Univ. Canberra July 23-24, 2014) or during the science week at Questacon (Aug 18-22).

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

PART D - GOALS AND PLANS

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

The Section intends to organize promotional activities targeting students in the three universities in Canberra with the aim to attract a larger number of students members.

D.2 Goals and Future Plans

The ACT Section will keep trying to improve the membership retention and attract new members to IEEE however knowing that the Australian Capital Territory is relatively a small state with a population of no more than half million the IEEE members is > 0.1% of the ACT total population. Hence the potential of further increasing the IEEE number will always be quite challenging.

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