

IEEE New Zealand Central Section Report

31 January 2020

PART A - SECTION SUMMARY

A.1 Executive Summary

- Section Executive Committee Member List
 - Chair: Dr Murray Milner
 - Immediate Past Chair: Professor Donald Bailey
 - Secretary: Associate Professor Steven Le Moan
 - Treasurer: Dr Yi Mei
 - Membership Development: Chanjief Chandrakumar
 - Webmaster: Professor Richard Harris
 - Industry Coordinator: Sridhar Pulikanti
 - Young Professionals: Abhipray Paturkar, Sudhir Singh
 - Victoria Student Branch Chair: Arif Ahmed
 - Massey Student Branch Chair: Chanjief Chandrakumar
 - Student Counsellor: Mengjie Zhang, Donald Bailey
 - Central CI Chapter Chair: Mengjie Zhang
 - NZ Joint SP/IT Chapter Chair: Yusuke Hioka
 - NZ Communications Chapter Chair: Nurul Sarkar
 - NZ I&M Chapter Chair: Akbar Ghobakhlou
 - Central Power and Energy Chapter Chair: Ramesh Rayudu
 - Xiang Gui
 - Gourab Sen Gupta
 - Kenneth Mercer

- Section Highlights
 - The New Zealand Central Section has had another good year in 2019, with many events being delivered for members across many areas of interest. Many of these events involved Distinguished Lecturers from around the world. It is these activities which members find most interesting and enable us all to keep at the forefront of research within our fields of interest.
 - In 2019 we again held our two most prestigious events, being the Postgraduate Symposium and the Combined Institutions Breakfast. The first of these events is primarily focused on our student members, while the latter is focused on our industry collaboration. These events were again well received by members. More details on these events are provided below.

- Major Events (International, National)
 - 12-14 February 2019: Multicore World conference. IEEE NZCS members were offered a 10% discount to attend this conference and at no cost to the section. The 8th Multicore World is held annually in Wellington and provides the knowledge and strategies to future-proof your technological innovation. Speakers were from Intel, Arm, Facebook, Oracle, Broadcom as well as from the major US National Labs (Oak Ridge, Los Alamos, Argonne, PNNL) and from Japan, Singapore, Netherlands, UK.
 - 10-13 June 2019: VUW and the CI Chapter hosted an IEEE CIS Flagship Conference on Evolutionary Computation, the 2019 IEEE Congress on Evolutionary Computation (IEEE CEC 2019) in Wellington on 10-13 June. There are nearly 600 people attended the conference from 73 countries. Five public lecturer/keynote speeches were delivered by international famous researchers, 18 tutorials were given by domain experts, 11 competitions and 3 workshops were included, and over 400 papers were presented at the conference.
 - 10 June 2019: IEEE Distinguished Lecture by Professor Kay Chen Tan. This lecture was held as part of the 2019 IEEE Congress on Evolutionary Computation - 10-13 June 2019 in Te Papa, Wellington. Professor Tan spoke on “Advances in Evolutionary Dynamic Multi-Objective Optimization” to an audience of some 100 people.

- 29 July 2019: VW-Stiftung project. This was a joint MEE / CRISP / IEEE NZ Signal Processing and Information Theory Chapter seminar held at Massey University, Palmerston North. The presenter was Sven Simon, Professor of Parallel Systems, Institute of Parallel and Distributed Systems, University of Stuttgart, Germany. His topic was “Industrial 3D Computed Tomography with Applications in Electrical Engineering”. Details can be found at: IEEE NZ Central Section website in the Recent Events section <http://ewh.ieee.org/r10/nzc/#RecentEvents> .
- 18-21 November 2019: 11th EAI International Conference on Ad Hoc Networks (ADHOCNETS 2019) to be held in Queenstown, New Zealand. (<http://www.adhocnets.org/>) The annual International Conference on Ad Hoc Networks (AdHocNets) focuses on ad hoc networking technologies and their applications.
- 27-29 November 2019: The International Telecommunication Networks and Applications Conference ITNAC. This annual event is held every year either in Australia or New Zealand (www.itnac.org.au) and it is New Zealand's turn to host the event this year. ITNAC 2019 seeks to address and capture highly innovative and state-of-the-art research from academia, the communications industry and standardization bodies that covers distributed, mobile, cognitive and cloud computing, modelling and simulation, computer and data communications, local and metropolitan networks, optical, wired and wireless telecommunication networks and applications.
- Major Chapter Activities
 - IEEE NZ Communications Society Chapter
 - 16 November 2019: IEEE-IQRA Community Workshop: We had a successful community workshop at IQRA academy (YMCA Complex, Rocket Park, Auckland) on Saturday 16 November 2019. About 60 people attended the event mostly students and their parents. This workshop provided an overview of IEEE resources for students and offered an interactive session on some aspects of emerging communication technologies for humanity. Organising Chair: Associate Professor Nurul Sarkar opened the workshop by introducing IEEE mission and vision. Dr Sonia Gul from Auckland University of Technology gave an interesting lecture on Recent Advances in Autonomous Cars followed by interactive Quizzes. Finally, we had panel discussion on the topic by Dr Sonia Gul, Dr Ataur Rahman, Dr Afsar Uddin (Principal, IQRA Academy).
 - 26 November 2019: ComSoc DLT event: We have successfully hosted IEEE ComSoc DL lecture in Wellington on 26 November this year. Our IEEE DL Dr R Venkatesha Prasad (TUDelft, The Netherlands) has delivered his lecture on “Murphy Loves Constructive Interference” at VUW. This event was cosponsored by IEEE ComSoc and NZC.
 - 27-29 November 2019: The International Telecommunication Networks and Applications Conference ITNAC. This annual event is held every year either in Australia or New Zealand (www.itnac.org.au) and it is New Zealand's turn to host the event this year. ITNAC 2019 seeks to address and capture highly innovative and state-of-the-art research from academia, the communications industry and standardization bodies that covers distributed, mobile, cognitive and cloud computing, modelling and simulation, computer and data communications, local and metropolitan networks, optical, wired and wireless telecommunication networks and applications.
 - IEEE NZ Instrument and Measurement Society Chapter
 - 1 October 2019: Workshop on Hyperspectral and thermal remote sensing - From Data to Applications This event was held at Massey University and involved some 18 speakers on the above topic. Further information can be found at IEEE NZ Central Section file:///D:/My Webs/IEEECentral2/index.html4 of 8 2/11/2019, 10:25 am.
 - 21/22 November 2019: Colour and Visual Appearance in Computer Graphics and 3D Printing. This event is co-sponsored by the IEEE New Zealand Central Section and Massey University. It involves a number of presentations on related topics as follows:
 - Fabricating Beauty:
 - The Art and Science of Graphical 3D Printing
 - Prof Philipp Urban, Head of Competence Center
 - Fraunhofer Institute for Computer Graphics Research (Germany)
 - Voxel Printing Hyper-realistic Eyeballs

- Tor Robinson, Digital Manufacturing R & D Specialist
 - Weta Workshop
 - Cinematic Mixed Reality Rendering
 - Dr Andrew Chalmers, Researcher
 - Victoria University of Wellington
- IEEE Power and Energy Society Chapter
 - 25 June 2019: Public Seminar by Raghavender Goud Deshagani (Raghu). Raghu was awarded one of five student participation awards at the Electrical Safety Workshop held in Jacksonville, Florida, USA in March of this year (see above). He will present his award-winning paper and his observations from the conference at which it was presented. His talk was entitled “Factors Determining the Effectiveness of a Wind Turbine Generator Lightning Protection System”. The seminar was held at Victoria University of Wellington and some 12 people enjoyed the presentation and associated discussion.
 - 26 June 2019: IEEE PES Distinguished Lecture by Dr. Damir Novosel. This was a lecture organised by the PES NZ Central Chapter, Transpower, and Victoria University of Wellington jointly with IET and EEA. The Distinguished speaker was from IEEE Power and Energy Society visiting New Zealand to deliver the Keynote during EEA 2019 conference.
 - 2 July 2019: IET / IEEE Joint Event Presented by Dr. Stuart Johnson. This a joint event by the IET and IEEE was entitled “Developing a distribution network for the future proofing of households”. The talk provided an overview of 'Australian Open Network Program' that is future proofing household PV installations and battery systems in Australia. It was held at the Beca Offices in Wellington and was attended by about 25 people.
 - 7 November 2019: IEEE PES Distinguished Lecture by Dr. Joseph Minervini from the Plasma Science and Fusion Centre, Massachusetts Institute on the topic of Compact Fusion: A Faster Path to Limitless Clean Energy. This lecture is being organised by IEEE PES NZ North (Auckland), IEEE PES NZ Central (Wellington) and IEEE PES South (Christchurch), New Zealand Electrical Energy and Power Sciences (NZEEPS) and the Robinson Research Institute, Victoria University of Wellington. (IEEE NZ Central Section file:///D:/My Webs/IEEECentral2/index.html)
- IEEE NZ Signal Processing and Information Theory Chapter
 - 29 July 2019: VW-Stiftung project. This was a joint MEE / CRISP / IEEE NZ Signal Processing and Information Theory Chapter seminar held at Massey University, Palmerston North. The presenter was Sven Simon, Professor of Parallel Systems, Institute of Parallel and Distributed Systems, University of Stuttgart, Germany. His topic was “Industrial 3D Computed Tomography with Applications in Electrical Engineering”. Details can be found at: IEEE NZ Central Section website in the Recent Events section <http://ewh.ieee.org/r10/nzc/#RecentEvents>.
- IEEE Central Computational Intelligence Society Chapter
 - 10-13 June 2019: VUW and the CI Chapter hosted an IEEE CIS Flagship Conference on Evolutionary Computation, the 2019 IEEE Congress on Evolutionary Computation (IEEE CEC 2019) in Wellington on 10-13 June. There are nearly 600 people attended the conference from 73 countries. Five public lecturer/keynote speeches were delivered by international famous researchers, 18 tutorials were given by domain experts, 11 competitions and 3 workshops were included, and over 400 papers were presented at the conference.
 - 10 June 2019: IEEE Distinguished Lecture by Professor Kay Chen Tan. This lecture was held as part of the 2019 IEEE Congress on Evolutionary Computation - 10-13 June 2019 in Te Papa, Wellington. Professor Tan spoke on “Advances in Evolutionary Dynamic Multi-Objective Optimization” to an audience of some 100 people.
 - 14 June 2019: The CI chapter hosted a discussion seminar at Cotton Building Room CO 350 at Victoria University of Wellington on 14 June at 3:00-5:00pm, and invited Five IEEE Fellows (Hisao Ichibushi, Yuhui Shi, Carlos Coello Coello, Yew-Soon Ong, Yaochu Jin) and four professors (Victor Ciesielski, Ke Tang, Andy Song, Xiaodong Li) who attended the IEEE CEC 2019 conference to discuss evolutionary computation research challenges and future directions. Over 40 people including 20 CI Chapter members participated in the discussions.

- 2019: 300
- Summary and evidence of work done to improve the value of membership, which leads to retention and growth of members
 - Each year letters are sent to members within the Section coverage area who are late to pay their fees for the new year.
 - We have had an active program of section activities, particularly focused on Chapter activities to encourage more participation by members with specialist interests.
 - We have had a strong program within the two universities associated with the section, particularly with postgraduate students. This is reflected in the strong participation with the joint Postgraduate Presentation Day. However, for undergraduate students, the local university engineering societies are more visible, and we need to better coordinate with them.
 - We have active representation from industry on the committee.

B.2 Chapter Activities

- Total number of Chapters in the Section: Five
 - Chapter of the Instrumentation and Measurement Society (joint with NZ North and NZ South)
 - Chapter of the Communications Society (joint with NZ North and NZ South)
 - Joint Chapter of the Signal Processing and Information Technology Societies (joint with NZ North and NZ South)
 - Chapter of the Power and Energy Society
 - Chapter of the Computational Intelligence Society
- Number of Chapters formed in the current year
 - No new chapters formed during 2019
- Number of active Chapters (Chapters who have reported required number of meetings during the year)
 - Five
- Summary of Chapter activities (Chapter wise with attachment table/information)
 - See above

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

- 12-14 February 2019: Multicore World conference. IEEE NZCS members were offered a 10% discount to attend this conference and at no cost to the section. The 8th Multicore World is held annually in Wellington and provides the knowledge and strategies to future-proof your technological innovation. Speakers were from Intel, Arm, Facebook, Oracle, Broadcom as well as from the major US National Labs (Oak Ridge, Los Alamos, Argonne, PNNL) and from Japan, Singapore, Netherlands, UK.
- 10 June 2019: IEEE Distinguished Lecture by Professor Kay Chen Tan. This lecture was held as part of the 2019 IEEE Congress on Evolutionary Computation - 10-13 June 2019 in Te Papa, Wellington. Professor Tan spoke on “Advances in Evolutionary Dynamic Multi-Objective Optimization” to an audience of some 100 people. The IEEE NZCS did not need to contribute towards this event.
- 14 June 2019: The CI chapter hosted a discussion seminar at Cotton Building Room CO 350 at Victoria University of Wellington on 14 June at 3:00-5:00pm, and invited Five IEEE Fellows (Hisao Ichibushi, Yuhui Shi, Carlos Coello Coello, Yew-Soon Ong, Yaochu Jin) and four professors (Victor Ciesielski, Ke Tang, Andy Song, Xiaodong Li) who attended the IEEE CEC 2019 conference to discuss evolutionary computation research challenges and future directions. Over 40 people including 20 CI Chapter members participated the discussions.
- 25 June 2019: Public Seminar by Raghavender Goud Deshagoni (Raghu). Raghu was awarded one of five student participation awards at the Electrical Safety Workshop held in Jacksonville, Florida, USA in March of this year (see above). He will present his award-winning paper and his observations from the conference at which it was presented. His talk was entitled “Factors Determining the Effectiveness of a Wind Turbine Generator Lightning Protection System”. The seminar was held Victoria University of Wellington and some 12 people enjoyed the presentation and associated discussion.
- 26 June 2019: IEEE PES Distinguished Lecture by Dr. Damir Novosel. This was lecture organised by the PES NZ Central Chapter, Transpower, and Victoria University of Wellington jointly with IET and EEA. The Distinguished speaker was from IEEE Power and Energy Society visiting New Zealand to deliver the Keynote during EEA 2019 conference.

- 2 July 2019: IET / IEEE Joint Event Presented by Dr. Stuart Johnson. This a joint event by the IET and IEEE was entitled “Developing a distribution network for the future proofing of households”. The talk provided an overview of 'Australian Open Network Program' that is future proofing household PV installations and battery systems in Australia. It was held at the Beca Offices in Wellington and was attended by about 25 people.
- 29 July 2019: VW-Stiftung project. This was a joint MEE / CRISP / IEEE NZ Signal Processing and Information Theory Chapter seminar held at Massey University, Palmerston North. The presenter was Sven Simon, Professor of Parallel Systems, Institute of Parallel and Distributed Systems, University of Stuttgart, Germany. His topic was “Industrial 3D Computed Tomography with Applications in Electrical Engineering”. Details can be found at: IEEE NZ Central Section website in the Recent Events section <http://ewh.ieee.org/r10/nzc/#RecentEvents>.
- 1 October 2019: Workshop on Hyperspectral and thermal remote sensing - From Data to Applications This event was held at Massey University and involved some 18 speakers on the above topic. Further information can be found at IEEE NZ Central Section file:///D:/My Webs/IEEECentral2/index.html4 of 8 2/11/2019, 10:25 am.
- 7 November 2019: IEEE PES Distinguished Lecture by Dr. Joseph Minervini from the Plasma Science and Fusion Centre, Massachusetts Institute on the topic of Compact Fusion: A Faster Path to Limitless Clean Energy. This lecture is being organised by IEEE PES NZ North (Auckland), IEEE PES NZ Central (Wellington) and IEEE PES South (Christchurch), New Zealand Electrical Energy and Power Sciences (NZEEPS) and the Robinson Research Institute, Victoria University of Wellington. (IEEE NZ Central Section <file:///D:/My Webs/IEEECentral2/index.html>)
- 16 November 2019: IEEE-IQRA Community Workshop: We had a successful community workshop at IQRA academy (YMCA Complex, Rocket Park, Auckland) on Saturday 16 November 2019. About 60 people attended the event mostly students and their parents. This workshop provided an overview of IEEE resources for students and offered an interactive session on some aspects of emerging communication technologies for humanity. Organising Chair: Associate Professor Nurul Sarkar opened the workshop by introducing IEEE mission and vision. Dr Sonia Gul from Auckland University of Technology gave an interesting lecture on Recent Advances in Autonomous Cars followed by interactive Quizzes. Finally, we had panel discussion on the topic by Dr Sonia Gul, Dr Aatur Rahman, Dr Afsar Uddin (Principal, IQRA Academy).
- 18-21 November 2019: 11th EAI International Conference on Ad Hoc Networks (ADHOCNETS 2019) to be held in Queenstown, New Zealand. (<http://www.adhocnets.org/>) The annual International Conference on Ad Hoc Networks (AdHocNets) focuses on ad hoc networking technologies and their applications.
- 21/22 November 2019: Colour and Visual Appearance in Computer Graphics and 3D Printing. This event is co-sponsored by the IEEE New Zealand Central Section and Massey University. It involves a number of presentations on related topics as follows:
 - Fabricating Beauty:
 - The Art and Science of Graphical 3D Printing
 - Prof Philipp Urban, Head of Competence Center
 - Fraunhofer Institute for Computer Graphics Research (Germany)
 - Voxel Printing Hyper-realistic Eyeballs
 - Tor Robinson, Digital Manufacturing R & D Specialist
 - Weta Workshop
 - Cinematic Mixed Reality Rendering
 - Dr Andrew Chalmers, Researcher
 - Victoria University of Wellington
- 26 November 2019: ComSoc DLT event: We have successfully hosted IEEE ComSoc DL lecture in Wellington on 26 November this year. Our IEEE DL Dr R Venkatesha Prasad (TUDelft, The Netherlands) has delivered his lecture on “Murphy Loves Constructive Interference” at VUW. This event was cosponsored by IEEE ComSoc and NZC.
- 27-29 November 2019: The International Telecommunication Networks and Applications Conference ITNAC. This annual event is held every year either in Australia or New Zealand (www.itnac.org.au) and it is New Zealand's turn to host the event this year. ITNAC 2019 seeks to address and capture highly innovative and state-of-the-art research from academia, the communications industry and standardization bodies that covers distributed, mobile, cognitive and cloud computing, modelling and simulation, computer and data communications, local and metropolitan networks, optical, wired and wireless telecommunication networks and applications.

- 13 December 2019: Prof Michael Winikoff delivered a talk on Agent Systems for the Chapter on 13 December 2019 at VUW Cotton Building Room CO 350. Over 35 people attended the seminar, including 15 CI chapter members and graduate student members.

B.4 Students Activities

- Total number of Student Branches in the Section
 - Two – Massey University and Victoria University of Wellington
- Number of Student Branches formed in the current year
 - None
- Section level student activities (student congress, paper and other contests, awards etc)
 - 26 August 2019: IEEE Postgraduate Symposium held at Massey University in Palmerston North This event involved presentations from some 33 master and PhD students from Massey University, Palmerston North and Victoria University, Wellington who presented their research work. In addition, there were approximately 30 fellow students who enjoyed the presentations. The three best presentations were recognized and awarded with prizes.
- Number of active Student Branches (Student Branches who have reported required number of meetings during the year)
 - Two
- Summary of Student Branch activities (Student Branch wise with attachment table/information)
 - As per above.

B.5 Affinity Group Activities

- Young Professional (YP)
 - In 2018 we had a very active Young Professionals group, but due to the departure of 2-3 key members to take up professional activities in other parts of New Zealand and overseas we have had a lull in YP activity in 2019.
 - However, in November a very successful series of two events were held for Young Professionals in conjunction with the Instrument and Measurement Chapter at Victoria University of Wellington and Massey University on consecutive evenings as follows:
 - 21/22 November 2019: Colour and Visual Appearance in Computer Graphics and 3D Printing. This event is co-sponsored by the IEEE New Zealand Central Section and Massey University. It involves a number of presentations on related topics as follows:
 - Fabricating Beauty:
 - The Art and Science of Graphical 3D Printing
 - Prof Philipp Urban, Head of Competence Center
 - Fraunhofer Institute for Computer Graphics Research (Germany)
 - Voxel Printing Hyper-realistic Eyeballs
 - Tor Robinson, Digital Manufacturing R & D Specialist
 - Weta Workshop
 - Cinematic Mixed Reality Rendering
 - Dr Andrew Chalmers, Researcher
 - Victoria University of Wellington
 - At our AGM in December, we had increased interest in the Young Professionals Affinity Group.
 - Early in 2020, the Section will encourage the re-establishment of the YP group and plan a future set of activities for this group.
- Women In Engineering (WIE)
 - There was a reduction in WIE activity during 2019 due to the absence of two of our members on maternity leave.
 - This has been a challenge for WIE continuity that we need to address.
 - Fortunately, these members are returning from leave in 2020 and at the AGM indicated their desire to re-invigorate the WIE affinity group.
- Life Member (LM)
 - The Section has seen a growth in Life Members over the last year and we expect this trend to continue as our membership ages.

B.6 Awards & Recognition Activities

- Award constituted by the Section
 - The key awards constituted by the Section are those in support of the Postgraduate Presentation Symposium.
 - These awards for best presentation are presented each year at the Symposium.
- Please list all Awards and Recognitions received by the Section, and members in the Section, from R 10 and IEEE HQ during the year
 - Recruitment Goal Award for 2019, in recognition of the Section meeting its recruitment goal for the 2019 year. This is a goal that we need to achieve every year, but it is good to receive some recognition for our efforts, especially those of our membership coordinator: Abhipray Paturkar.
 - A Postgraduate student member from VUW, Raghavender Goud Deshagani (Raghu) was awarded a prize to attend the IEEE Industry Applications Society Electrical Safety Workshop in March 2019.

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

- Newsletter (name and number of issues in the year)
 - Not Applicable
- Home Page of the Section (give the URL and how often it is updated)
 - The Section website is updated regularly with activity information, both as announcements of upcoming events, and reports on the events as they happen. The URL is <http://www.ewh.ieee.org/r10/nzc/>
 - The website is kept regularly up to date by our very active webmaster Professor Richard Harris – Richard ensures that all activities involving the Section are recorded on the website in a timely manner and he frequently chases committee members to ensure that reports on recent events are recorded quickly, with photos where possible.
- Other means of contacts with Section members including social media
 - Members are notified of upcoming events through e-notices.

B.8 Industry Relations

- Membership growth and retention
 - We are fortunate to have a new industry based member who has volunteered to take on the role of Industry Coordinator for 2020.
 - We hope that this injection of new blood and enthusiasm, with support for the rest of the committee will enable revitalization of our industry program and encourage growth in membership from industry in 2020.
- Activities for/with industrial members
 - We aim to hold another annual Combined Institutions breakfast event in 2020 - these event always have a prominent industry based speaker.
 - As part of Industry relations activity, we shall include webinars by prominent industry speakers (national or international) - need to exercise the methods of webinar program execution.
 - We shall explore the options of joining the company as a member rather than its employers.

B.9 Humanitarian Technology Activities

- Humanitarian Technology related activities supported by the Section including collaboration with other OUs.
 - None
- SIGHT Activities
 - None

B.10 Community Activities

- IEEE Social activities (Family day, IEEE day, Engineers Week)”
 - AGM BBQ combined with a series of short talks.

PART C - OTHERS

C.1 Special Events

- The primary Special Event held during 2019 was the Combined Institutions Breakfast Symposium.
- This event included joint sponsorship from IEEE, IET and ENZ.
- The event was also jointly funded by the three institutions.

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

- Nature of relationship and details of any formal agreement signed
 - Engineering New Zealand (ENZ)
 - Collaboration Agreement signed some years back – needs to be renewed
 - Joint events held annually
 - Considerable overlap in membership
 - Institute of Engineering and Technology IET)
 - Collaboration Agreement signed some years back – needs to be renewed
 - IEEE NZCS Chair is also an IET Wellington Network Committee member
 - Considerable overlap in membership
 - Several joint events held annually
- Details of joint activities
 - Primary joint event with ENZ and IET held annually is the Combined Institutions Breakfast event.
 - Other events held on a collaborative basis as appropriate.
- Benefit to IEEE members (for example discounts, access to technical information etc.)
 - IEEE members get to access technical seminars and other events which would not be otherwise possible without multiple membership fees
- Benefit to Section (for example help in membership development, venue facilities, cost saving etc.)
 - Greatly increased range of activities for members with less organizational effort
 - Leverage the scale and scope of three organizations for the benefit of members
 - Reduces competition for members between these three organizations

C3. Collaboration with other IEEE Sections

- Support extended to neighboring Sections
 - Many activities are undertaken collaboratively with the New Zealand North and South Sections
 - Several Chapters are Joint with the North and/or South Sections in order to ensure scale and scope of activities.
 -
- Joint activities with any other Section
 - 7 November 2019: IEEE PES Distinguished Lecture by Dr. Joseph Minervini from the Plasma Science and Fusion Centre, Massachusetts Institute on the topic of Compact Fusion: A Faster Path to Limitless Clean Energy. This lecture is being organised by IEEE PES NZ North (Auckland), IEEE PES NZ Central (Wellington) and IEEE PES South (Christchurch), New Zealand Electrical Energy and Power Sciences (NZEEPS) and the Robinson Research Institute, Victoria University of Wellington. (IEEE NZ Central Section file:///D:/My Webs/IEEECentral2/index.html).

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

- Support extended for organizing technical, educational and professional activities
 - There are no sub-sections within the New Zealand Central Section
 - The NZCS always works to support Society Chapters in a collaborative manner with funding as required.
 - All Chairs of Chapters and Joint Chapters are invited to participate in monthly Section Committee meetings.
- Joint activities for membership development
 - Society Chapter Chairs are involved in all membership development activities undertaken by the Section.
- Support extended for the formation of a Sub-section or transition of a Sub-section into a full Section
 - Not applicable

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

- Maintaining regular (monthly) committee meetings.
- We have defined a "Portfolio responsibilities" document, which outlines the roles and responsibilities for the various portfolios on the executive committee.
- Close coordination of activities with those of affiliated groups such as Engineering New Zealand and Institute of Engineering and Technology.
- The New Zealand Central Section has two annual activities which we believe represent best practice. These are:
 - An annual industry breakfast seminar event which is held jointly with the local IET network and the Wellington Branch of Engineering New Zealand. This event is especially targeted at industry members from all three Institutions. It also provides an excellent platform for collaboration with our sister professional institutions operation in our region.
 - The annual Postgraduate Presentation Symposium which involves participation across the two postgraduate universities within the Central Region and typically has around 20 participants from each University. Prizes are awarded for the best presentations, but the greatest value is derived from the sharing of research activities from across the region.

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

- New Zealand like many countries has a national engineering institution which in our case is called Engineering New Zealand.
- As Engineering becomes increasingly recognized as a critical discipline for the delivery of safe modern facilities, the requirements placed on engineers to ensure Continuous Professional Development and up to date competency in one's fields of practice increases to the extent that it becomes a matter of Regulatory Compliance,
- The Regulatory Compliance aspect is typically associated with membership and competency evaluation through the national engineering institution, which requires membership of Engineering New Zealand.
- The threat for IEEE is that increasingly engineers must join their national engineering institution to ensure Regulatory Compliance to practice engineering nationally which then puts pressure on funding to also join other institutions such as IEEE.
- This is becoming an increasing competitive threat to institutions such as IEEE and IET in New Zealand.
- It is highly likely that some form of joint membership will be essential in the future, which enables membership of ENZ and IEEE (say) at a reduced rate relative to joining each institution separately.
- Maintaining dynamism within the student branches, especially with a high turnover (students are only with us for a short time). We need to focus on the attraction and retention of members within our two student branches.

PART D - GOALS AND PLANS

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

- Ongoing plans for 2019
 - Continue to organize our very successful joint institutions breakfast meeting for industry.
 - Continue with the successful postgraduate presentation event.
 - Continue to encourage Distinguished Lecturers to present to our members.
 - Continue to send introductory letters to all new members within the Central Region.

D.2 Goals and Future Plans

- Goals
 - To increase membership in all disciplines.
 - To encourage members to enhance their membership level.
 - To actively engage with all members within the Central Region.
- Future Plans
 - To determine what will encourage members to participate in events.
 - To structure a program of events to best match members' needs.

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

- As indicated in Section C6 above, it is becoming increasingly essential to find improved ways to work collaboratively with our national engineering institution, Engineering New Zealand, so that members are not unduly burdened with membership fees for both organizations.
- If we don't find a way to do this, the Regulatory Compliance requirements will ensure that ENZ gets membership priority over IEEE.

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

- New Zealand has its summer holidays during December and January and so Business Planning for the New Year will commence in February 2020.
- Hence the Business Plan for 2020 is at an early stage of development for this report.
- It is expected that the Business Plan will continue the work from previous years as follows:
 - Continued support of Chapter seminars and related activities with particular emphasis on Distinguished Lectures,
 - The holding of the annual Combined Institutions Industry Breakfast event,
 - The holding of the Postgraduate Presentation Symposium by the Combined Student Branches,
 - A continued emphasis on membership development and retention, noting the challenges identified in C6 above,
 - Increased focus on Affinity Groups – finding ways to ensure continuity and growth of the Young Professionals Group and the Women in Engineering Group (we are fortunate in having an increased number of young women in the Section this year who are willing to take on more active roles).