New Zealand North Section Report 2022

PART A - SECTION SUMMARY

A.1 Executive Summary –

- NZ North Section (R00301) Executive Committee Member List
  - Chair: Tek Tjing Lie
  - Vice-Chair: Kevin Wang
  - Treasurer: Nurul Sarkar
  - Secretary: Seho Kim
  - Past Chair: Ho Seok Ahn

  The section officers were nominated and formally elected at the Section AGM.

- Section Highlights
  - **Strategic Plan**: The Section has a new Strategic Plan (which was developed for 2019-2023) that continues from our previous Strategic Plan (which was developed for 2013-2018) for sustainable development. We developed this plan and released it.
  - **Hybrid Meeting**: New Zealand North Section had another successful year in 2022. Although many events had to be done in hybrid mode, we encouraged our members to participate in these events.

- Major Events
  - **IEEE eGRID 2022**
    - The conference was held in a hybrid mode and was attended by more than 100 participants.
  - **Technical events**
    - The Section also technically sponsored or agreed to sponsor the following activities held in conjunction with IEEE eGRID 2022:
      - Future Architecture Network (FAN) workshop

- Major Chapter Activities
  - **Meetings**: The New Zealand North Section organized more than 20 meetings during the year. These included section committee administration meetings, technical seminars, technical/professional meetings, workshops, field trips and social events.
  - **L31 Meeting Reports**: The details of the activities have been listed on the Section website and reported online via IEEE v-tools L31 Meeting Reports.

- Major Student and Affinity Group Activities
  - **Two student branches are active.** We have two active student branches: 1) The Univ of Auckland student Branch and 2) Auckland Univ of Technology Branch.
  - WIE is active now. The Section is in the process of reviving the YP group in 2023.

- Awards
  - **AUT best Electrical and Electronic Engineering Graduate (BE)**: We awarded a prize to the student who got the best grade in the BE (hon) course.
  - **University of Auckland Best Poster for BE (hon)** student in Electrical and Electronic Engineering.
  - **2 Minute Elevator Pitch awards**

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

- Summary (as per submitted L50)
  - The financial report was submitted separately via NetSuite. The Section finances are in a healthy condition with a total balance of NZ$70,759.03 (including Chequeing: $46,913.91, Savings: $5,460.79 and Term deposit: $18,384.33).

- Any other financial activities
  - None

PART B - ORGANIZATIONAL ACTIVITIES

B.1 Membership Development Activities

- The Section has planned some activities to recruit new members and retention.
- The total number of active members in the past 3 years was slightly decreased and all these numbers are taken in January each year.

	2020	2021	2022
Total Number	613	543	517

B.2 Chapter Activities

- The total number of Chapters in the section is 10
- 1 New Chapter was formed – GRSS Chapter
- 9 Chapters are active.
- Chapter Activities:
  - ComSoc Chapter
    - Technical Activity (Wireless Workshop).
    - A Technical seminar was organised.

  - IAS/IES Chapter
    - Two technical seminars were organised.

  - PEL Chapter
    - Technical Seminar given by Dr Hammond Pearce of New York University about Asleep at the Keyboard? Assessing the Security of GitHub Copilot's Code Contributions.
    - Advances in Power electronics activity in Tokyo University of Science, Japan

  - PES Chapter
    - PES Chapter held several committee meetings.
    - PES/PEL Chapters organized the 2022 IEEE eGRID

  - R&A Chapter
    - Five technical seminars were organized.

  - I&M Chapter
    - Technical seminar given by Dr. Ben O'Brien, ABI

  - SP & IT Chapter
    - Technical Seminar given by Nick Eng of University of Auckland about Speech Enhancement.
    - Technical Seminar given by Dr Farah Sarwar of Auckland University of Technology about Detecting and Counting Sheep in UAV Videos.
    - Technical Seminar given by Dr Mathew Legg of Massey University about Ultrasonic Arrays for Pasture Biomass Estimation and Grape Occlusion Detection.

  - VTS Chapter
    - DL given by Prof. Ai-Chin Pang of Department of Computer Science and Information Engineering, National Taiwan University about Enable AIoT Service at Edge/Fog Networks in 5G/6G.
    - Technical seminar (DL) given by Prof. Junmin Wang of Department of Mechanical Engineering at the University of Texas at Austin about Leveraging Integrated Vehicle-Traffic Systems for Efficient, Safe, and Trusted Automation.
    - DL given by Prof. Wen Chen is a tenured professor in Shanghai Jiao Tong University, China about Enable Multi-Antenna Systems by Transmissive Reconfigurable Meta-Surface.
    - DL given by Dr Giovanni Geraci is an Assistant Professor at Universitat Pompeu Fabra in Barcelona about Non-terrestrial Networks: Connecting the Dots between Ground, Air, and Space.

- Technical Seminar given by Assoc. Prof. Utkal Mehta of Department of Electrical and Electronic Engineering, University of South Pacific about System modeling using FraCal (Fractional Calculus).
- Technical Seminar given by Prof Ajit Narayanan of Auckland University of Technology about Will driverless cars know that it is wrong to kill humans?
- DL given by H. Vincent Poor is the Michael Henry Strater University Professor at Princeton University about Machine Learning at the Wireless Edge.
- Technical Seminar given by Prof. Gunes Karabulut-Kurt of Polytechnique Montréal about Communications and Networking in LEO Mega-Constellations.

  o EMB Chapter
    - EMB Chapter held a committee meeting.
    - 2022 IEEE Day EMBS Chapters Torch Relay Public Webinar and Speakers are Dr Hamid GholamHosseini of Auckland University of Technology and the topic is "Biomedical Engineering in Research and Clinical Translations" and Dr Peng Du of University of Auckland and the topic is "Biomedical Engineering in Research and Clinical Translations" from the NZ North Chapter.

B.3 Professional and Continuing Education Activities

- Total number of Student Branches in the Section: 2
- We successfully organized IEEE eGRID 2022.
- STEM Outreach activities: 4 events

B.4 Students Activities

- Total number of Student Branches in the Section: 2.
- Number of Student Branches formed in the current year: None.
- Section level student activities (student congress, paper and other contests, awards etc): The student branch organizes their own activities under the guidance the Section Student Activity Coordinator.
- Number of active Student Branches: 1. UoA Branch, and 2. AUT Branch
- Summary of Student Branch activities:
  o None

B.5 Affinity Group Activities

- Young Professional (YP)
  They organize their own activities, but it is non-active currently.

- Women In Engineering (WIE)
  They organize their own activities: Youth Ignite Event – High School Students; 2-minute elevator pitch event.

B.6 Awards & Recognition Activities

- Award presented by the Section.
  o **AUT best Electrical and Electronic Engineering Graduate (BE)**: We awarded a prize to the student who got the best grade in the BE (hon) course.
  o **University of Auckland Best Poster for BE (hon)** student in Electrical and Electronic Engineering.
  o **2 Minute Elevator Pitch awards**

- Awards received from R10.

B.7 Communication Activities

- Newsletter (name and number of issues in the year): None

- Home Page of the Section: https://ieeenorth.org.nz/. The website is updated regularly with Chapter event reports and Excom reports.

B.8 Industry Relations

- Membership growth and retention
  We have most members from universities, but we do have active members from industry coming to attend IEEE events. Growth and retention in industries are a bit difficult in NZ due to the small size.

- Activities for/with industrial members
  Our IEEE seminars are often deliberately scheduled in late afternoons to make it easier for industrial members to attend, and we plan to have more speakers from industry.

B.9 Humanitarian Technology Activities

- The Section has funded FIJI SIGHT affinity group with PC hardware sponsorship.
- Activities: Natural Language Processing and Reasoning; A Brief on Chinese Traditional Medicine (TCM); The Origin and Development of Satellite Networks.

B.10 Community Activities

- IEEE day EMBS Chapters Torch Relay Public Webinar.

PART C - OTHERS

C.1 Special Events

IEEE eGRID 2022

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

None

C3. Collaboration with other IEEE Sections

- Support extended to neighboring Sections.
  We have joint chapters with NZ South and Central Sections, and have been helping each other in seminar organizations, particularly DLs, conferences sponsorships, etc.

- Joint activities with any other Section
  We had joint activities, particular in organizing local and DL seminars.

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

None

C.5 Best Practices of your Section

- Strong support to the revival of WIE and student branches.

C.6 Problems anticipated and suggestions for solutions if any

- None.

PART D - GOALS AND PLANS

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

We will continue to make the best use of our new Section website for running the Section. We designed and modified the Consultant Database in 2020, using the PAC fund. We will revive the inactive group by providing more support to YP.

D.2 Goals and Future Plans

We developed our new Section Strategic plan (2019-2023) and we will continue to work on it. A summary of the main goals is shown below:

The strategic planning session for the IEEE NZ North section for the year 2019-2023 was organised on 21st July 2018 from 9 am to 5 pm at Newmarket campus, The University of Auckland, Auckland, New Zealand. The event was attended by around 15 people, which included 12 participants from New Zealand and 3 participants from Fiji subsection. The event was organised by Prof. Nirmal Nair and Dr. Ho Seok Ahn and facilitated by Prof. Nirmal Nair and Dr. Latha Murugesan. An effective feedback and knowledge on strategic planning was inculcated to the participants by Prof. Peter from AUT during the event. The discussion during the workshop was around the six focus areas, which included (1) Leadership, Visibility and Recognition, (2) Conferences & Workshops, (3) Bidding for R10 & IEEE global events, (4) Student, Women in Engineering and Teachers-in-Service Program, (5) Chapter rejuvenation and regular committee refresh, (6) Engagement with other NZ and international learned societies and affinity groups (IET, ENZ etc.). The outcome of this workshop is a strategic planning document, which includes the list of strategies, events, and conferences, which will be considered during the year 2019-2023.

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

Provide more tangible benefits to members comparable to those experienced by American members. Discounts on conferences fees for members help, but not all conference organizers are happy to give decent discounts; it would be great if the IEEE could offer some subsidy. We believe that IEEE should reach out to 'middle school' i.e. students in the 7 to 12 year age group. A large portion of this section of the student body decides to keep away from the 'geeky' or 'boyish' professions. Naturally, they need to make a well-informed decision. Our underlying assumption is that some students make this decision of following a path – other than STEM – simply because of an incomplete or erroneous understanding of 'Engineering'. IEEE needs to champion Engineering (Electrical Engineering) to ensure we motivate the very young minds to look at Engineering positively.

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

The Section does have a strategic plan as stated previously which could be the Section business plan.
1.To revive the YP affinity group.
2.To have a very active membership drive especially for Undergraduate students.
3.To offer more activities for members such as social as well as technical activities.
4.To encourage Chapters to be more active in reaching out to their respective members and more activities.
5.To host more international conferences