

A Perspective on the Past While Looking Forward to the Future

Brief History of the First 50 Years of the IEEE Australian/NSW Section



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**IEEE MILESTONE IN
ELECTRICAL ENGINEERING
AND COMPUTING**

Reception of First Communication to
Earth from a Human
Walking on the Moon, 1969

Parke's radiotelescope and Honeysuckle
Creek stations in Australia received voice
and video signals from the Apollo 11
moonwalk, which were redistributed to
millions of viewers. Parke's televised
images were superior to other ground
stations, and NASA used them for much of
the broadcast. One of the first to use the
newly developed corrugated feed horn,
Parke's became the model for the NASA
Deep Space Network large aperture
antennas.

October 2019

 **IEEE**



A Perspective on the Past While Looking Forward to the Future

Brief History of the First 50 Years of the IEEE Australian/NSW Section

Prepared by the

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NSW Section Recognition

Region 10 Outstanding Large Section Award in 2003



2017 Outstanding Section Membership
Recruitment and Retention Performance
New South Wales Section



2018 Outstanding Section Membership
Recruitment Performance
New South Wales Section



2021 Outstanding Section Membership
Retention Performance
New South Wales Section

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The Institute of Electrical and Electronic Engineers, Inc. developed from an amalgamation in 1963 of the American Institute of Electrical Engineers and the Institute of Radio Engineers. Its corporate office is located in Manhattan, New York City and its operations centre is in Piscataway, New Jersey, USA. IEEE has over 400,000 members world-wide.

Front cover: Unveiling of Milestone plaque at Parkes by IEEE President-elect Fukuda assisted by David Burger representing the IEEE History Committee. The Parkes radiotelescope is in the background.

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1. Introduction by IEEE NSW Section Chair

We celebrate on the 16th of August 2022 the 50th Anniversary of the IEEE in Australia and the NSW Section. A gala Anniversary dinner is planned as a centre piece of these celebrations. It gives me immense pleasure to write an introduction to this Booklet, which enables us to look back at our significant achievements as well as to make plans for the future.

This Anniversary is a wonderful opportunity to review and appreciate the strong impact that the formation of the IEEE Australian/NSW Section has had on the electrical engineering profession in Australia during its existence. In its simplest terms, an IEEE local presence has made it much easier to access the wealth of technical information, professional, educational, and networking opportunities that IEEE provides. However, more than that, the IEEE has functioned as a conduit in establishing meetings, workshops, and networking for the profession here in Australia. For example, the NSW Section proposed the joint lecture program with Engineers Australia and the IEE (now IET), which has continued now for more than 40 years.

There have been dramatic changes in electrical technology in the intervening years in which Australia and NSW in particular have taken part. For example, the development of the now ubiquitous Wi-Fi, the bionic ear, and techniques for the treatment of sleep apnea were helped by the achievements of NSW engineers many of whom were IEEE members. The Section has organised or supported many successful international and national conferences and workshops. These have been made possible through extensive work by the Section Committee, Chapters and Affinity Groups. Further, the Section was able to gain its first IEEE Milestone in 2019 as part of the celebration of the 50th anniversary of the Parkes radiotelescope's participation in the first Moon landing.

What of the future? We are likely to see more on-line events as has been demonstrated in recent times with on-line meeting and conferences. More Milestone nominations are in the pipeline as are international conferences. There is healthy activity in the Section's Chapters, which is second to none compared with Sections around the globe. We hope all IEEE members in the NSW Section join with us to celebrate 50 years of activity and representation by IEEE in this State.

Colin Elston

Chair NSW Section 2022

2. Summary of the History of the IEEE in Australia

2.1 Who Is that Mob? - The Story of how the IEEE Australian Section Came About

The story of how the IEEE Australian Section came about, was told to the author by Jim Vasseleu, the man who organised the petition for the establishment of the Australian Section.

After Jim had become an IEEE member, he received an IEEE member lapel badge. One day when he was attending an electrical engineering function in Sydney, he got talking to an electrical engineering colleague. His friend noticed his IEEE lapel badge and said: "I see, you also belong to that mob!"

The two of them, after more discussion, decided that it would be a good idea for an IEEE Australian Section to be formed. Jim then organised an inaugural meeting of IEEE members, at which it was agreed that a petition be sent to IEEE Headquarters for the formation of an Australian Section. This inaugural meeting took place in 1972 at the historic Cellblock Theatre of the National Art School in Darlinghurst, a suburb of Sydney.

After the permission to form the Australian Section was granted and inaugurated, the Australian Section Committee used to meet at the Neutral Bay offices of the consulting engineers where Jim used to work. I was invited to join the Section Committee in late 1974 by Prof. Dick Huey, a colleague of mine at the University of New South Wales, and I have served on the Section Committee ever since, except for a few brief periods overseas. So, I guess that now makes me the longest serving member on the Australia/NSW Section Committee.

Ramutis Zakarevicius

2.2 Historical Summary of Formation

1. The first meeting of IEEE Australian Section members was organised by James J. (Jim) Vasseleu in early 1972 and held at the Cell Block Theatre,

Darlinghurst NSW. It was agreed that a petition for an Australian Section should be submitted and Jim Vasseleu should organise it.



Fig. 2.2.1: Banner of the Australian Section.

2. Shortly afterwards, the 1972 IEEE President, Dr Robert Tanner, made a formal visit to Australia and met with the signatories.
3. After formation, the first meeting was held at Neutral Bay Junction on 12 September 1972, where Jim Vasseleu was elected Chair, Len Clementson Vice Chair and James Deans Secretary/Treasurer.
4. By 12th of October 1972, the IEEE Australian Section By-Laws had been formulated and signed by the Chair J.J. Vasseleu.
5. During 1973, a number of technical meetings were held in cooperation with the National Societies and, in early October, Dr John D. Ryder; 1973 Chair of the IEEE Fellows Committee, visited the Section.
6. In 1976, Jim Vasseleu was appointed Region 10 Director for 1977-78. The local Newsletter name was changed from IEEE NEWS to the current newsletter title of "CIRCUIT". The "CIRCUIT" logo was derived from a printed circuit interpretation of the word.
7. By 1984, the Centenary year of IEEE, the IEEE Australian Section membership had grown over five-fold since its inception. The combined total of the Australian and Victorian Sub-section was in excess of 1700 members. Based on this membership, eight Australians were awarded the 1984 Centenary Medal.

8. Eventually, with the formation of the Victorian Section and the desire for other states to be represented, resulted in a change in the way IEEE operated in Australia and in New South Wales in particular. Approval for the formation of an Australia Council was granted in Dec 1985.

9. In December 1985, after the creation of the Victorian Section, the Australian Section was renamed the New South Wales Section, serving the cities Sydney, Newcastle, Wollongong and Bathurst. This change ensured the continuity of the original IEEE entity in Australia. The IEEE recognition of this is shown in Fig. 2.2.2.

Extracted from IEEE NSW History (<https://site.ieee.org/nsw/>)



IEEE Geographic Unit Organizing Document

The Institute of Electrical and Electronics Engineers, Incorporated (IEEE) is a non-profit corporation, incorporated in the state of New York on 16 March 1896.

The purpose of the IEEE is to engage exclusively in scientific and educational activities within the meaning of Section 501(c)(3) of the Internal Revenue Code of 1986, as amended, directed toward the advancement of the theory and practice of electrical, electronics, communications and computer engineering, as well as computer science, the allied branches of engineering and the related arts and sciences, which benefit the engineering profession and the public.

As authorized by the IEEE Board of Directors, the IEEE Member and Geographic Activities Board (known as IEEE Regional Activities Board prior to 1 January 2008) approved the establishment and boundaries of the IEEE New South Wales Section on 16 August 1972. The New South Wales Section conducts activities which assist the local IEEE members to enhance their professional careers and their communities.

Fig. 2.2.2: Formal recognition of NSW Section on 16 August 1972.

3. Significant Events and Achievements in the History of NSW Section

3.1 Highlights and Activities

3.1.1 Introduction

The IEEE NSW Section has the honour to celebrate the “golden” anniversary of the launch of IEEE local activities in Australia. It was with headquarters in Sydney that the IEEE Australian Section was founded on August 16, 1972. In December 1985, the Australian Section was renamed the NSW Section, after separate Sections were formed in other Australian States.

Thus, this year on August 16, 2022, it is the 50th Anniversary, not just of the establishment of the IEEE NSW Section, but more significantly, the inauguration of IEEE local presence in all of Australia. As IEEE is the world's largest technical professional organisation, committed to advancing technology for the benefit of humanity, the IEEE NSW Section has been honoured to have been the flag-bearer for IEEE activities in Australia for half a century.

This 50th anniversary is a good opportunity to review and appreciate the positive impact that the formation of the IEEE Australian/NSW Section has had on the electrical engineering profession in Australia in its 50 years of existence. Basically, an IEEE local presence can make it much easier to access the wealth of technical information, professional, educational, and networking opportunities, that IEEE has available.

More specifically, the following lists a number of ways that an IEEE local presence has contributed to Australian electrical engineering.

Attracting International Conferences to Australia:

What at once comes to mind is the facilitation for attracting prestigious IEEE conferences to Australia. There have been many prestigious IEEE conferences that have now been hosted in Australia. At the time of the founding of the Australian Section, this was not the case. It took a while before our efforts to attract an important IEEE conference to Australia were successful. Without a local Section this would have been nigh impossible to achieve.

A good example is GLOBECOM 98, the IEEE Communications Society's flagship conference, which Sydney hosted in 1998, through the efforts of the NSW Comms/SP Chapter and the NSW Section as is described in Sec. 3.1.2. It was enormously successful and became the biggest IEEE conference to be held in Australia for a long time, in fact, the biggest telecommunications conference in Australia up to that time. Its success supplied a big input to Australian communications researchers and industry. It also led to the finances of the IEEE NSW Section, which had been teetering on the border between black and red, finally landing firmly in the black and the NSW Section has never looked back. None of this would have been possible without an IEEE local presence, whose members worked very hard to achieve such an outstanding outcome.

Distinguished Lecturer Program:

Bringing distinguished IEEE lecturers to Australia is another important program that is of excellent value to members. There have been many eminent electrical engineers who have come to Australia on behalf of the IEEE, presenting excellent lectures to members on important topics. The inviting, hosting, and coordinating of their visits would be impossible without a local IEEE presence.

IEEE Milestones:

The IEEE Milestones are the world's most significant program for recognising important achievements in the electrical, electronic, and computing fields. Australia's first IEEE Milestone was unveiled in October 2019 at the Parkes radio telescope, for its role in receiving the signals from the moon during the first human moon landing in August 1969. It is hard to see how the recognition of such a Milestone could have been achieved if the NSW Section were not in existence.

Empowering Australian electrical engineers to have an impact in scientific affairs internationally:

Our NSW Section members have made notable contributions to the governance of IEEE, the world's technical professional organisation. NSW Section has provided IEEE Asia-Pacific (Region 10) Directors, Presidents of IEEE Societies, Editors of IEEE Journals, its members contributed to the organisation of international IEEE conferences. To have made impacts to scientific affairs internationally, an IEEE local presence has been a significant enabling factor.

Raising the Profile of the Electrical Engineering Profession:

A local IEEE presence provides an incentive and motivation for members to interact with local technical and non-technical communities, creates opportunities for such interactions to occur and then draw upon the wealth of IEEE technical knowledge to be disseminated locally. All such activities and interactions inevitably raise the profile of the electrical engineering profession within the community.

Ramutis Zakarevicius

3.1.2 GLOBECOM 1998



Fig. 3.1.2.1: GLOBECOM 1998 Organising Committee: Left to right Paul Wines, Ananda Sanagavarupu, Rodney Somerville, Maurice O'Connor, Doug Follett, Jim Logothetis, Ramutis Zakarevičius, John Robinson, Sam Reisenfeld, Branka Vucetic, Hugh Bradlow, Maureen Kemp, Enn Vinnal. Loraine Curtis, Irene Thavarajab, Catherine Ellis.

GLOBECOM 98 was the first major IEEE Conference to come to Australia. After about ten years that the Australian/NSW Section had been in existence, considered it would be of great benefit to Australia if an important international IEEE conference could be attracted to Sydney. Initially it was just wishful thinking, but everything has a beginning.

In the case of GLOBECOM 98, we can regard the formation of the COMMS Chapter within the NSW Section in 1986, that set the ball rolling. The COMMS Chapter became a joint COMMS/SP Chapter towards the end of 1988. Once all that had happened, it was possible to think and plan for the possibility of getting GLOBECOM to Australia, specifically to Sydney.

The founding Chair of the COMMS Chapter, Dr R. Zakarevicius, wrote a letter to COMMS President Paul Green on May 29, 1992, expressing an interest to hold GLOBECOM in Sydney. A favourable reply, dated October 20, 1992, was received from the Director of Meetings & Conferences, R.R. Lane, and the Chapter, now under the chairmanship of Dr Doug Follett

(1990-92) was in position to start a formal application.

A/Prof. Sam Reisenfeld became the Chapter's Chair (1993-94) and the Chapter's chief negotiator in getting the bid for Sydney, with dedicated support from the NSW Section Committee. There were numerous trips overseas to IEEE meetings in the USA and elsewhere for Sam and extensive work by him and the Chapter Committee. Our first bid for GLOBECOM in competition with Singapore in 1995 failed. However, our bid for GLOBECOM in 1998 was successful!

Sam Reisenfeld's dedicated work over many years was crucial for the success of our GLOBECOM bid. At the NSW Section's AGM in 1998 the Section Chairman, Jim Logothetis, presented Sam Reisenfeld a Special Award "for his perseverance with Globecom'98 from its initial proposal at Geneva Gobecom'93 when Sydney gained the Conference to its conclusion".

Telstra accepted the invitation to be the principal patron for GLOBECOM 98 and the Head of the Telstra Research Labs, Dr Hugh Bradlow, became the Conference Chair, with Monash University providing most of the administrative services for the conference.

GLOBECOM is the IEEE Communication's Society's premier flagship conference. Our GLOBECOM 98 in Sydney, November 8-12, 1998, was only the third GLOBECOM to be held outside of the USA since 1982, when GLOBECOM was re-structured as it is today. It received more than 1200 papers (685 accepted), placed in 89 sessions in 14 parallel tracks, and with 30 tutorials. The number of people attending the Conference exceeded all expectations. There were over 1500 Conference attendees – 433 from Australia, 326 USA, 150 Japan, 302 Europe. 231 Asia Pacific (except Japan), 58 Americas (except US), and 4 Africa.

GLOBECOM 98 was by far the biggest IEEE conference in Australia up to that point. In fact, it was the biggest telecommunications conference in Australia up to that time. It provided an opportunity to highlight Australian electrical engineering to an international audience and an opportunity for Australian engineers to interact with international experts. GLOBECOM 98 became an impetus for other important IEEE conferences to be brought to Australia. Since then, we have had the Asia Pacific Microwave Conference (APMC) 2000, the Power Industry Computer Application Conference (PICA), the International Conference on Acoustics, Speech, and the Signal Processing (ICASSP), the International Conference on Communications (ICC) and many others. These days the NSW Section organises four major

international conferences per year, and often it is hard for the Section to keep up with demands for IEEE conferences in Sydney.

As well as GLOBECOM, PICA and APMC were also big financial successes, so that the NSW Section finances became solidly established, so that financially the NSW Section has not looked back since.

3.1.3 Sections Congress & 50th Anniversary Region 10 in 2017



Fig. 3.1.3.1: IEEE President-Elect Jim Jefferies addressing 2017 Section Congress held at the International Convention Centre, Sydney.

The IEEE Member and Geographic Activities (MGA) Board partnered with Region 10 in hosting the IEEE Sections Congress

2017 (SC2017) in Sydney at the International Convention Centre from 11-13 August 2017. The SC2017 theme was "Brilliant Minds Bright Futures". There were three program tracks:

- Engaging Volunteers;
- Engaging Members; and
- Building Technical Communities.

The tracks served to support IEEE members and volunteers in making the best of their IEEE experience. Topics cut across the breadth of IEEE: technical activities, member services, philanthropy and humanitarian activities, networking and careers, conferences and events, and more.

The Section organising committee was Karu Esselle, Chair, Ray Brown, Vice Chair, Dushmantha Thalakatuna, Secretary and John Ypsilantis, Treasurer.

50th Anniversary Region 10



Also in 2017, there was an official Golden Jubilee celebration held in Sydney in September 2017 on the 50th birthday of IEEE Region 10. It was attended by global and regional leaders of IEEE and delegates from Region 10 Sections, who were welcomed to Sydney by the Chair of the host NSW Section Karu Esselle.

3.1.4 IEEE ANZSCON 2017



Fig. 3.1.4.1: Delegates at IEEE ANZSCON 2017 in Sydney.

The 2017 IEEE Australia and New Zealand Students and Young Professionals Congress (ANZSCON 2017) was organised by the IEEE NSW Section and IEEE NSW Young Professionals (YP) Affinity Group. It was held in Sydney at a city-based venue provided by University of Technology Sydney (UTS) from 10-11th of August 2017. This has been the only ANZSCON held in NSW so far.

This was a very special ANZSCON as it was attended by many IEEE members who were even outside Australia, NZ and Region 10, because it was held just before 2017 IEEE Section Congress. Among the speakers were then IEEE President Dr Karen Bartleson and IEEE R10 Director Prof. Kukjin Chun. The event was hosted by the then IEEE Section Chair Prof. Karu Esselle.



© ANZSCON 2017 - IEEE Australia & New Zealand Student & Young Professionals Congress

Fig. 3.1.4.2: IEEE leaders and members including the President Dr Karen Bartleson and R10 Director Prof. Kukjin Chun were invited to a reception hosted by the ANZSCON Team headed by Dr Raheel Hashmi, Dr Syed Abbas and Prof. Karu Esselle in which they celebrated the Golden Jubilee of IEEE R10.

In addition to common events, there were three specialised tracks for Student, YP and Women-in-Engineering activities. Attendees also took the opportunity to celebrate the 50th Anniversary of IEEE Region-10. Various presentations, panel discussions, social activities and networking opportunities were of great interest for the attendees. A harbour cruise dinner was attended by about 170 people that not only provided informal networking opportunities and beautiful views of Sydney harbour icons such as the opera house and harbour bridge. Further details are available at <https://site.ieee.org/anzscon-2017/> .



Fig. 3.1.4.3: IEEE President Karen Bartleson giving her keynote speech at ANZSCON 2017.

Being a unique event of its kind, it brought together the leadership from ten sections across Australia and New Zealand, as well as two

Regional Councils. ANZSCON is an event where young engineering students and young professionals meet and engage to familiarise with trends in science and technology, discuss present and future engineering challenges, develop new skills and share technical, social and professional experiences. The theme of 2017 congress was developing leadership and humanitarian technologies.

3.1.5 CIGRE IEEE NSW Members Participation and Contribution

With many of the original petitioners being members of the Power and Energy Society it is no surprise that over the years there has been staunch support for the activities and interests of those members associated with the power area of Electrical Engineering in the NSW Section.

Many of the NSW Section members have taken part in and contributed towards the activities of CIGRE ("Conseil International des Grands Reseaux Electrique"), the international association of electrical power engineers in the world.

Among those who have participated are Jim Logothetis, Walter Lachs, Philip Dulhunty OAM, Raymond Brown, all of whom have served as Chairs of various committees of CIGRE.

3.1.6 The First Section IEEE Milestone 2019

Dedication at the Parkes Radiotelescope of the IEEE Milestone for Participation in the first Moon Landing

Introduction

On the 20th of July 1969, the first humans landed on the Moon and pictures of the first steps and walk were seen around the world live by television. This was the first time a human had stepped onto the surface of another heavenly body. The signals were received by two ground stations in Australia firstly at the 24m NASA station at Honeysuckle Creek [1-2], near Canberra, and the 64m Parkes radiotelescope [3], which had been specially equipped to be a back-up. These stations were part of an international earth station receiving network established to support NASA.

As part of the 50th anniversary celebrations of this event, the IEEE has recognised Parkes and Honeysuckle Creek's involvement through an IEEE Milestone. This Milestone was recognised by a dedication and unveiling of a plaque at Parkes on the 11th of October 2019. The station at Honeysuckle Creek no longer exists as it was disassembled and parts moved to Tidbinbilla, the location of a current NASA earth station. However, as Parkes

delivered the signal for most of the Moon excursion, and, as it still is an important operational radiotelescope on the international scene, it was the logical location for the IEEE Milestone dedication.

The IEEE Milestones program honours significant technical achievements across electrical and electronic engineering. It is a program of the IEEE History Committee that is administered through the IEEE History Center. Milestones recognise the technological innovation and excellence for the benefit of humanity found across products, services, papers, and patents. Milestones may be proposed by any IEEE member and are sponsored by an IEEE Organizational Unit - such as an IEEE section, society, chapter, or student branch. After a recommendation by the IEEE History Committee and approval by the IEEE Board of Directors, a bronze plaque commemorating the achievement is placed at a suitable site with an accompanying dedication ceremony.

On the Moon

In the journey to the Moon from the Command module, the Lunar Module had been expertly piloted to a safe landing spot in the Sea of Tranquility by astronaut Neil Armstrong [4]. As Armstrong made his way down the ladder of the Lunar Module, he deployed the TV camera. Goldstone and Honeysuckle Creek were monitoring the FM portion of the signal from the Lunar Module, waiting for a TV signal. Just before he set foot on the moon, Houston selected the clearer video coming from Honeysuckle Creek. As the telescope can only go down to about 30 degrees to the horizontal, Parkes received a signal about 7 mins into the landing. The signal from Parkes was used for the rest of Moon landing lasting about 3 hours as it was superior. A TV camera recorded the picture received on a monitor at Parkes and this signal was transmitted to Goldstone in the US.

Originally, Parkes was scheduled to be a backup for the 64m main station at Goldstone but after the excitement of the landing, the astronauts decided to go onto the Moon's surface earlier than planned. At this new time, Australia was in the prime position to receive wideband signals (TV) from the moon. While the TV signal from Parkes went direct to Sydney, the rest of the Parkes data was sent (via Sydney) to Honeysuckle Creek, which demodulated Parkes data and combined it with its own for transmission to Houston. Humanity was able to witness this significant moment in history, with the greatest possible clarity, thanks to the Parkes radiotelescope. The TV pictures were distributed to 600 million people watching it live around the world. The TV was finally switched off by the astronauts, just over 5 hours later, and two and a half hours after the end of the moon walk. It is

because of this historic episode as well as the major technical achievement, which allowed this to happen, that the Parkes Radio Telescope is the location of this IEEE Milestone.

The Parkes Radiotelescope

CSIRO commissioned this unique instrument [3] in the late 1950s to very stringent specifications. Freeman, Fox, and Partners of London prepared a design that met these requirements. The design was completed in 1958. It was fabricated by Maschinenfabrik Augsburg Nurnberg AG (MAN) of West Germany. On-site construction began in May 1960, and it was officially opened by the Australian Governor General on 31st October 1961. At 64 m in diameter, Parkes was the second largest reflector radio telescope constructed after Jodrell Bank in the UK and it was used as a test bed for several future radio telescopes, then in the planning stage. It has several unique technical features including a small analog computer known as the master equatorial, which was designed by Barnes Wallis FRS of WWII Dambusters fame, which is in the concrete column tower supporting the telescope. The dish is 'slaved' to follow its master, which can be programmed to follow a celestial track and thus control the direction of the telescope. The dish has a longer focal length than at Jodrell Bank and this enables it to be more efficiently fed. The first efficient feed was the new concept corrugated horn [5] designed by Australians Harry Minnett and Bruce Thomas FIEEE in 1966 to match the focal field of a parabolic dish [6-7]. The corrugated horn has, since the 1970s, become dominant in ground station applications. Both features and some others were first used on the Parkes radiotelescope. Therefore in 1969, the Parkes radio telescope was superbly positioned to receive the weak signals under adverse local weather conditions. This was just as well as reception from the Moon at Parkes took place in very high winds, gusting to 110 km/h (68 mph), when the dish was fully tipped over at 60 degrees zenith angle (30 degrees elevation), risking damage to the dish to keep the antenna pointed at the moon during the Moonwalk.

Milestone Dedication on October 11, 2019

The dedication of the Milestone at Parkes was attended by about fifty people, which included the IEEE President-elect Toshio Fukuda, the Region 10 Director Akinori Nishihara, representatives of the IEEE NSW Section, which had nominated Parkes for the Milestone, and representatives of most Australian science and engineering academies and organisations such as the Australian Academy of Science (AAS) and Engineers Australia. The Antennas & Propagation Society had supported the Section's nomination,

and I represented the Society. Dr John Reynolds who represented the CEO of CSIRO and is Officer in Charge at Parkes, welcomed all attendees. Dr Fukuda introduced IEEE, the Milestone program and pointed out this IEEE Milestone was the very first for Australia (Fig. 3.1.6.1). David Burger, representing the IEEE History Committee, gave more details of the Milestone program and Parkes' importance.

Dr Fukuda presented John Reynolds with an IEEE medallion struck to celebrate the Moon landing and certificates to the nominating committee members present namely Eddie Fong, Graeme Gwilliam, Ramutis Zakarevicius and myself. We were fortunate enough to have present on the day one of the people involved in July 1969 at Parkes. This was David Cooke who was with CSIRO at the time and oversaw the receivers at the radiotelescope (Fig. 3.1.6.2). He enthralled the gathering with his memories of the day and issues such as high winds blowing during the reception from the Moon. Following David, on behalf of the NSW History Committee, I spoke on the significance of the Parkes radiotelescope's role in the Moon landing [8] and the background to the citation as related above. Some details of the Honeysuckle Creek station and the first signal reception was given by Dr Ed Kruzins, who is currently in charge of the NASA station at Tinbinbilla. The speeches concluded with thanks to all speakers and attendees by the Chair of IEEE NSW Section, Sasha Nikolic.



Fig. 3.1.6.1: The IEEE President-elect Dr Fukuda welcomes guests to the IEEE Milestone dedication and plaque unveiling.



Fig. 3.1.6.2: View of audience at dedication. Speaker is David Cooke who was present during the reception from the Moon in 1969.

The attendees then walked a short distance toward the telescope where a plinth had been placed in the ground. The IEEE Milestone plaque was mounted on the top of this plinth and for the unveiling ceremony was

covered by an IEEE banner. After a few words describing the significance of the occasion, Dr Fukuda removed the banner to applause from the crowd (Figs. 3.1.6.3 and 3.1.6.4). Some local media were present, and a report was televised later that evening in a news bulletin [9]. Another notable event on the dedication day was that it rained when we were enjoying a luncheon provided by the Dish café. There was great excitement because the region around Parkes was in drought at the time.



Fig. 3.1.6.3: The plaque with IEEE President-elect Fukuda (2nd from left) shown here with the Chair of Section, Sasha Nikolic (far left), Region 10 Director Prof. Akinori Nishihara (centre), and members of the nomination committee. The Parkes radio telescope is in the background.



Fig. 3.1.6.4: Milestone citation and plaque on plinth near the Parkes radio telescope.



Figure 3.1.6.5: Medal presented to the Section by the city of Parkes.

A gala dinner to celebrate the occasion was held in the evening following the Milestone dedication. There were several congratulatory speeches including from Dr Fukuda, Barbara Newton deputy mayor of Parkes, who presented a medal to the Section (Fig. 3.1.6.5), Professor Ron Ekers representing AAS and Bruce Howard representing Engineers Australia.

Trevor S. Bird

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3.2 Personalities

Member profiles in this Section are meant to give a snap-shot of members past and present in the Australian/NSW Section. It is not intended to be a complete or exclusive list. The profiles just represent a sample of typical IEEE members in the Section and the electrical engineering profession in NSW more generally.

3.2.1 Jim Vasseleu (1930 – 2007)

Some Memories of Jim - The Founder of IEEE Activities in Australia

Jim Vasseleu was the founder of the Australian Section in 1972, later renamed as the NSW Section as described in Sec. 2. He maintained an active interest in IEEE affairs until his passing in 2007.



It was a pleasure for me to interact with Jim in a multitude of ways. One memorable occasion was at the 1979 Region 10 meeting in Penang, Malaysia. There I was present in my capacity as Australian Section Chair and Jim as the Past Director of Region 10. Due to some problems in booking flights back home, Jim and I had to spend an extra day in Singapore. That evening Jim suggested that, instead of having dinner in some air-conditioned hotel, it would be nice and even adventurous for us to dine in the old Raffles Hotel, which in those days was still resplendent in its old colonial glory, with no air conditioning. There we dined and talked a lot, including a lot about IEEE even in the humidity.

It was always good to have Jim on any IEEE committee, where his comments were always pertinent and contributed to a good outcome. Jim was meticulous in his attention to detail, which ensured that our decisions did not stray from being strictly “legal”.

At his funeral, when I was asked to say a few words, I could not resist in quipping, that while Jim now is looking down on us from above, he undoubtedly is also lobbying St. Peter for the formation of an IEEE Life

Members group there, so that he could welcome us all when our turn comes.

Through a lifetime of service to IEEE Jim held important roles and received high awards. In addition to being the Founder of the IEEE Australian Section and serving as Section Chair Sept 1972-73, he was also the Founder of the Australia Council in 1986, served as Region 10 Director 1977-78, again as NSW Section Chair in 1985-87. He was Board Member IEEE Long Range Planning Committee 1977-78. He received the 1994 IEEE Larry K. Wilson Transnational Award "For more than 20 years of dedicated services, encouraging expansion & development of IEEE in Region10", the IEEE Centenary Award and the IEEE Millennium Award.

Jim's wife Mary predeceased him and he is survived by two daughters.

Ramutis Zakarevicius

3.2.2 Philip Dulhunty OAM



On 29th November, 2020, the IEEE and the Electricity Supply Industry in Australia lost a highly regarded colleague with the death of Philip Dulhunty OAM, LSMIEEE.

Philip joined the IEEE in September, 1969. He was widely respected for the great contributions that he made to Australian industry, and some of the features of his lifetime are given in the following links: *Vale Philip Dulhunty OAM – Latest NEWS (cigreaustralia.org.au)*, *Philip Dulhunty OAM (https://en.wikipedia.org/wiki/Philip_Dulhunty)* and *Lane Cove Legend Philip Dulhunty Still Boxing at 94 – in the Cove*.

In 1956 Philip very bravely employed me to work in his company Dulmison. He had established this company in 1947 to exploit opportunities provided by shortages after WWII. I had completed 2 years of full-time study of an electrical engineering degree, and for personal reasons was obliged to change my study pattern to part-time. My first responsibility was to produce the first product catalogue for the overhead transmission line hardware, for which Dulmison became a major supplier in Australia and overseas, and I wonder if any still are in existence. Since that time I had the privilege of working with, and the pleasure of knowing Philip better over the many years until his death.

To read his autobiography is to get a glimpse of a very great man whose schooling ceased when he was 14 years of age and living in the county town of Port Macquarie, NSW. He was a man of the period of the mid-20th Century living in the Australian community, who achieved greatness in Australian electrical engineering industry.

He was awarded the medal of the Order of Australia in 2004 for *service to international trade through the design, manufacture, and export of equipment such as large high voltage systems, and to aviation, particularly through the Seaplane Pilots Association of Australia.*

Dr Graeme Gwilliam

3.2.3 Dr Walter Lachs



Walter R. Lachs received the B.E. degree in mechanical and electrical engineering, the M. Eng. degree in electrical engineering from Sydney University, and the PhD degree from the University of New South Wales in 1953, 1972, and 1992, respectively. Commencing in 1953, he worked in the Snowy Mountains Hydro-Electric Authority, Cooma, Australia, in communications, contracts, and system planning branches. On moving to the Electricity Commission of NSW, he gained experience in substation design, power system auxiliaries, system operation, system investigations, system planning, and research and development coordination. He joined the IEEE in 1978 and was elected a Fellow in 1994. He was Chair of the NSW Section in 1988 to 1990 and in 1995. After 1988, while at the University of New South Wales, Walter worked on the automatic control of power system emergencies and became an expert in power system instabilities. He was a member of the IEEE Power System Stability Subcommittee and of the CIGRE Task Force 38-02-24 "Defense Plans Against Extreme Contingencies." He made submissions to CIGRE Task Forces 38-02-10 and 38-02-12.

3.2.4 Demetrios (Jim) Logothetis (? – 2005)



Jim Logothetis obtained a Diploma in Electrical Engineering from Sydney Technical College in 1959 and a Bachelor of Engineering from the University of New South Wales in 1963. He was a Member of Engineers Australia, CPEng with NPER Registration and Life Senior Member of IEEE. From 1959 Jim was employed as a design engineer with Australian General Electric (now Alstom) in the Motor Control and Automation Department. In 1965 he joined the Commonwealth Department of Works and worked on the new international terminal at Sydney Airport - on the electrical reticulation systems, including the emergency power back-up systems. In 1968 he joined the Electricity Commission of New South Wales (later Pacific Power) and was employed in the Electrical Plant Department of the Power Engineering Division. He was involved with the design of AC and DC Auxiliary, and UPS Systems for major coal fired, hydro and geo-thermal power stations, both in Australia and overseas. Before his departure from Pacific Power in 1998 he was the Specialist Engineer DC Auxiliary and UPS Systems.

Jim was a Member of the IEEE Standards Board from 1992 to 1995, and again from 1997 to 1998. He was Chairman of Standards Australia Stationary Battery Committee EL 005 and a Member of IEEE Standards Coordinating Committee SCC29 on Stationary Batteries from 1992 to 1998.

His contributions to the NSW section were extensive and valuable. He served as NSW Section Chair (1991-94 & 1996-1998), Section Secretary (1987-90, 1995 & 1999) and Professional Activities Chair (2000-2004). He was also Power Engineering Chapter Chair (1990-93, 1996-97 & 1999-2000). He was a key participant in GLOBECOM 1998 and received the Region 10 Outstanding Volunteer Award in 1998 and the IEEE Millennium Medal in 2000.

Jim passed away on the 18th of June 2005.

3.2.5 Women in Engineering (WIE) in IEEE NSW

Many women have contributed to the success of IEEE NSW Section, Chapters and Student Branches. Although not exclusive, some names that come to mind are Nerida Perkins, Teresa Buczkowska, Branka Vucetic, Kate Carruthers, Filita Barker, Sudipta Chakraborty, Stefanie Boyd, Kim Chin, Nuala Ward, Lyria Bennet-Mosses, Sherry Moghadassi, Elizabeth Bird,

Rodica Raymer, Carolyn McGregor, Helen Lu, Hijab Zahra, Jie Lu, and Sara Hakami. Given the limited information available at hand, I would like to feature the achievements and contribution of one of them here as an example.



Dr Naila Mukhtar (shown on left) has been an active IEEE volunteer at national, regional, section, chapter, and student branch levels. She has contributed to IEEE R10 newsletter, IEEE Computer Society, IEEE NSW Computer Chapter, IEEE Women in Engineering (WIE), IEEE Young Professionals (YP), IEEE MQ Student Branch, and IEEE New South Wales Section. Naila has organised collaborative events with IEEE and non-IEEE groups, in-line with advancing the objectives of IEEE, which resulted in exposure to IEEE WIE and IEEE YP. She has been involved in

organizing activities through IEEE WIE platform to inspire and encourage young generation to join STEM careers.

As an acknowledgement of her service, she has received various awards and support over recent years. Among them are: 2019 IEEE WIE (Global - All Regions) Inspiring Student Member of the year award, 2021 IEEE Commendation for NSW Outstanding Young Professional award, 2021, and 2020 WIE Volunteer of the Month for IEEE R10 Newsletter.

Some of Naila's IEEE voluntary positions are listed below.

- Webmaster and Social Media Coordinator, IEEE R10 Newsletter, Jan 2020 - Present
- Chair, IEEE NSW WIE Affinity Group, Jan 2020 – Present
- Vice-Chair, IEEE NSW Computer Society, Jan 2020 – Present
- Chair, IEEE MQ Student Branch WIE Affinity Group, 2018-19
- Vice-Chair, IEEE NSW WIE Affinity Group, April 2017 – Dec 2019
- Vice-Chair, IEEE MQ Student Branch WIE Affinity Group, 2017-18
- Secretary, IEEE MQ Student Branch, 2017-18.

Compiled respectfully by

Karu Esselle

3.2.6 Dr Ramutis Zakarevičius



Ramutis, affectionately and widely known as Zak, came to Australia from Lithuania in 1949. He studied at the University of Sydney, culminating in a PhD degree in Electrical Engineering. In 1965 he joined the University of NSW, where he lectured and undertook research until retiring as a Senior Lecturer in 1998. His activities have been wide ranging, encompassing telecommunication systems, signal processing, communication & microwave electronics, power electronics. He is co-author of the textbook "Microwave engineering using microstrip circuits" with colleague Henry Fooks, which has been adopted in courses at many universities around the world and is still widely cited. He has held visiting appointments at University College London (1972), University of Ottawa, Canada (1984), CSIRO Division of Radiophysics (1993) & Semiconductor Physics Institute, Vilnius, Lithuania (1993). Since retirement he has continued with part-time academic work at University of NSW, University of Technology Sydney and Macquarie University.

Zak joined the IRE in 1962, just before it merged into the IEEE with the AIEE, so that in 2012 he was recognised as "Member 1st 50 Years". He has served on IEEE Australian/NSW Section Committee continuously since 1974. Zak has held leadership positions as Australian Section Chair 1979-81 and the (Founding) Chair of the NSW Comms/SP Chapter 1986-88. Currently he is the Section Historian (2002-8, 2011 - present) and Chair of the Section History Committee. He was awarded the IEEE Millennium Medal 2000 and the IEEE Outstanding Volunteer Award for Region 10 in 2011.

He is an active member the Australian Lithuanian Community (ALC), serving as President, ALC Federal Executive 2015-16 and President, ALC - Sydney 2001-3 & 2011-14. He has been a major contributor to the Sydney Lithuanian Information Centre website (www.slic.org.au). For relaxation he enjoys playing the piano.

3.2.7 Prof. Andrew Parfitt



Professor Andrew J. Parfitt is the Vice-Chancellor and President of the University of Technology of Sydney since 2021. He graduated with a BE (Electrical and Electronic) and PhD (Electrical and Electronic Engineering) from the University of Adelaide. From 1987 he was with the Defence Science and Technology Organisation at Salisbury in South Australia. In 1992 he joined the academic staff of the Electrical & Electronic Engineering Department at the University of Adelaide and was Associate Dean in the Faculty of Engineering responsible for undergraduate and curriculum matters. In 1998 he joined CSIRO in Sydney, where he was Leader of an antenna group. He was responsible for a number of antenna and radio system research projects including the development of initial antenna proposals for the Square Kilometer Array Radio Telescope, and the construction and commissioning of the FedSat Ka-band transponder system in the Cooperative Research Centre for Satellite Systems.

In 2004, at the conclusion of the CRC he became Director of the Institute for Telecommunications Research at the University of South Australia. He has also held positions as Pro Vice-Chancellor and Vice President: Division of IT, Engineering and the Environment at this university. From 2012 to 2016 he was Deputy Vice Chancellor (Academic) at the University of Newcastle, NSW. He joined UTS in 2017 as the university's Provost and Senior Vice-President. He held other leadership positions including:

- chair of both the South Australia and NSW Sections of the IEEE;
- chair of the Australian Academy of Science National Committee for Radio Science;
- a ministerial appointment to the Commonwealth Government's Space Industry Innovation Council; and
- a director of the Defence Teaming Centre

He is currently Chair of the Universities Admissions Centre in NSW, a Fellow of the Academy of Technological Sciences and Engineering, a Senior Member of IEEE, and a Fellow of Engineers Australia.

3.2.8 John Robinson (1940 – 2018)



John L. Robinson was born in Liverpool, UK in 1940. He obtained a B.Sc. from Bangor University in North Wales (Mathematics and Science) in 1962. He joined British Insulated Callender's Cables (BICC). When it moved to Canada in 1966, he and his wife Olivia moved there. Shortly afterwards, they moved again to Australia in 1972. He worked for BICC, Burndy and Email before setting up his own business selling Safety

Relays and Safety Gear.

John made a significant and longstanding contributions to the NSW Section over more than 30 years. He was an IEEE Millennium Medal recipient in 2000, a Region 10 Outstanding Volunteer Award winner in 2010 and NSW PES Outstanding Engineer Award winner in 2015.

John served on the NSW Section Committee in various capacities and was always courteous and delightful to work with. He joined the Section Committee in 1980 and was Section treasurer of long standing from 1990 to 1998 and again in 2011. He was Section secretary in 1998, Section Chair in 1999 to 2000, he served on IEEE Australia Council was Chair in 2003 to 2004. John participated in the NSW Life Members Affinity Group. With Bruce Poon, John set up electronic Voting for the NSW Section, which allowed more Members to participate in the election of Section Officers. He organised the appending of Oceanic Engineering to the joint Communications/Signal Processing Chapter in 2008 and served as its Financial Officer (2008-16).

He periodically served as NSW Section representative on the Joint Institutions Lecture Program with Engineers Australia and the Institution of Engineering Technology (IET).

In addition to the Committee work detailed above, he was a key member of the organizing committees of the highly successful IEEE conferences GLOBECOM 98, PICA 2001 and Oceans'10, all of which were held in Sydney.

Sadly, John passed away in 2018.

3.2.9 Prof. Trevor S. Bird



Trevor Bird (LFIEEE, FTSE, FIET, Hon.FIE(Aust), FRSN) joined the NSW Section Committee in 1993 when he became the second chair of the MTT/AP Joint Chapter following the foundation chair, Dr Bruce Thomas. He remained on the Section committee for another 10 years during which time he was Chair of the Section in 2001-2. In this role he attended Region 10 Meeting of Sections and Council Chairs in Singapore (2001) and Bangkok (2002). During his tenure, the GOLD Affinity Group was launched in 2002. He served as MTT/AP Joint Chapter Chair on another two occasions after 2002. His involvement in the chapter continues to this time. This participation opened up a wider role in the Antennas and Propagation Society. Initially he was an elected member of its Administrative Committee (AdCom) in 2003 and soon after was invited to be Editor-in-Chief of the Transactions on Antennas & Propagation. He held this position from 2004 to 2010. He was President-elect of the Society in 2012 and President in 2013. He led the Society through its 5-year IEEE Review during that year, which resulted in a very positive report from the IEEE Review Committee. During 2013-14 he served on the IEEE TAB and its nominations committee. He remained on the APS AdCom until 2016. Since 2019 he has been Chair of the AP Society's History Committee. In this role he contributes a bi-monthly column to the Society's magazine, one of which was on the Section's Milestone 2019. He is currently a member of the selection committee of IEEE's Electromagnetics Award and was its Chair in 2020-21. Away from work he enjoys cycling, cooking reading and writing. He has written two books in the past five years.

This overview of Trevor's involvement in IEEE shows how participation in a small way in a Section, such as the one in NSW, can lead to wider roles in IEEE.

3.2.10 Dr Graeme Gwilliam



Graeme Gwilliam (JP, BE, DipEd, MAppSc, EdD, CPEng, FIEAust, SMIEEE, MIET, MACE, MIAMA) spent 15 years of engineering manufacturing/research and construction, the latter in both consulting engineering and project management. There followed 25 years lecturing in electrical engineering at both TAFE and university institutions. After retiring from an engineering career of Consulting/Project Management and teaching Electrical Engineering, Graeme had some time to then concentrate on his involvement in IEEE matters.

Past offices he has held in the NSW Section include Chapter Chair (PES), Section Treasurer and Chair, Co-Chair of IEEE 201st Milestone Award Organising Committee, and Co-Chair of the NSW Section History Committee, and also Chair of NSW Section Nominations, Life Members, Fellow Search and Educational Activities. He has been involved in the organisation/management of numerous conferences and the 2018 Sections Congress held in Sydney.

In 2017 he was appointed inaugural Chair of the Life Members Committee of Region 10, and this was followed by being elected for 2 years to the IEEE Board Life Members Committee.

In 2014 the NSW Section Chair requested of Graeme that the Education Activity Board TISP/STEM Tryengineering programme be established in the NSW Section. This was developed over a period of 7 years with hundreds of school teachers introduced to the IEEE STEM educational resources freely available to them. Graeme was appointed an IEEE STEM Ambassador in 2022.

3.2.11 Prof. Hung Nguyen AM



Hung Nguyen AM was a member of the IEEE NSW Section until 2018 when he was appointed Pro Vice-Chancellor of Swinburne University's Faculty of Science, Engineering and Technology in Melbourne. He has had extensive experience and a significant global profile. He has focused his leadership on championing diversity and actively recruiting and retaining women in Science, Technology,

Engineering and Maths and Medicine (STEMM). He has been involved in research in the areas of biomedical engineering, artificial intelligence, neurosciences and advanced control for more than 25 years, and has developed several biomedical devices and systems for diabetes, disability, cardiovascular diseases and breast cancer.

Professor Nguyen was appointed a Member of the Order of Australia in 2002 and was a finalist for the 2012 NSW Australian of the Year. He has also won numerous teaching and research awards.

3.2.12 A/Prof. Sam Reisenfeld

Past Chair of the Communications and Signal Processing Chapter in IEEE NSW Section



Sam Reisenfeld was the Chairman for six years of the Communications and Signal Processing (COMMS/SP) Chapter in the IEEE NSW Section. During that time, the Chapter Committee had monthly meetings at the University of Technology, Sydney. The Chapter Committee's diverse membership consisted of individuals from the Sydney area universities, the electronics and telecommunications industries, and telecommunications service providers. During this time, the Committee organised numerous technical presentations. These presentations were widely publicised and were well attended by IEEE COMMS/SP Chapter members, IEEE members from other Chapters, and non-members of the IEEE. Students were encouraged to attend the presentations.

The technical activities of the COMMS/SP Chapter were the catalysts for many extremely valuable professional collaborations. Individuals working in related technical areas had the opportunities to gain experience about interesting, ongoing, local work and to be aware of enabling and disruptive technological advancement. Attendance at meetings helped to cement strong, professional bonds between individuals which transversed corporate and field specialization barriers. The local activities organised by the COMMS/SP Chapter Committee were valuable to the IEEE members, both professionally and personally.

A major activity of the Chapter was the preparation of a bid for the IEEE Communication Society GLOBECOM Conference with a Sydney, NSW

venue. Starting in 1991, Sam closely collaborated with Dr Doug Follet in the preparation of the Sydney bid for the conference. After becoming the Chairman of the COMMS/SP Chapter in 1992, he was successful in bringing the IEEE GLOBECOM Conference to Australia. He attended two international Communications Society conferences per year and made a presentation on the Sydney bid progress at each meeting. A bid for GLOBECOM 95 was unsuccessful. However, a subsequent bid to the IEEE GLOBECOM and ICC Conference Board (GICB) for GLOBECOM 98 was successful. The members of the COMMS/SP Chapter Committee accepted key roles on the GLOBECOM 98 Organizing Committee and fulfilled critical functions which made GLOBECOM 98 an outstanding success. GLOBECOM 98 was, at the time, the largest IEEE Conference or telecommunications conference of any kind with an Australian venue. GLOBECOM 98 opened the floodgates for major international engineering conferences in Australia. The large income for the NSW Section derived from GLOBECOM 98 was significant in the support of later numerous important IEEE NSW activities and initiatives.

3.2.13 Dr Bruce Poon



Dr Bruce Poon has been the NSW Membership Development Chair for over 30 years. He obtained a B.Sc. (Computer Science and Pure Mathematics) and a B.E. (Electrical Engineering) from the University of Sydney. In further studies he gained an MBA (International Finance and Business) from Oklahoma City University, USA in 1991, and a PhD in Electrical and Information Engineering from the University of Sydney in 2017. He joined IEEE in 1987 and is now a Senior member.

In Oct 1991, Bruce joined IEEE NSW Section as committee member. Not long after joining the committee, Bruce became involved in membership development and later took on the role of Membership Development Chair. From 1,472 active members in 1991, membership has grown to over 2,800 active members. Bruce is a member of IEEE Computer Society and IEEE System, Man & Cybernetics Society. He is very active in the Section and has participated in the organising committee of conferences held locally and overseas.

Bruce had received the following awards and recognition :

- The IEEE Third Millennium Medal

- In recognition and appreciation of valued services and outstanding contributions:
 - NSW Section 25 Years Meritorious Services Award (15 Aug 1997)
 - NSW Section 30 Years Meritorious Services Award (16 Aug 2002)
 - 2002 R10 Outstanding Volunteer Award
 - 2017 Certificate of Recognition for outstanding performance in both member recruitment and retention for the New South Wales Section during the membership year.
 - 2018 Certificate of Recognition for outstanding achievement in member retention for the New South Wales Section during the membership year.
 - 2021 Certificate of Recognition for outstanding achievement in member recruitment for the New South Wales Section during the membership year.

3.2.14 Eddie Fong



Eddie Kui Pun Fong is the Senior Account Manager at InterCorp Technology. He is responsible for their telecommunications/IT businesses expansion and reach out to APAC.

After graduating from the University College of Swansea as an Electronics and Electrical Engineer, he began his career in the telecommunications industry in 1982 with SingTel. In this role, he deployed and operated Store-and-Forward Switch, Packet Switch, Circuit Switch, Microwave Links and INMARSAT-C networks. He was in the INMARSAT-C, INMASAT-P(ICO)/Iridium mobile satellite design teams. He later worked with Motorola Inc., M1, as a Senior Manager and from 2003 to 2018, he was the Commercial Services Manager with Optus.

He is a SMIEEE (in 2008), MIET (in 1981), CEng (in 2001), and member of The Association of Business Executives (London) in 1989. From 1996, he played an active role in IET Singapore and Engineers Australia (Singapore) executive committees. In 2001, he was Committee Secretary for EA (Singapore).

Since 2004, he has played an active role in IEEE NSW Section executive committee. He was the Editor of Circuit Newsletter (2004-7), the Joint Lecture Program Chair (2008-10), and Section Chair (2011-13). He was

appointed to the IEEE Consumer Electronics Society, Standards Chair in 2014 and the IEEE MGA Standards Association Liaison in 2015. He has attended the IEEE Sections Congress, Region 10 Executives Meet, MGA Board and Standards Association Board. He successfully brought IEEE Teacher-In-Service Program (TISP) to Australia in 2013 and the IEEE Sections Congress to Sydney in 2017. He organised Region 10 TENSYP 2013 and 2018 that were hosted in Sydney.

3.2.15 Prof. Karu Esselle



Distinguished Professor Karu P. Esselle (FIEEE, FIE Aust, FRSN) has contributed to IEEE and NSW Section for over 25 years. During his leadership as the Chair of IEEE NSW Section (2016-17), he reactivated WIE and Young Professional activities and established new student branches. In addition, the Section was awarded both Gold and Silver Medals from IEEE Region 10 for excellence. For his IEEE leadership, he was awarded 2021 Outstanding Volunteer Award from IEEE Region 10 and the same award from IEEE NSW in 2020.

Karu formed the multi-award-winning Macquarie University IEEE Student Branch and provided leadership as counsellor. This branch was awarded the 1st or 2nd Prize for the Outstanding Student Branch in Australia a few times and also won the 2nd Prize for Exemplary Student Branch in Region 10 in 2011. He has been Chair of the IEEE NSW Antennas & Propagation (AP)/ Microwave Theory & Techniques (MTT) Chapter on several occasions and an IEEE Distinguished Lecturer for the Antennas & Propagation Society. He gave 23 distinguished lectures in both developing and developed countries and 12 of them were in Region 10.

Karu was selected by IEEE Antennas & Propagation Society to chair the Distinguished Lecturer (DL) Program of the Society in 2018-20. He led a number of major changes including overhaul of the travel funding policy so that all IEEE Chapters and Student Branch Chapters anywhere in the world have equal access to all distinguished lecturers.

Karu has provided leadership to many conferences and workshops and given plenary/keynote speeches (e.g. ICECOM, TENSYP). Karu served or is serving on several Society committees including IEEE AP-S Administrative committee 2015-20. He has also served on three IEEE

journals as a Senior Editor or Associate Editor (Transactions on Antennas and Propagation, Access and Antennas & Propagation Magazine), and MTT Society Technical Committee-28.

3.2.16 Antony Zaglas



Antony (Tony) Zaglas graduated with a degree in Electrical Engineering from The New South Wales Institute of Technology in 1979. He has worked as a Consulting Engineer (Power and Industry) and has been an IEEE Member since 1984. He is also a Member of the Electric Energy Society of Australia (EESA). He is the current IEEE NSW Section Secretary and Awards and Recognition Chair, Life Members Vice Chair and Assistant CIRCUIT Editor.

He has previously served as Section Vice Chair (2013), Section Secretary (2007-8, 2011-12), General Committee Member (2009), Assistant Secretary (2010), Awards and Recognition Chair (2011-22), CIRCUIT Editor (2nd half 2012), NSW PES Secretary (2001-5), PES Chair (2006-7), PES Secretary/Treasurer (2008), PES Vice Chair (2009-10), PES Nominations Committee Member (2011-22). He has also served as the Section Nominations Committee Secretary since 2015. He has also represented IEEE on the Engineering Week Committee (2010-15).

Tony Zaglas has participated in several Conferences including TENCON Spring 2013, TENSYPMP 2018 and ICC 2014. He has represented the NSW Section at UNSW IToF and Industry Night and also Sydney University Student Engineering Conferences and Conversazione.

3.2.17 David Burger



David Burger was a member of the NSW Section Committee from 2002 to 2010, holding the offices of Treasurer, Vice Chair and Chair of the NSW Section.

As a Past Chair, serving as Chair of the Section History Committee, he concentrated on establishing the foundation of the historic records of the Section from which material has been used in this publication. His

continued interest in the history within the IEEE encouraged him to become a member of the IEEE History Committee, where he filled the office of Chair of that Committee in 2014/5.

He has been an IEEE member for over 40 years, and a member of the Communications Society for 31 years. He is a Fellow of Engineers Australia, and a SMIEEE. He obtained a bachelor's degree in electrical engineering and a Diploma of Project Management. David has a keen interest in amateur radio, with licences in Australia, USA, and New Zealand.

3.2.18 Dr Stefan Mozar



Stefan Mozar is an IEEE Life Fellow, and a Fellow of Engineers Australia. He studied engineering at the University of NSW (BE, M.Eng.Sc.). His PhD work was based on industrial research and research at Okayama University, Japan. He obtained his MBA from UTS. He earned his Grad Dip in Technical Education from Sydney Teachers College (now UTS).

Most of his career was spent in industrial R&D laboratories. He held executive engineering roles. He worked for companies such as Philips, Grundig, Standard Telephones & Cables (now Alcatel), and AWA. He was an Adjunct Professor at Guangdong University of Technology, Guangzhou, China. He has taught for Australian, British, and Asian Universities. His work experience includes working in Australia, Asia, Europe, and North America.

His experience includes being a key member of technology start-up companies.

He served the IEEE in three Sections: Singapore, NSW, and Hong Kong. He was elected Society President of the Consumer Technology Society (CTSoc), the Product Safety Engineering Society (PSES), and he was elected chair of the Life Sciences Technical Community (LSTC). He was chair of the Australia Council and served in several different roles on the Region 10 committee. For the Sydney Sections Congress, he was the Local Arrangements Chair. He served in various positions at the Educational Activities Board (EAB), the Technical Activities Board (TAB) and the Meetings, Conferences and Events Committee (MCE). He started and supported seven conferences in Region-10, four conferences outside of Region-10.

His contributions have been recognised with many awards from the IEEE, Engineers Australia, and from Industry. His work has resulted in patents, published papers, and books. Recently in 2022, he received the MGA Leadership Award 'For leadership in establishing a consumer electronics chapter based community within IEEE'.

3.3 Development of NSW Section Chapters

Very soon after the formation of the Section, Chapters of IEEE Societies were created. The current list of Chapters is given in Appendix C. The first Chapter was the Computer Chapter and this was followed soon after by PES and the Communications Chapters. By the end of the millennium there were about eight Chapters. In later years, the number of Chapters have increased in-line with the diversification of interests and IEEE Societies. There are currently 21 Chapters of the NSW Section and one Council.

3.4 Members' Memories and Recollections

3.4.1 Distribution of CIRCUIT

In the early Days of the Section, there was always 'fun and games' with distribution of the newsletter "CIRCUIT."

The Australian Section sent out a newsletter to members virtually from the beginning. It was originally called IEEE NEWS, but this was later renamed "CIRCUIT." In this digital age the NSW Section Committee produces a digital version of "CIRCUIT" every few months. But in the early days the production of a printed hard copy "CIRCUIT" was a major task and quite a drain on the Section's finances.

To find the money for the printing and mailing out of "CIRCUIT", by what we now call "snail mail", used to be a major task every few months. The Section often had to resort to seeking out advertisers to help with the cost, not an easy job to do. The Section Committee also used to allocate to its Committee members 100 or 200 printed copies of "CIRCUIT", to fold them, address them and deliver them to their local post offices to be mailed out at a newspaper rate. Some Committee members used to "bribe" their children with extra pocket money to do the folding.

But after all that, our members did receive copies of "CIRCUIT" fairly regularly, although our members probably did not appreciate the logistical challenges that of sending out that 1,000 or so "Circuits" presented. It was not until after the success of GLOBECOM 98 that the finances of the Section improved substantially, so that there was no need for the "fun and games" with the circulation of "Circuit" anymore.

Ramutis Zakarevicius

3.4.2 Section Meetings

My memories of Section meetings are fond and varied. They come from my time on the Section Committee, over a decade from 1993 to 2003/4. At that time, the meetings were held monthly on a Monday evening at Institute of TAFE North Sydney, on the Pacific Highway in Gore Hill near the old Channel 2 TV studios.

The common thing about the meetings of the Section committee that I remember, was that all members worked together in a great spirit of cooperation, for the benefit of the Section and IEEE. But it is fair to say, that often the meetings were simply boring, where standard matters would be raked over. But when some new initiative such as a conference or workshop were proposed, such meetings were exciting. In the mid-1990s, finances were very tight, but after the success of Globecom 98 and APMC in Sydney in 2000, the Section had accumulated sufficient funds to support many new initiatives such as GOLD and later UNITE.

I remember one Chair of the Section, who was so meticulous in going over things, he would prepare notes beforehand and would read from them in detail. At one AGM. for example, he spoke for over an hour in giving his Chair's report! At Section Committee meetings, one member could be relied upon to provide some levity and move things along, by supporting motions before they were even introduced, or immediately seconding them. On the other hand, Jim Vasseleu, the father of the Section, was more considered. He participated in most of the meetings I attended. Jim would quietly listen and consider the discussion as it went backwards and forwards and often he would make a comment at the end, often a modification to a motion that made it more watertight and relevant.

Trevor Bird

3.5 Photographic Memories

3.5.1 Australian Region 10 Directors



Fig. 3.5.1: Australian Region 10 Directors.

3.5.2 Memories of Early Days of the Section

Section Officers 1972 – 84

Year	Chair	Vice-Chair	Secretary	Treasurer
1972-73	J.J.Vasseleu	L.J.Clementson	J.Deans	J.Deans
1974-75	L.J.Clementson	-	D.G.Bradshaw	J.J.Vasseleu
1976-78	D.G.Bradshaw	R.A.Zakarevicius	R.Ryan	R.C.Clarke
1979-81	R.A.Zakarevicius	P.I.Somlo	M.Simons	F.S.Shaw
1982-84	M.Simons	F.S.Shaw	A.Rister	R.C.Clarke

Scenes from The 1977 IEEE National Symposium



IEEE President Damon's visit 1981



Committee meetings 1978 & 2003



Comms/SP picnic 1980's



Fig. 3.5.2: Early Days of the NSW Section.

3.5.3 1984 Centenary Medals in NSW Section

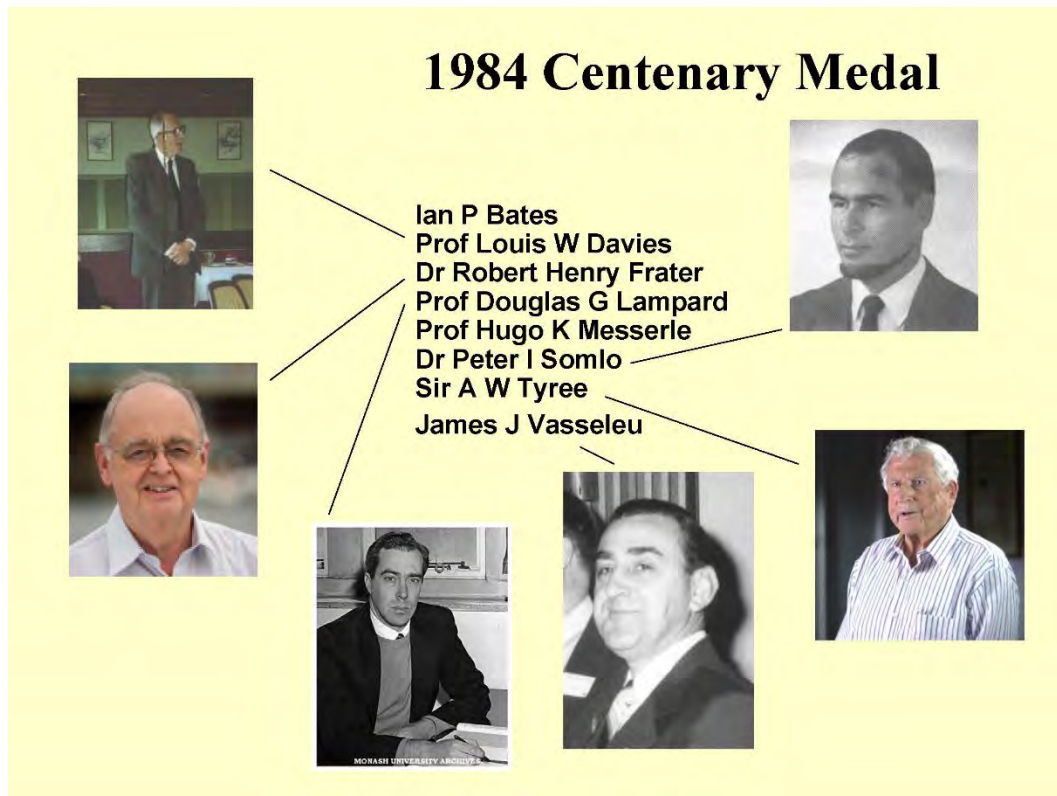


Fig. 3.5.3: NSW Section IEEE Centenary medallists.

3.5.4 IEEE Millennium Medals in NSW Section



Left to right:
Bruce Poon, Dr Vic Morgan,
Dr Trevor Bird, Dr Graeme Gwilliam,
John Robinson, Dr Ramutis Zakarevicius,
Jim Vasseleu, Prof Sam Reisenfeld,
Prof Faz Rahman, Dr Walter Lachs.
Jim Logothetis (absent)



Fig. 3.5.4: NSW Section IEEE millennium medallists and the medal.

3.5.5 Section 30th Anniversary 2002



Fig. 3.5.5: NSW Section 30th Anniversary, and long serving members with certificates presented on the 27th of September 2002.

In welcoming the guests to the celebration, the Chair of the Section, Trevor Bird, said '...The Section has made great progress since 1972. It has organised many significant conferences and workshops and hosted distinguished lecturers and several IEEE Presidents. It now boasts about 2,200 members, 13 of them are Fellows, about 120 are Senior Members and 37 are Life Members. Some of the Life Members are present here this evening. Over the years many people have been resolute servants of the Section. Some of the most long serving members will be honoured a little later this evening with certificates. However, before we commence our main course, I'd like you to charge your glasses for a toast to the New South Wales Section.'

3.5.6 Section 35th Anniversary 2007



Fig. 3.5.6: NSW Section 35th Anniversary celebrants with the Region 10 Director, Janina Mazierska of Australia.

As well as the 30th Anniversary shown in Sec. 3.5.5 and the 35th here, the 40th Anniversary was celebrated at the Radisson Hotel in Sydney in 2012.

3.5.7 Awards



Fig. 3.5.7: NSW Section members receiving IEEE Awards including IEEE Millennium Awards, Outstanding Region 10 Volunteer Awards, Student Awards, and other recognitions.

3.5.8 Events at GLOBECOM 1998

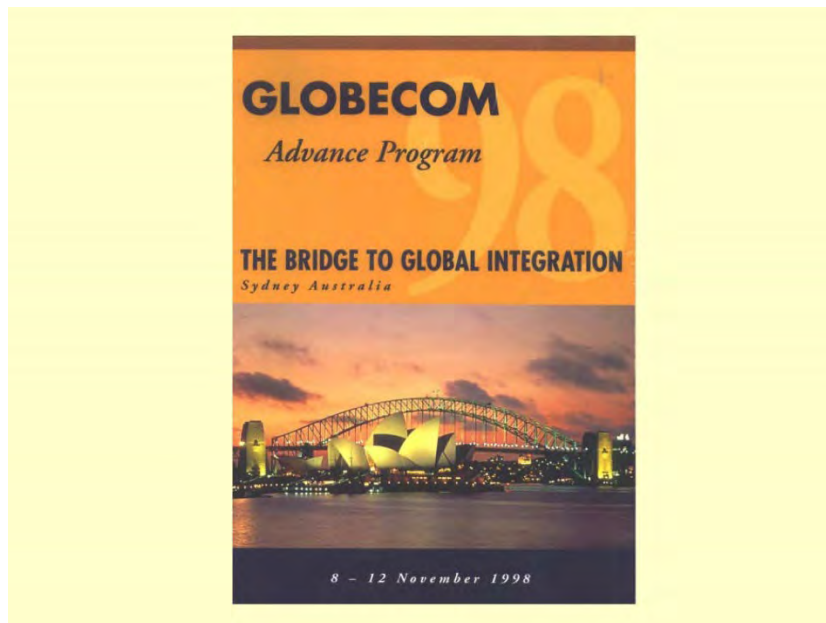


Fig. 3.5.8: GLOBECOM 98 program, attendees and NSW Section booth in Sydney 8 to 12 November 1998.

3.5.9 IEEE Milestone – First Moon Landing Parkes Radiotelescope Contribution



Fig. 3.5.9: Memories from the IEEE Milestone dedication and celebration at Parkes, NSW in October 2019.

3.5.10 Section and Region 10 Meetings



Fig. 3.5.10.1: Section and Region 10 meetings attended by NSW members.



Fig. 3.5.10.2: Section dinner hosted by Business Events Sydney in 2017.



Fig. 3.5.10.4: NSW Section AGM 2019.



Fig. 3.5.10.4: NSW Section dinner after AGM 2019.



Fig. 3.5.10.5: Delegates at the Region 10 Sections Congress in Chiang Mai, Thailand 2006.

3.5.11 Section Members Past and Present



Fig. 3.5.11: IEEE members at events hosted by the NSW Section over 50 years., including Jim Vasseleu, Walter Lachs, Sam Reisenfeld, Eddie Fong, David Tien, Olly D'Souza, Stefan Mozar, Bruce Howard, Trevor Bird, Bruce Poon, Andrew Parfitt, Neville Thiele, John Robinson, Harvey Holmes, Eric Khu, Ramutis Zakarevicius.

4. The Future

We celebrate our 50th Anniversary at this time, but what of the future? Even in the next ten years we shall experience major changes, particularly related to remote learning and collaboration, as was initiated during the Covid pandemic over the past three years. The IEEE and the NSW Section will have to respond to these changes to retain members. We have seen new Societies formed, others have become more relevant, and others have declined as technologies and their impact have changed. The same is envisaged over the next ten years and beyond. For example, we may even see some original Societies close or merge with others during this transformation. Multidisciplinary activities may become the catch-phrase in IEEE. In the next generation of the internet, we may expect to see greater interaction on-line through real-life experience events, conferences, and meetings. Individual personalities will be projected into this experience where today avatars may only do that. There will, of course, still be face-to-face meetings and conferences, but the next generation internet may make it easier to attend both local and international events. IEEE will no doubt keep pace with these developments and will respond to them. Locally, we will need to do the same and to do this the Section may need to change the way it is organised.

All this is very uncertain of course. The past is behind us, and the first 50 years has been a story of success for the NSW Section. We look to continuing this success into the future. At this time, let us make a toast to the NSW Section for its many successes in the past and to the future!

Trevor Bird








Appendices:

Appendix A - Region 10 Outstanding Volunteer Awards

- 1998: Jim Logothetis
- 2001: Andrew Parfitt
- 2001: Bruce Poon
- 2009: Walter Lachs
- 2010: John L. Robinson
- 2011: Ramutis Zakarevicius
- 2012: Trevor S. Bird
- 2014: Graeme B Gwilliam
- 2015: Stefan Mozar
- 2016: Eddie Kui Pun Fong
- 2018: David Tien
- 2019: Subhas Chandra Mukhopadhyay
- 2021: Karu P. Esselle

Appendix B – Past NSW Section Chairs

	Jim Vasseleu	Sept 1972 – 73 1985 - 87
	Len Clementson	1974 - 75
	Dennis Bradshaw	1976 - 78
	Dr Ramutis Zakarevicius	1979 - 81
	Max Simons	1982 - 84
	Dr Walter Lachs	1988 – 90 1995
	Jim Logothetis	1991 – 94 1996 - 98

	John Robinson	1999 - 2000
	Dr Trevor Bird	2001 - 2
	Dr Andrew Parfitt	2003 - 4
	Dr Graeme Gwilliam	2005 - 6
	David Burger	2007 - 8
	Dr David Tien	2009 – 10 2014 - 15
	Eddie Kui Pun Fong	2011 - 13

	<p>Dr Karu Esselle</p>	<p>2016 - 17</p>
	<p>Dr Sasha Nikolic</p>	<p>2018 - 19</p>
	<p>Colin Elston</p>	<p>2020 - 22</p>

More details of the Chairs and the Section Committees during each term can be found on the NSW Section website at <https://site.ieee.org/nsw/> .

Appendix C - Chapters of NSW Section

Joint Antennas & Propagation / Microwave Theory and Techniques

The IEEE Antennas & Propagation (AP) Society specialises in electromagnetic theory and waves, radiation and its interaction with media, antenna analysis, design, development, measurement, and testing covering frequencies from near DC to the optical band. The Microwave Theory and Techniques (MTT) Society promotes the advancement of microwave theory and its applications, including RF, microwave, millimeter-wave, and terahertz technologies.

The petition to IEEE for creation of the Joint Chapter was dated 18 August 1988. There were 16 signatures to this petition. Approval of the formation of the Chapter was given on 2 February 1989. The inaugural organising committee of the joint chapter consisted of Dr Bruce Thomas (CSIRO, Chair), Dr Peter Somlo (CSIRO, Vice Chair), Dr Bevan Jones (Interscan, Secretary/Treasurer) and Dr Mark Harwood (AUSSAT now Optus).

A number of talks were arranged even in the first year. The first speaker was Prof. P.J.B. Clarricoats in February 1987, and another was given by Peter Staecker (2013 IEEE President) in October 1989. Normally four or more talks are now arranged annually. Later Chapter Chairs have included Dr Trevor Bird, Dr Karu Esselle, Carol Wilson, and Dr Graham Town. In 2022 the Chair is Dr Syed Muzahir Abbas, who was also Chair in 2020 - 2021.

Joint Communications / Signal Processing / Ocean Engineering

The IEEE Communications Society (ComSoc) promotes the advancement of science, technology and applications in communications and related disciplines. The Signal Processing Society is the world's premier professional society for signal processing, which is the enabling technology for the generation, transformation, and interpretation of information. The third Society, Ocean Engineering, is devoted to research, development, and operations in all aspects of science, engineering, and technology pertaining to all bodies of water.

The petition to form an NSW Communications Chapter was received by the IEEE on 1 July 1986. Signal Processing was incorporated shortly afterwards in 1988 and Ocean Engineering joined the joint Chapter in 2008.

The Founding Chair of the Chapter was Dr Ramutis Zakarevicius and Secretary/Treasurer was Nerida Perkins. At the first Chapter lecture meeting on 29 August 1986 the guest lecturer was Dr David Falconer.

Later Chairs have included Dr Doug Follett, A/Prof. Sam Reisenfeld, A/Prof. Teresa Buczkowska, Prof. Phillip Ogunbona and Ollie D'Souza.

In 2022 the Chair is Ollencio D'Souza and the past Chair is Kumbesan Sandrasegaran.

Computer

The Computer Chapter was formally created on the 21st of February 1986. The purpose of the Society and the Chapter is "to advance the theory, practice, and application of computer and information processing science and technology" as well as the "professional standing of its members".

The founding Chair was Philip McCrea. The current Chair is Prof. San Murugesan and he has been in the role since 2020.

Computational Intelligence

The Computational Intelligence (CI) Society studies theory, design, application and development of biologically and linguistically motivated computational paradigms. Traditionally the three main pillars of CI have been Neural Networks, Fuzzy Systems and Evolutionary Computation. However, many nature inspired computing paradigms have evolved over time such as during the Covid pandemic.

The Chapter Chair since 2019 has been Prof. Jie Lu.

Joint Chapter on Consumer Technology, Broadcast Technology & Product Safety Engineering

This Joint Chapter represents three IEEE Societies. The Consumer Technology Society (CTSoc) aims to inspire research, development, and deployment of cutting-edge technologies for consumer products for the advancement and benefit of humanity. The Broadcast Technology Society investigates technologies to deliver information & entertainment to audiences worldwide, at home & on the move. Finally, the Product Safety

Engineering Society focuses on the theory, design, development and practical implementation of product safety engineering methodologies and techniques for equipment and devices.

This Joint Chapter (CT/BT/SE) was formed in 2015. The founding Chair was Colin Elston. The 2022 Chair is Dr Stefan Mozar.

Dielectrics and Electrical Insulation

The DEIS Chapter was formed in 2012. The DEI Society's field of interest includes the study and application of dielectrics from the molecular level, through nano-structured materials, to insulation systems in industrial, commercial, and power system equipment, to emerging applications such as those at high power levels and in biological and other small-scale systems. The inaugural Chair was Prof. Trevor Blackburn (t.blackburn@unsw.edu.au). He is also the Chair in 2022.

Education

The Education Society's field of interest is the theory and practice of education and educational technology involved in the delivery of knowledge of all fields within the scope of interest of IEEE. The effective date of formation of this Chapter was 10 May 2007.

The founding Chair was Mark Lee, The current Chapter Chair in 2022 is Paul McMahon.

Electromagnetic Compatibility

The EC Society is dedicated to the development and distribution of information, tools and techniques for reducing electromagnetic interference. John Aitken was the foundation Chair. The current Chair is Dr Saad UI Hasan.

Electron Devices

The IEEE Electron Device Chapter was separately established on 1st January 2020. This Chapter undertakes regional interests in the field of electron and ion based devices, leveraging the resources among academia

and industry by sponsoring and reporting on education, research and semiconductor material/device fabrication. The foundation Chair was Prof. Francesca Iacopi in 2019. The Chair in 2022 is Prof. Bram Hoex.

Engineering in Medicine & Biology

This is a Chapter of the EMB Society (EMBS). Its purpose is to improve and advance technology for better diagnosis and treatment of chronic and acute healthcare maladies. The effective date of this Chapter formation was 29 July 2006. As well as the NSW Chapter there are others in Victoria and Queensland. The Foundation Chair was Carolyn McGregor. The current Chair is Dr Stefan Mozar.

Joint ACT & NSW Chapter on Geoscience & Remote Sensing

The GRS Society collaborates and designs tools to understand our interaction with Earth's ecosystems, to monitor its environments, oceans and ice caps, and to characterise potential risks of humanity.

The founding and present Chapter Chair is Prof. Xiuping Jia (X.JIA@adfa.edu.au).

Industrial Electronics/Industrial Applications/Power Electronics

This is a joint Chapter of the Industrial Electronics (<https://ias.ieee.org/>), Industrial Applications (<http://www.ieee-ies.org/>) and Power Electronics (<https://www.ieee-pels.org>) Societies. The effective date of this Chapter formation was 19 April 1996. The first Chair was Faz Rahman. The Chair from 2019 to the present is Prof. Dylan Lu (Dylan.Lu@uts.edu.au).

Information Theory

The Society focuses on aspects of information including its processing, transmission, storage, usage; and the "foundations of the communication process".

The Chapter is currently inactive.

Instrumentations and Measurement

This Chapter of the IMS Society is dedicated to the development and use of electrical and electronic instruments and equipment to measure, monitor and/or record physical phenomena.

The Chair in 2022 is Dr Dimitrios Georgakopoulos.

Lasers & Electro-Optics Society

The LEOS Chapter was created on 5 August 2005. The inaugural chair was David Moss.

Joint Photonics / Solid-State Circuits / Circuits and Systems

This Chapter covers the IEEE Societies:

- Photonics
- Circuits and Systems
- Solid-State Circuits.

The effective date of this Chapter formation was 19 November 1999. The first Chapter Chair was Neil Weste. Originally the Joint Chapter included the Electron Devices Society (EDS) but a separate EDS Chapter was established on 1st January 2020. In 2020-22, the Chair of this Joint Chapter was Saul S. Carroll.

Power & Energy

The initial Power Engineering Chapter was created in 4th of April 1986. The first Chapter Chair was Dr Walter Lachs. It has been a strength in the Section since then. An example of some the work of this Chapter is described in Sec. 3.1.5.

The Chair in 2022 is Prof. Jahangir Hossain.

Sensors Council

The recognition that several Societies are engaged in sensors resulted in the approval for the formation of the Sensor Council in 2000. The NSW Section Chapter of the Council was approved on 11 September 2019.

The 2022 Chair of the NSW Section Council is Prof. Subhas Mukhopadhyay.

Social Implications of Technology

This Society covers social implications of technology based on five pillars: unsuitable development, ethics and human values, universal access to technology, societal impacts, and protecting the planet. The Chapter includes representatives from Victoria and Queensland. The Chair in 2021 was 2021 Kieran Tranter.

Robotics and Automation

The NSW Chapter of the Robotics and Automation Society (RAS) was formed in 2019.

The founding and current Chair of the Chapter is Dr Budhaditya Majumdar.

Systems, Man and Cybernetics

The SMC Society promotes the theory, practice, and interdisciplinary aspects of systems science and engineering, human-machine systems, and cybernetics. The first Chair was Prof. Longbing Cao. The Chair in 2022 is Prof. Dacheng Tao.

Vehicular Technology

This Chapter advances the theory and practice in electrical technology relating to land transportation, railroad mass transit, mobile communications, vehicular electrotechnology equipment and systems, and airborne and maritime mobile services.

The Chapter was formed in 2015. The founding Chair was Prof. Ren Ping Liu while the current Chair is Wei Ni.

Appendix D – Affinity Groups

Life Members

This Group was formed in 2000. The first Chair was Jim Vasseleu.

The Life Member Chair in 2022 is Dr Bill Sloman.

A Group gathering at Woy Woy Fisherman's Wharf on Wednesday 17 March 2021 is shown below.



A Life Member's Lunch in 2021 attended by (from left to right) Ken Barber, Tony Zaglas, Graeme Gwilliam, Ramutis Zakarevicius, Joe Venuti, and Colin Elston. Mrs Ramona Zakarevicius was the photographer.

GOLD (Graduates of the last decade)

The GOLD Affinity Group had an initial social meeting on 1 November 2001. The effective date of formation was 16 April, 2002. The first Chair was Filita Barker.

Young Professionals

This group was originally GOLD. The Chair in 2022 is Dr Hijab Zahra.

Women in Engineering

This group was formed in 2008. The founding Chair was Dr Sukim Chin. The Chair in 2022 is Dr Naila Mukhtar.

Student Branches

There are currently 8 Student Branches in NSW. These are:

- UNSW Student Branch
- Sydney University Student Branch
- University of Technology Sydney Student Branch
- Macquarie University Student Branch
- Wollongong University Student Branch
- Newcastle University Student Branch
- University of Western Sydney Student Branch
- Charles Sturt University Student Branch.

NSW UNITE



Dr Sasha Nikolic with attendees at a UNITE meeting on 12th August 2019.

The 2018 NSW Section strategic plan sought a way to bring all its members (from student to life member) together. The intention was to take advantage of the Section's surpluses built up over 30 years to provide quality benefits in a manner that would reach the greatest number of members possible. As a result IEEE NSW UNITE 2018 was born, initiated as a networking cocktail dinner, which included exhibits from the sections chapters and affinity groups as well as from industry. The event was held at the Mercure Sydney on the 10 August 2018 and was chaired by Dr Sasha Nikolic, also IEEE NSW Section Chair at the time. UNITE 2019 was expanded to include knowledge sharing sessions, panel sessions, which brought together different universities and industry. UNITE 2019 was held 9 August 2019. Due to Covid 19 travel restrictions, UNITE was cancelled in 2020 and 2021. UNITE 2022 was resuscitated as the post Covid world slowly returned to normal. It was held on the 8th of July 2022 and increased the number of knowledge sharing sessions further.

Appendix E – Fellows and Life Fellows in the NSW Section

Fellows

Albert	Y.	Zomaya	Zhaoyang	Dong
Chin Teng	Lin		Jinhong	Yuan
Simon	B.	Poole	Subhas	C. Mukhopadhyay
Abbas	Jamalipour		Stephen	V. Hanly
Athman	Bouguettaya		Marcela	M. Bilek
Nigel	Lovell		Andre	Van Schaik
Minyue	Fu		Erik	Meijering
Karu	P.	Esselle	Wei	Zhang
Richard	Middleton		Darryl	N. Veitch
Hugh F.	Durrant-Whyte		Yonghui	Li
Iain B.	Collings		Willy	Susilo
Yingjie	Guo		Jie	Lu
Teng-Joon	Lim		Benjamin	J. Eggleton
Ian J.	Oppermann		Dong	Xu
David S	Taubman		Dacheng	Tao
Wei X.	Zheng		Wing Kwan	Ng
Alexander	Zelinsky		Shujun	Zhang
Eduardo	M.	Nebot	Xuemin	Lin
Gernot	Heiser		Alberto	P. Avolio
Brett M.	Ninness			

Life Fellows

Dean	J.	Patterson	Richard	P.	Brent
Richard		Zurawski	Graham	C.	Goodwin
Graeme	L.	James	Graham	R.	Hellestrand
Martin	A.	Green	Robert	A.	Minasian
Willy		Zwaenepoel	King	N.	Ngan
Victor		Solo	Muhammed	F.	Rahman
Branka	S.	Vucetic	David	J.	Skellern
Israel		Korn	Barry	D.	Inglis
Trevor	S.	Bird	Stefan	G.	Mozar
D	J.	Hill	Dagan		Feng
Anthony	K.	Milne	Branko	G.	Celler

The Authors

Trevor S. Bird



Trevor S. Bird LFIEE, FTSE, Hon. FIE Aust, FRSN is Principal of consultancy firm Antengenuity and a Distinguished Visiting Professor at the University of Technology, Sydney. He graduated with a PhD in engineering from the University of Melbourne in 1977. He worked in the UK before joining James Cook University in 1978 and CSIRO in 1983. He served as Chief Scientist of the CSIRO ICT Centre from 2004 to 2011. He became a CSIRO Fellow in 2007. Prof. Bird has received three CSIRO Medals, a Centenary Medal, awarded the 2003 Sydney Division Eng. Aust. Professional Engineer of the Year, and its M.A. Sargeant Medal in 2012. He was NSW Section Chair in 2001-2, Editor-in-Chief of the IEEE Transactions on Antennas & Propagation from 2004-2010, and President of the Antennas and Propagation Society in 2013.

Colin Elston



Colin is currently Chair of the IEEE NSW Section. He obtained a Master of Engineering Science from the University of Sydney, after gaining a BSc & BE. Initially, he worked in radio astronomy, medical instrumentation and auto testing, before working with Aussat/Optus from 1981 to 2001. He oversaw the system design and frequency registration with ITU-IFRB of the Aussat A series satellites, then the introduction of the technical aspects of mobile communications and L-band on the B series satellites. He led the transition to digital in the FTA broadcast industry - Optus already had digital TV services (HACBSS) on the satellites. Colin was at the Special Broadcasting Service (SBS) Australia from 2006 to 2014 where he oversaw the transition to digital of the transmission sites and monitored the transmission contracts. He lectured in antennas and propagation at Sydney

University in 2014. He is a member of a number of Standards Australia committees as well as ITU-R Study Groups. His IEEE activities with the NSW Section, have included being assistant secretary, forming of a Joint Broadcast Technology, Consumer Electronics and Product Safety Engineering Chapter, and Revitalising the Life Members Affinity group. He is also the Chair of Professional Activities and JILS (Joint Institutions Lecture Series). He is currently Chair of the NSW Section.

Karu Esselle



Karu Esselle, FIEEE, FRSN, FIEAust, is the Distinguished Professor in Electromagnetic & Antenna Engineering at UTS, and a Director of Innovations for Humanity. He graduated with PhD and MASc from University of Ottawa, Canada, and BSc Hons I from University of Moratuwa, Sri Lanka. His many IEEE positions in Australia and overseas include Chair, NSW Section; Chair, NSW AP/MTT Joint Chapter & Chair, Distinguished Lecturer Program, IEEE Antennas & Propagation Society. His recent awards include Outstanding Volunteer Award from IEEE Region 10 (2022), Outstanding Volunteer Award from IEEE NSW (2021), both Excellence Award & Academic of the Year Award at Australian Space Awards (2022) and both Excellence Award & Academic of the Year Award at Australian Defence Industry Awards (2021).

Eddie Fong



Eddie Fong graduated from the University College of Swansea in Electronics and Electrical Engineering. He commenced his career in the telecommunications industry in 1982 with SingTel. He later worked with Motorola Inc., M1 as a Senior Manager and from 2003 to

2018, he was the Commercial Services Manager with Optus.

He is a SMIEEE, MIET, CEng, MABE. From 1996, he played an active role in IET Singapore and Engineer Australia (Singapore) executive committees. He was Section Chair in 2011 to 2013. He was part of the Committee that planned the IEEE Milestone event in 2019.

Graeme Gwilliam



Graeme Gwilliam had a career in engineering Consulting/ Project Management before moving into teaching electrical engineering in 1975. He later gained a EdD (Doctor of Education). He was IEEE NSW Section Chair in 2004-6.

Ramutis Zakarevičius



LSMIEEE, is currently Chair of the NSW Section History Committee. After completing a PhD at the University of Sydney, he worked at the University of NSW for 32 years, retiring as a Senior Lecturer in 1998. A specialist in communications and signal processing, co-author of the textbook "Microwave engineering using microstrip circuits", which has been used in many universities around the world and is still widely cited. He has served on IEEE Australian/NSW Section Committee since 1974, Australian Section Chair 1979-81, Founding Chair of the NSW Comms/SP Chapter 1986-88. He has been recognised as "Member 1st 50 Years" of IEEE, having joined the IEEE before its formation from its predecessors IRE and AIEE.

Acknowledgements

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Tony Zaglas, Robert Colburn, Bill Sloman, Bruce Poon, Mark O'Malley, the IEEE History Committee, Kristian Nicholls (GM) and Darwin Ow (Head of Industry) of BESydney for their continuous warm support of the IEEE NSW Section, members past and present for photographs, and CSIRO for photographs of the IEEE Milestone.

Institutional Listings



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