IEEE
Queensland Section
Newsletter

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Newsletter editor: Mike Robinson (blackmagic@computer.org)

In this issue:

Newsletter editor's report

MIKE ROBINSON
blackmagic@computer.org

Hello, and welcome to the latest edition of IEEE Queensland Section's newsletter.

The newsletter lacks two items:
- Photos from the 2023 Annual Dinner
- The 2024 Section office holders

The photos from the Annual Dinner are in DNG format, which I haven't encountered previously. Each of them takes up 50 or 60 megabytes, which is much too large for the newsletter.

Normally I use GIMP to crop photos and then reduce their footprint using online software. DNG format photos will require special software and a new learning curve.

There is a new set of office holders in 2024, and I don't have e-mail addresses for all of them.

I will reissue the April newsletter later in the week with the missing elements included.

At the end of the newsletter you will find the IEEE Code of Ethics. The Queensland Section does not have ByLaws, so the Code of Ethics is the standard that should be observed.

In conclusion I would like to thank everyone who contributed to this newsletter.

I hope future editions will have more contributors, especially from the Section's Excom.

Enjoy!!

Life Members Affinity Group

JOHN GOUGH
john@atwell-gough.com

Committee:
Chair: John Gough
Vice-chair: Mike Robinson

The Queensland Section's Life Members Affinity Group (LMAG) held its first meeting for 2024 on March 13th, when seven members of the LMAG visited the Queensland Telecommunications Museum.

The museum is housed in a former telephone exchange at Clayfield, a northern suburb of Brisbane, and is divided into three sections. Each section is dedicated to a different aspect of telecommunications, both ancient and relatively recent.

The seven members of the LMAG who attended the meeting are: Malcolm Barrett, Neil Bergmann, Rob Eckersley, Peter Baker, John Edwards, John Gough and Mike Robinson. My thanks to Neil Bergman for his assitance in organising the visit.

Background

A step back in history is appropriate at this time.

Before Federation in January 1901, Australia was a collection of six self-governing colonies. It was vital for the colonies to have convenient and rapid access to the British government in London, in an era when ships took months to sail from England to Sydney. The first powered aircraft did not fly until 1903.

LMAG members at the museum

On arrival we were introduced to our tour guide, Anthony Mitchell. Anthony is a former post office technician who uses his skills to keep some of the equipment at the museum in operation.

Several important technological developments in the mid-19th century aided telecommunications expansion in Australia. The first was electricity, the second was Morse code, and the third was the telephone.

An early version of Morse code was invented by Samuel Morse in America during the 1830s. In 1851 the code was expanded so that European countries could use it.

Numbers and letters of the alphabet are represented by electrical pulses which are sent over a telegraph line by an encoding device. The pulses can also be transmitted by wireless.

In 1876 Alexander Graham Bell was issued with the first patent for a telepnone. His invention would quickly spread around the world.

Section 1

This is the largest section of the museum. It is home to some of the oldest telecommunications equipment ever installed in Queensland.

The section houses rows of cabinets containing obsolete communications equipment. The equipment was manufactured in Australia by the Siemens company of Germany.

Telephones of various vintages are scattered throughout the section. They show the evolution of the phone from Bell's original basic model to the rotary dial phones of the 1960s

19th century posters on the walls proclaim the advantages of fast communications, and there are several working teletype machines on display. Our guide, Anthony, demonstrated how the teletypes work, sending messages between two teletypes.

The messages are encoded in Morse code on paper tape by the sending teletype, and printed out on the receiving teletype. Anthony informed us that paper tape is readily available, but he has to re-ink the ribbons in the teletypes frequently.

Another device that Anthony demonstrated was a vacuum tube delivery system. These were used in banks and department stores for sending messages

In 1861 the first telegraph line in Queensland was opened, between Brisbane and Ipswitch.

In 1878 the first telephone call in Queensland was made between Brisbane and Ipswitch.

The building blocks for telecommunications in Queensland were now in place and operational.

and cash from one area to another, long before lifts became common in buildings.

A metal poster on a wall commemorated the completion of the telegraph line between Adelaide and Darwin in August 1872. The line linked Australia electronically to the rest of the world - via Java - for the first time.

A framed letter lying on a table was hand-written by Alexander Graham Bell, who visited Brisbane in 1910 and stayed at Lennons Hotel. He was here for the commissioning of a telephone exchange at the General Post Office.

Device for sending telegrams between post offices

Section 2

This section is a mini telephone exchange.

It contains various 20th-century telephone types, including wall-mounted pay phones, and the equipment to operate them.

Our guide Anthony made several phone calls to demonstrate the system in operation.

The section also contains several non-working switchboards used by all Australian businesses until the late 1960s.The switchboards were known as private branch exchanges (PBX).

A business would lease several rotary telephone lines from the Postmaster General's department. The telephone lines would feed into a PBX sited within the business.

Incoming calls were answered by one or more switchboard operators. The operator would ask the caller for information about the call, and would then connect the caller to the appropriate department within the business. The connection was made by physically plugging the incoming phone line into a line inside the business via the PBX.

Typical PBX

Section 3

This section is devoted to two uniquely Australian operations: the Royal Flying Doctor Service and the School of the Air.

The Royal Flying Doctor Service (RFDS) was formed in 1928 by Reverend John Flynn to provide an air ambulance service to people living in remote and rural parts of Australia.

The School of the Air began operations in 1958, broadcasting from the RFDS station in Alice Springs. Like the RFDS, its purpose was to bring primary and secondary education to children in remote and rural Australia. The School of the Air operates in all states except Tasmania.

The electrical apparatus that links the RFDS and the School of the Air is the pedal radio, invented in 1929 by Australian Alfred Traeger.

Alf Traeger operating a pedal radio in 1929

Our guide Anthony enthusiastically demonstrated the section's pedal radio, which was contained in a large black leather case that was battered and scratched, evidence of its vintage.

He related the story of the injured man who died while awaiting medical attention at a remote cattle

station in Western Australia in 1917, which led to the formation of the RDFS.

Finally Anthony showed us a facsimile of a $20 note that celebrated Reverend John Flynn and the Royal Flying Doctor Service. (See photo below.)

Summary

Our visit to the Queensland Telecommunications Museum was enjoyable and informative.

It would be an ideal activity for an IEEE student branch. Please visit the museum's web page for details of opening days and times.

An interesting account of the Brisbane Telephone Exchange in 1878 is available here.

Candle stick telephone (from 1920s and 30s)

Eta Kappa Nu Society

YUNDA XU
yunda.xu@uq.net.au

Committee:
Chair: Yunda Xu
Vice-chair: Grace Margaretha
Secretary: Zachary Grice
Treasurer: Linfeng Liu

The recent Net Zero event held at the University of Queensland by IEEE HKN Nu Kappa chapter in collaboration with IEEE UQ student branch marked a significant milestone in the ongoing conversation surrounding climate change and sustainability. With an impressive turnout of 70 attendees, alongside 128 registrations, the event demonstrated a groundswell of interest and dedication towards addressing pressing environmental concerns.

Attendees were engaged in a diverse array of activities beyond traditional panel discussions, aiming to foster dialogue, collaboration, and actionable insights. Interactive sessions provided a platform for robust discussions, allowing participants to exchange perspectives and gain deeper insights into the complexities of climate action. These sessions served as a catalyst for thought-provoking conversations, where attendees explored key challenges and opportunities in transitioning towards a sustainable future.

Moreover, networking opportunities were abundant throughout the event, facilitating connections between attendees, experts, and industry leaders. These interactions encouraged the sharing of ideas and experiences, fostering meaningful collaborations and partnerships.

The relaxed atmosphere, coupled with delicious refreshments, further enhanced the spirit of camaraderie and collaboration among participants.

The panel discussion, featuring esteemed experts Dr. Saphira Rekker, Mr. Joel Bulow, and Professor Simon Smart, was a highlight of the event. Each panellist brought unique insights and perspectives to the discussion, enriching the dialogue on climate action and sustainability.

Dr. Saphira Rekker, a Senior Lecturer specializing in sustainable finance, emphasized the critical importance of regulatory frameworks in driving green initiatives and ensuring compliance with global climate goals. She highlighted the need for continuous tracking of emissions by companies and underscored the significance of corporate accountability and transparency.

Mr. Joel Bulow, a Senior Energy Market Consultant from Ernst and Young, discussed the concept of a digital twin of the energy market and legislative initiatives driving renewable energy adoption. He emphasized the importance of collaboration and innovation in facilitating the transition to a sustainable energy future.

Professor Simon Smart, the UQ project lead for Net Zero Australia, provided insights into Queensland's progress towards net zero emissions. He discussed initiatives aimed at transitioning power stations and efforts in training and reskilling the workforce for a sustainable future. Professor Smart highlighted Queensland's potential as a net energy exporter and underscored the challenges and opportunities associated with achieving net zero emissions.

The success of the UQ Net Zero event can be attributed to the collective efforts of attendees, panellists, and supporters alike. Their enthusiasm, passion, and dedication to driving change are a testament to the power of collective action.

Moving forward, participants expressed a shared commitment to continue working collaboratively towards a more sustainable future. In addition to the engaging panel discussions and interactive sessions, the event also provided a platform to promote IEEE membership.

Attendees were encouraged to explore the benefits of IEEE membership, including access to valuable resources, networking opportunities, and professional development programs. This initiative aimed to inspire students and professionals alike to become active members of the IEEE community and contribute to the advancement of technology for the benefit of humanity.

In conclusion, the UQ Net Zero event served as a vital platform for dialogue, collaboration, and action, highlighting the shared commitment to addressing climate change and working towards a greener, more sustainable future. It demonstrated that by utilizing collective expertise, resources, and passion, we can overcome the challenges ahead and pave the way for a brighter tomorrow for generations to come.

Screenshot from Net Zero event
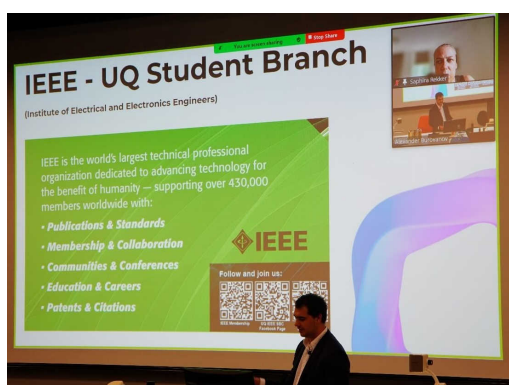
Screenshot from Net Zero event
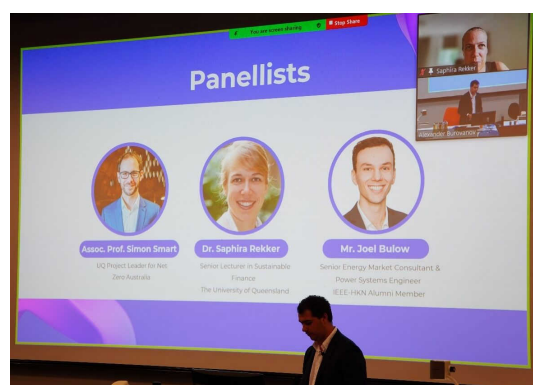
Screenshot from Net Zero event

Professor Tapan Saha, lower right

Refreshments following the event

Group photo of presenters, society members, and students

The audience

Noja Power Factory Tour

NOJA POWER®
Factory Tour

Great opportunity for university students and young engineers to visit Australia's leading low- and medium-voltage manufacturer, NOJA Power.

Learn and see how NOJA Power researches, develops, manufactures, and supplies low- and medium-voltage switchgear.

Date: 1st May 2024
Time: From 11.00 AM to 12.30 PM
Location: Noja Power, 16 Archimedes Pl, Murarrie QLD 4172

- Please note that no transportation is provided by the organizers.

- Only 25 places are available, and they will be filled on a first-come, first-served basis based on the registration form.

- Register using the link in the email or using below QR code

Organised by:

IEEE | **PES** Power & Energy Society® | **IEEE** youngprofessionals

IEEE Queensland Section – Educational Activities | IEEE Queensland Section PES | IEEE Queensland Section YP

IEEE Code of Ethics

APPENDIX II

IEEE

Code of Ethics

We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities we serve, do hereby commit ourselves to the highest ethical and professional conduct and agree:

I. To uphold the highest standards of integrity, responsible behavior, and ethical conduct in professional activities.

1. to hold paramount the safety, health, and welfare of the public, to strive to comply with ethical design and sustainable development practices, to protect the privacy of others, and to disclose promptly factors that might endanger the public or the environment;

2. to improve the understanding by individuals and society of the capabilities and societal implications of conventional and emerging technologies, including intelligent systems;

3. to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;

4. to avoid unlawful conduct in professional activities, and to reject bribery in all its forms;

5. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, to be honest and realistic in stating claims or estimates based on available data, and to credit properly the contributions of others;

6. to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;

II. To treat all persons fairly and with respect, to not engage in harassment or discrimination, and to avoid injuring others.

7. to treat all persons fairly and with respect, and to not engage in discrimination based on characteristics such as race, religion, gender, disability, age, national origin, sexual orientation, gender identity, or gender expression;

8. to not engage in harassment of any kind, including sexual harassment or bullying behavior;

9. to avoid injuring others, their property, reputation, or employment by false or malicious actions, rumors or any other verbal or physical abuses;

III. To strive to ensure this code is upheld by colleagues and co-workers.

10. to support colleagues and co-workers in following this code of ethics, to strive to ensure the code is upheld, and to not retaliate against individuals reporting a violation.

Adopted by the IEEE Board of Directors and incorporating revisions through June 2020.

Bits and Pieces

This is the first newsletter for 2024.

Additional newsletters will be published at the end of June, September, and December.