IEC Young Professionals Workshop Report

(Online) Cairo, Egypt – 22-26 October 2023

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Prepared for Standards New Zealand, the Electricity Engineer's Association and the IEC National Committee of New Zealand

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Introduction

In 2010, 104 years on from its conception, the International Electrotechnical Commission (IEC) recognised the need to ensure continuity in its standards development and conformity assessment activities. The organisation began reaching out to up and coming young experts who were active in a variety of technological sectors through a Young Professionals (YP) Programme. The YP programme now hosts an annual workshop that is held in conjunction with the IEC General Meeting.

The IEC YP workshop brings together upcoming engineers, technicians and managers from all over the world, who aspire to help shape the future of international standardization and conformity assessment in the field of electrotechnology.

The IEC YP Programme for 2023 included 94 delegates from 48 different countries around the world. This workshop and the IEC General Meeting was going to take place in person in Cairo, however due to the conflict in Gaza between Israel and Palestine it was shifted to a virtual only meeting 10 days before the YP workshop began. This resulted in significant reshaping of the proposed programme.

I (Mitch Graham) am grateful to have had the opportunity to represent New Zealand at the IEC's 2023 YP Workshop. Thanks to the IEC National Committee of New Zealand (NCNZ), Standards New Zealand (SNZ), the EEA (Electricity Engineers' Association) and my employer Unison Networks for their support.

Mitch is an electrical engineer within Unison Network's Asset Management team where he leads a team of engineers who determine the asset renewal and maintenance strategies for the electricity distribution network in Hawke's Bay, Taupo, and Rotorua.

The purpose of this report is to:
- document what I did;
- share my experiences and learnings; and
- make recommendations following my experience.

Workshop Summary

Sunday 22 October – Day one
11:00 – 11:30	Welcome message and introduction to IEC
11:30 – 12:30	Ask me anything! (panel session)
13:00 – 14:30	Introduction to the breakout sessions
15:00 – 16:00	Breakout session

Monday 23 October – Day two
11:00 – 12:00	Parallel sessions
12:30 – 14:00	Breakout session
14:30 – 15:30	Parallel sessions

Tuesday 24 October – Day three
11:00 – 12:00	Parallel sessions
12:30 – 13:30	Session with the 2022 IEC YP Leaders
14:00 – 16:00	Breakout session

Wednesday 25 October – Day four
11:00 – 12:00	General Assembly with YP Presentations
12:30 – 13:30	'Live from the Lab' - Young Professionals and TC106 working in 5G, IoT and 6G
14:00 – 15:30	Interactive session on Conformity Assessment and IEC CA Systems

Thursday 26 October – Day five
11:00 – 15:00	IEC Academy Bootcamp 'Standard in a day'
15:00 – 16:00	2023 YP Leaders election and wrap up

Highlights and Takeaways

Highlights

- **Standard in a Day Bootcamp** – This was a simulation of the standardisation process and reaching consensus across countries and industries. This process showed the real world challenges of developing standards including: balancing cost and performance/quality, maintaining fairness for all businesses, competing business interests, and international relations. This was my favourite part of the YP workshop as it gave me a much better appreciation of how standards are formed.
- **Breakout Sessions and the Team Project** – All of the YP attendees were assigned to one of five project groups to develop a presentation on the topic. The topic my group worked on was *Long Term Sustainability (LTS) of the IEC.* The purpose of this topic was to explore how the IEC could ensure a future pipeline of subject matter experts and maintain relevance in the electrotechnical space. I enjoyed actively working with a smaller group of YPs on a tangible task and getting to know a few of the personalities in the room. Seeing different perspectives from different lines of work and different member countries was particularly valuable
- **Live from the Lab 5G Demonstration** – this was an interesting exercise to understand 5G comms and the interesting work that Telstra is working on in the Internet of Things (IoT) and communications space. Some examples were a cycle helmet safety trial and Australian Rules board for visually impaired fans.

Takeaways

- What consensus actually means in an IEC context, which is 'no sustained opposition' to a proposal. With a large multi-dimensional organisation like the IEC, you aren't looking for everyone to agree perfectly, just for people to stop disagreeing is enough. The use of language is important, using "does anyone object?" rather than "does everyone agree"
- A tough balance between specificity to give guidance vs generalism to allow for future innovation
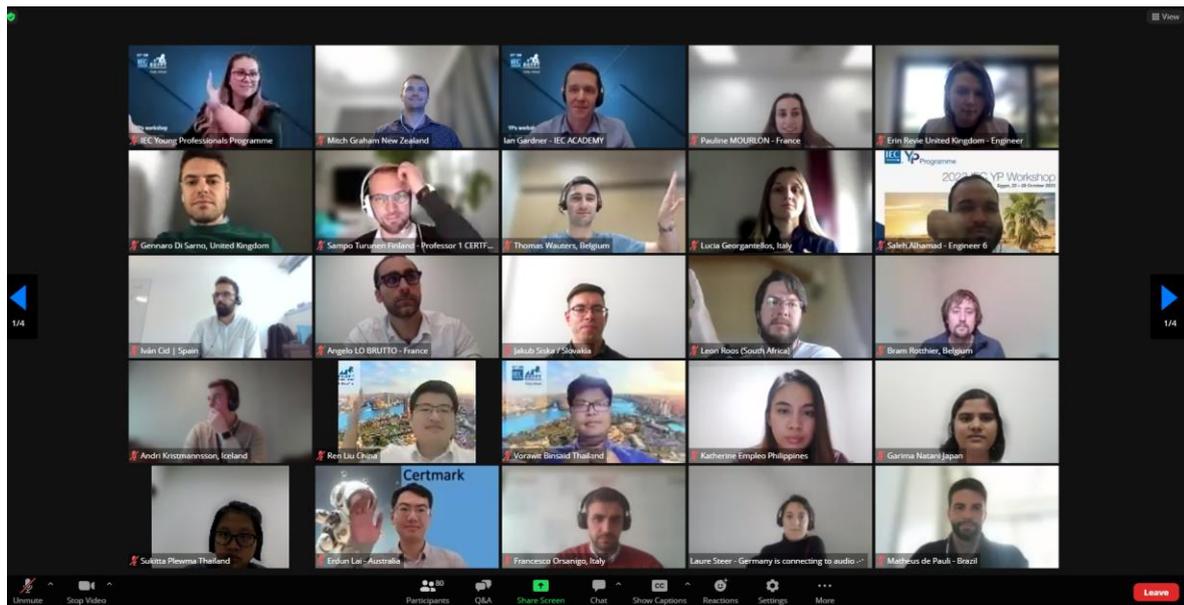- Appreciating different perspectives and backgrounds allows for well-rounded, fit-for-purpose standards.

YP Workshop Discussion

<u>Day 1 – Sunday 22nd October</u>

The YP workshop started with a welcome from senior members of the IEC leadership team including IEC President Jo Cops and Secretary General Phillipe Metzger. The laboured the importance of standardisation and the need to get the next generation involved in the IEC.

This was followed by an Ask Me Anything Q & A session with Alistair Mackinnon, Veronica A. Lancaster, Sadhvir Bissoon, President, Xun Gong, Anna Tanskanen, and Moderator Katharine Fraga. This gave our cohort the opportunity to learn a little more about what the IEC does and the perceived benefits of being involved in IEC for the panellists.

We then had in introduction to the breakout sessions to understand the objectives of these sessions. It involved collaborating with other YPs to brainstorm and deliver our ideas to the IEC General Assembly on our particular initiatives. The initiative I was working on was *Paving the way for the future - Long Term Sustainability (LTS) of the IEC.* The intent of this initiative was to explore how the IEC could ensure a future pipeline of subject matter experts and maintain relevance in the electrotechnical space. This was a great opportunity to get to know other YPs and get a diverse range of perspectives of how to tackle this challenge. The first session consisted of a brainstorming exercise to get as many ideas as possible identified.

<u>Day 2 – Monday 23rd October</u>

I missed this day of YP workshop due to last minute changes to my travel arrangements coming back from Egypt due to the workshop shifting online and I was in the air flying back from Dubai to New Zealand.

<u>Day 3 – Tuesday 24th October</u>

Tuesday's session started with a presentation from Michael Mulquin on SyC Smart Cities, Electrotechnical aspects of Smart Cities. This presentation outlined aspects required to develop smart cities, showed how this was currently at odds with current standards development, and shared the range of initiatives they are working on to close the gaps in requirements.

The second session was with 2022 IEC YP Leaders who each outlined the initiatives they had been working on over the past year:

- Dreamguide for implementation of YP national programmes – Mareen Tiedemann
- YP Alumni Register – Aida Al Yaaqoubi
- YP Strategy Committee – Cameron Chapman

The Dreamguide presentation was particularly insightful as I believe this is an area of potential improvement for the New Zealand National Committee to increase engagement with international standards.

The day concluded with the third and final breakout session to finalise the presentation for the General Assembly. It involved distilling ideas into concrete improvement initiatives and forming a compelling presentation.

Day 4 – Wednesday 25th October

We had the opportunity to attend (virtually) the IEC General Assembly and there were presentations from each of the YP breakout groups on each of the chosen topics.

There was a "Live from the Lab" session with several members of TC106, working in 5G, IoT and 6G. Telstra in Australia & Vodafone in UK. The session included live demonstrations of Conformity assessment equipment (phantoms) from Vodafone in the UK, and 5G demo speed test from the Telstra in Australia. We also got to learn about several of Telstra's IoT initiatives including a cycle helmet safety trail and Australian Rules board for visually impaired fans.

Following this session, there was an overview given for the process of conformity assessment which included legislation and regulation from standards, SMART standards, and AI and GPT implementation within standards. The presentation covered the varying levels of conformity assessment based on the level of risk for the application.
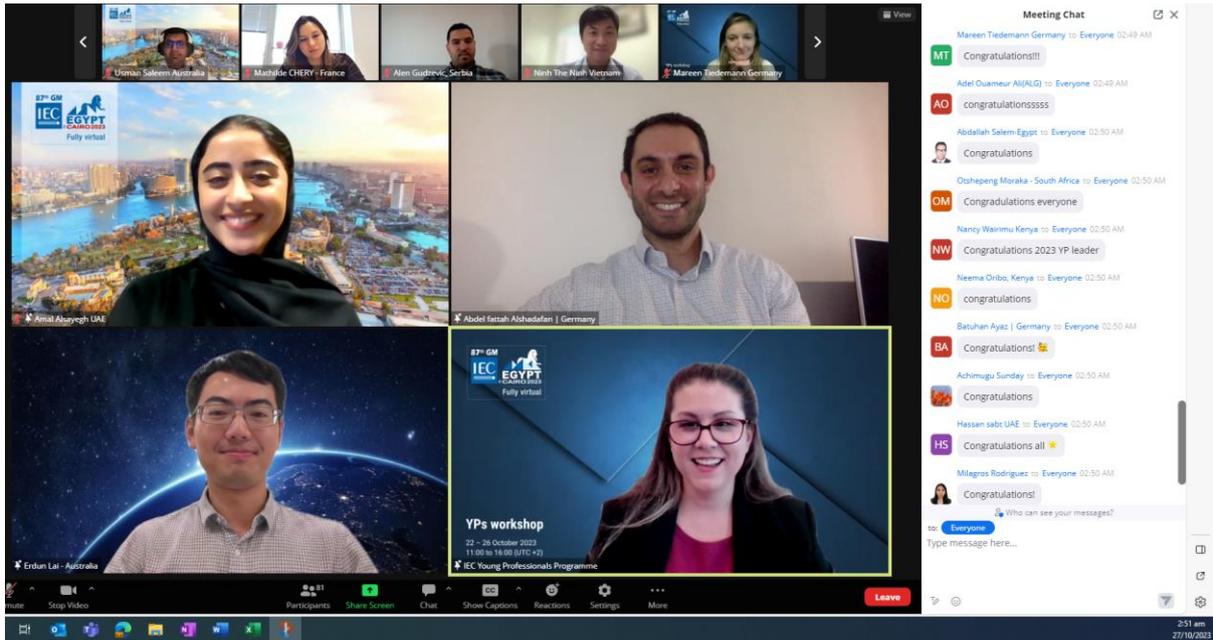
<u>Day 5 – Thursday 26th October</u>

The final day of the YP workshop was completing the 'Standard in a day' IEC Academy Bootcamp. The session started with information sharing around how standards are formed including:

- IEC publishes around 500 documents (mostly standards) per year
- Information regarding standards development process, voting process, and approval process, and a definition of consensus
- How to adopt IEC into national standards

Then this session moved into a mock run-through of developing a fictitious international standard on baby robots. Each person was assigned a particular role and interests within the exercise. This process showed the real-world challenges of developing standards with competing priorities. It was interesting to learn what consensus actually means in an IEC context, which is 'no sustained opposition' to a proposal.

The workshop concluded with YP Leader Elections for the coming year where three leaders were appointed. Congratulations to Amal Alsayegh from the United Arab Emirates, Abdel fattah Alshadafan from Germany, and Erdun Lai from Australia who were appointed to represent our cohort.

Recommendations

1. Develop a strategy to improve participation of young professionals in NZ in standardisation, which could include:
   a. Implement a YP national programme inline with the IEC Dreamguide
   b. Raising awareness within universities of the importance of standardisation
   c. The EEA partnering with industry companies to seek input on relevant standards
2. Continue to support attendance for the Young Engineer of the Year to attend the IEC General Meeting for the YP workshop

Acknowledgements

I would like to take the opportunity to thank the New Zealand IEC National Committee, Standards New Zealand, and EEA for enabling me to attend the IEC YP workshop.

Also special thanks to Steve Lowes (NZ IEC Secretary), Peter Berry, John Batchelor, and Chris Ewers, who formed the judging panel for the EEA Young Engineer of the Year 2023. It was an incredible experience to attend the IEC YP Workshop in Cairo, albeit virtually, and gain an insight into the importance of international standards and the inner workings of the IEC.

I would also like to thank Unison for there continued support of my development in allowing me to attend the 87th IEC General Meeting and YP Workshop.