

PNG SPEAKS OUT!

Papua New Guinea has just hosted its first ever Speak Out for Engineering competition.

Leslie Yeow was there...

After many years of working with the academic team at the UniTech (University of Technology) in Lae, Papua New Guinea, we were finally able to organise a Speak Out for Engineering (SOFE) competition on the 24th May in UniTech's Department of Mechanical Engineering.

21 students were divided into two classes, with two panels (including myself) judging the contestants. The topics were wide ranging, from solar powered portable desalination plants, improved designs for UAVs, feasibility studies for village based micro hydro-generation, to cassava crushers and peanut oil extraction machines. The whole day went

by smoothly even though a heavy downpour threatened to drown out the student's presentations part way through. The students seemed very motivated by interest from a Professional Engineering Institution based so far away and made good preparation to ensure they did not disappoint the judges. The high standard made judging all the more difficult. One of the things I noticed was that the students were keen to choose projects that benefited the community and were environmentally sustainable.

After much deliberation, a winner and runner up was chosen. Chris Vela won Papua New Guinea's first SOFE with his presentation on a Portable Solar Powered Desalination Plant. Meanwhile, Norman Wampe took a close second place with his presentation on the Design and Construction of a Peanut Oil Extraction Machine. We look forward to Chris competing at the Regional Finals in Sydney in November 2017.

I would like to thank Professor John Pumwa, Dr Syed Wahid, Dr Albert Schram (Vice Chancellor) and the rest of the Mechanical Engineering academic team at UniTech for organising this SOFE, being the judges and organising the logistics of my transport and stay in Lae. I look forward to working closely with UniTech to ensure that the SOFE becomes a continuing event at the University in future.

Leslie Yeow - Australian Branch



Competition Winner Chris Vela (left) with Leslie Yeow (right)

Did you know?

Speak Out for Engineering is a series of annual competitions open to Affiliates, Associates or Young Members who have been professionally registered for ten years or less. The marking structure is designed to reward visual and verbal presentation skills. The 2017 season has just begun, so if you are interested in taking part, contact your local panel for details of their competition schedule.



VIRTUAL REALITY -MORE THAN A GIMMICK

Victorian Panel treated to fascinating hands-on introduction to VR.

Virtual Reality (VR) has experienced exponential growth over the past few years as a result of investment from consumer industries. Products from high street names such as Samsung, Sony and HTC have now made it easier than ever for businesses to invest in VR for professional applications.

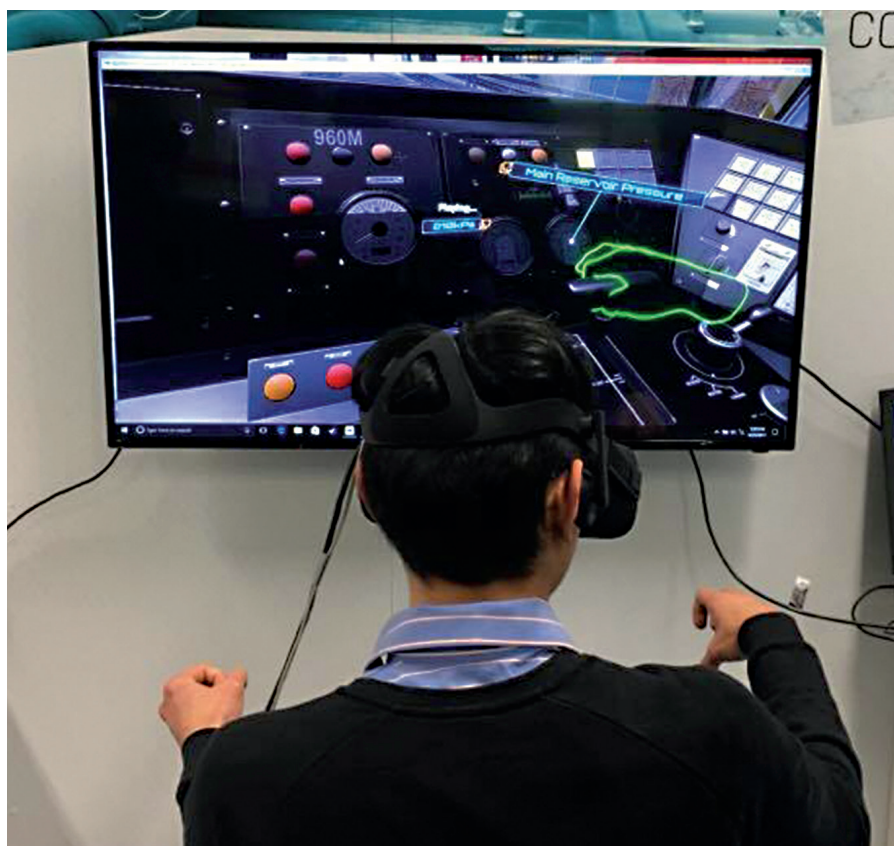
VR technology not only has a 'wow factor'; it also has proven benefits in training and design environments, where retention and spatial awareness are greatly enhanced. VR also enables convincing simulations of safety critical events without exposing users to risk of harm.

The IMechE Victorian Panel experienced this for themselves in May when they were invited to a demonstration evening, hosted by Metro Trains Australia, Exner Group and Real Serious Gamers- who together had developed a number of VR applications for the rail industry.

To give the audience an appreciation of the range of technologies used by VR, three demonstrations were on display.

The first was a 360 degree recorded video. Although the user cannot interact in this situation, they can look around the scene and- if the video was recorded using stereoscopic equipment- enjoy a three dimensional view. They can also hear what's going on around the scene. As a basic level of VR, this technique can be used to mentally familiarise users with specific locations or situations.

The second demonstration placed users inside a virtually rendered train



Fun, but also productive - a Victorian Panel Member tries out VR

driver cabin and guided them through a series of familiarisation exercises. By mounting a scanner on the VR headset, the user's hand movements were tracked and replicated within the virtual environment. So to operate a brake lever, a user would simply squeeze their (real) hand and move it to change the lever's position inside the virtual cab.

For the third demonstration, users were located within a rectangle of sensors. The sensors tracked the movement of their whole body, allowing them to walk, lean or crouch within the virtual world. The system can be adapted for small office space by dividing the virtual environment into sections and using a control stick to 'jump' to a neighbouring section once the real world boundaries have been reached. The same control stick can also be used to point or select specific items. Metro has trialled this application with its train maintainers, who must spot litter, cracked windows and other defects within a virtual train carriage.

The main learning point from the evening was that Virtual Reality can save businesses time, money and risk.

Yet, it is still in its infancy and many exciting improvements lie ahead.

One current avenue of research is haptic feedback, whereby the immersion of sight and sound (from the headset) is supplemented with the sensation of touch (from gloves). This could be used to allow users to experience heat, cold, pressure and weight.

In case you're wondering, there are no plans yet to involve the two remaining human senses (smell and taste), although the restaurant industry may well hope it will soon be possible.

To find out more about how VR could enhance your business, check out Metro Trains Australia's VR development partners: www.realseriousgames.com and www.exner.com.au

Nic Coulthard - Editor



MEET OUR NEW YOUNG MEMBER CHAIR

Name: Ibrahim Shanin CEng MIMechE RPEQ

Role: Senior Concept Engineer - Brownfields

Company: Shell

Location: Brisbane

Institution Role & Duration:

- **Australian Young Member Chair (March 2017 - Present)**
- **Queensland Young Members Rep (August 2015 - Present)**



How did you get involved with the institution?

In 2010, I joined BG Group as a Graduate Engineer, and enrolled in the IMechE eMPDS scheme working towards my Chartership, which I got in 2015. Upon receiving my Chartership, I decided to become more involved with the community starting with becoming the Young Member Representative for Queensland.

What is your day job?

I am a Senior Concept Engineer leading a team who develop concepts for business issues, improvements and trials across an integrated onshore coal seam gas to LNG business. We engage a range of stakeholders to understand the real business case and value of performing a project/study, facilitate the development of options and selecting the preferred concept to be trialled or executed to add value and/or reduce risk to the business.

What keeps you busy outside your day job?

I enjoy hiking, camping, fishing and gardening. I also have a Lotus 7 type kit-car which I built from scratch which is road registered. I spend the remainder of my time tinkering and driving it around Brisbane.

Most exciting project you worked on?

The installation and commissioning of West Delta Deep Marine Phase VIIa which was eight new subsea wells being connected up in the Mediterranean Sea. This happened in record time with no injuries and took place in 2011 immediately after the Arab Spring Revolution. It was amazing using such technologies in deep water and being responsible for so much.

What kind of project would you like to work on?

Any project which delivers significant value to the community, the environment, and/or the company.

What do you see as the engineering challenge for the future?

I think one of the biggest challenges has to be energy and the transition to cleaner and less CO2 intensive solutions for the future.

What does being part of the IMechE mean to you?

It represents an opportunity to give back to the community, allowing me to mentor new graduates and organise and attend interesting talks from outstanding engineers working in a variety of diverse and interesting industries.

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THE IMPORTANCE OF FULLY TESTING A RACING CAR

In 2015, Melbourne University Racing placed second in Formula SAE-Australasia. But in 2016, the car did not make it to the competition. What went wrong and how could it have been avoided? This report is from team member Andrew Zammit.

Being a year of many firsts for Melbourne University Racing (MUR) in 2016, the team had a monumental task ahead of them. Designing and implementing the heave spring setup, switching from a steel space frame chassis to a carbon fibre monocoque, and an overhaul of the powertrain platform. The latter resulting in our downfall.

For the previous decade, MUR had made use of the 4-cylinder Honda CBR600RR engine to power them through the December competitions at Calder Park. This engine delivered a lot of success for the team as a result of the carry-over knowledge from past teams and extensive experience with the engine.

Placing second overall in the 2015 Formula SAE Australasia (FSAE-A) competition - MUR's best feat to date- the 2016 team set their sights on the top spot.

While the four-cylinder was a reliable and powerful engine, it also came with a lot of weight. This factor prevented the car from reaching

its full potential. To resolve this, a smaller engine was needed. Therefore the single-cylinder KTM 525 EX-C was introduced as the successor to the Honda. This engine was lethal on the endurance motocross circuit. It is known for its reliability and has been proven by universities across the world as a strong option for Formula SAE.

To make up for the reduction in performance figures compared to the four-cylinder, a forced induction system, coupled with a range of internal modifications were attempted.

The KTM 525 is also born as a carburetted engine requiring it to be converted to an electronically fuel injected system in order to meet F-SAE rules. These modifications in their own right were a huge task requiring extensive and thorough development to ensure reliability – all of which were undertaken by a single engine team of three persons.

The electronic fuel injection system was developed and proven early on,



MUR 2016 on South Lawn, University of Melbourne (Parkville Campus)

crossing one major task off for the engine team. The next task was a change of camshaft to a more aggressive profile to maximise the performance of the engine. A taller piston was then installed to increase the compression ratio of the engine. All while a turbocharger system was being developed to go on the engine.

Having to make so many modifications on an aggressive timeline left little time to validate and extensively test each modification on its own. Furthermore, the single-cylinder engine also posed a range of challenges not previously experienced by the four-cylinder loving MUR alumni.

In November, the team decided to leave the turbo behind in lieu of more testing time for the naturally aspirated engine. A week before competition, the highly modified single-cylinder was producing exciting torque and power curves on the chassis dynamometer, leading to an aura of excitement around the competition to come.

December 9, 2016: Scrutineering was eventually passed and all systems were a go – or so it seemed. The engine unfortunately was suffering from an inability to continuously crank. Was it timing? Was it valve clearances? The physical issue was never solved. At this point, the team could only watch others compete in disappointment as they pondered on what went wrong.

So, what went wrong?

The problem was not a result of the inadequacy of the engine team members, far from it. The team was comprised of exceptional engineers. The problem was the result of an underdeveloped system producing problems unseen by the MUR cohort and alumni and attempting more modifications than there was time to validate.

The result was a valuable lesson in the importance of testing and providing adequate time to do so effectively.

Although failing to compete in 2016, we do not look back in disappointment. On the contrary, we look back with

pride as we see a team who took on a monumental task with little time in hopes of crossing the finish line first, only to barely come up short.

In 2017, the team is taking on the lessons learnt last year and improving upon them to create our best car yet.

We will see you at the 2017 FSAE-A Competition in December at Calder Park!

Andrew Zammit - Team Member, MUR

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MUR 2016 working on the race car

INTRODUCING OUR NEW EDITOR

Hello. I'm Nic, your new Australian News Bulletin Editor. I'd like to invite you to contribute to our next edition...



Did you notice any changes between this bulletin and the last? If not, good! I believe we already have an excellent publication and I intend to keep it that way. Minor tweaks excepted, of course.

I have been a member of the IMechE for over 15 years. After leaving school, I embarked on a summer vacation job in a technical drafting office. My forward thinking employers assigned me a mentor who was a Chartered Member of the IMechE (back in the day when its logo took half an hour to draw). My mentor told me about the institution and encouraged me to join. By holding quarterly reviews with him and scoring my progress against the IMechE's competencies, I got started on my professional

development journey- which continued through University and into my first graduate roles.

When I first moved to Australia seven years ago, I was not sure whether my association with the IMechE would be recognised. Thankfully, it is highly regarded in Australia, as it is in many other countries. So I was able to continue training with a new mentor, eventually reaching the level of Chartered Engineer.

A short while later, I moved to Melbourne and took a closer look at the local support network that exists within the IMechE. After getting to know a few of the Victorian Panel members through work, I was invited to become their secretary, a role I have now held for two years.

Within the panel, I have organised events, promoted engineering to students, delivered presentations and judged competitions. I also enrolled with the IMechE as a registered mentor and helped other engineers work toward their goals, just as my old mentor did for me years earlier. It's not all hard work though - within our community you make good friends and there is plenty of social interaction.

This news bulletin is distributed three times a year to 1,400 members of various ages and backgrounds in Australia, New Zealand and Papua New Guinea. It is also published on our website. It is a chance to tell our stories, show off our achievements and voice our opinions on the engineering profession.

For many of us who have links with the UK (and sometimes get a bit homesick), it is like that birthday card from home - reassuring, sometimes poignant, but a great way to keep in touch with like-minded individuals. This is a friendly support network for

those with common professional interests. It is not a peer-reviewed journal or political manifesto, so there's no fear to be had in contributing and making yourself known.

If you've completed an innovative new project at work, why not write about it? If you saw a fascinating piece of engineering on holiday but the family don't share your enthusiasm, perhaps tell us instead? Been promoting engineering in schools or seen a student team build something grand? Sing your praises right this way! You might want to write about a technical documentary or even review a gadget. If you don't like writing, just jot down some notes, attach some pictures and we'll do the rest.

My relationship with the IMechE has been a positive feedback loop. To begin with I may not have appreciated all it offered. But it was always in the background, growing with me- even when I changed jobs and moved continents. And once I took my first steps to getting more involved, so more opportunities began to emerge.

I would like to encourage all members to make this news bulletin their own. You can contact the news room at the email address below. Seeing your words appear in these pages is a great way to contribute to this great institution. And could be the start of something great for you too.

Nic Coulthard - (New) News Bulletin Editor

australianews@imechenearyou.org

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PANEL ROUNDUP

Latest news from around the region

PAPUA NEW GUINEA

Professor J Pumwa met IMechE Australia Chairperson Leslie Yeow in Perth, Australia during the 2017 Australian Branch Committee meeting. The outcome of the meeting resulted in IMechE Australia inviting Papua New Guinea (PNG) mechanical engineering students to participate in their first ever Oceania "SOFE" (Speak Out for Engineering) competition.

Dr S Wahid volunteered to act as coordinator for this international event. After a series of communications between Dr Wahid and the IMechE Australia representative it was decided that IMechE would sponsor. SOFE

for the PNG region took place on Wednesday 24 May 2017 at UniTech.

This development was communicated to the targeted students, ranging from second year and above. The message was communicated in the form of notices and motivational talks.

The initial responses from the students were found to be extremely encouraging. A number of mechanical engineering students registered their interest for the competition.

Two class rooms were booked to accommodate the students for their seminar presentations that would continue throughout the whole day. A number of student seminar judges were required to evaluate the students' performances as per the guidelines set by IMechE. Five academics from the department volunteered to be the evaluators, the sixth one being the IMechE Australia representative.

The competition itself went very well. In general the students were found to be fully prepared, and highly motivated. Their seminars were of professional nature and I'd like to add that we have managed to explore the hidden talents of the students. The topics of presentation included complex and innovative ideas.

Mr Christopher Vela, a fourth year student was declared the PNG regional winner. Mr Norman Wampe, a fourth year student was declared PNG regional runner up.

The department acknowledges the support provided by the Vice Chancellor, Dr Albert Schram.

Dr S Wahid- PhD (UNSW, Australia),
CEng MIMechE, MEI (UK)



Competitors at the Inaugural PNG SOFE Competition

VICTORIA

At the beginning of this year, I commenced my third year as the Victoria panel chair. Each new year sets the challenge of providing members with site visits, technical lectures, social functions and other events. However, this has been made significantly easier by the dedication and motivation of the Victorian panel members and as we approach the halfway mark of 2017, this is once again proving to be the case.

In mid-February, the panel held a social and networking night which attracted good attendance and offered members the opportunity to share knowledge, ideas and interests. Early March saw an exciting visit to the Avalon Air show. This event was very well attended with extremely positive feedback for both the show and the organisation by panel members.

Victoria's mentor/mentee programme continued in late March with a dedicated Automotive night. I would like to thank the key speakers and mentors for giving up their time and offering their guidance and support to younger engineers. I would also

like to thank Nisha Nijhar, our Young Members rep, who is the driving force behind this programme.

Our friends at Metro trains offered IMechE two events in May which included an Engineering Forum and an exciting visit to their Virtual Reality Technology centre. Both events achieved healthy attendance numbers and I would like to thank Metro Trains for their continued support of IMechE Victoria.

Finally, the panel held a membership recruitment night, also in May. The recruitment drive was not only focused on potential new members but also existing members who may be interested in joining the Victoria panel. Please note, if you would like to join the Victoria panel and contribute to IMechE members, please contact me. The panel offers a friendly and enjoyable environment and the opportunity to interact with other engineers, and to support engineering in Victoria.

As we roll into the second half of 2017, Victoria members can look forward to a number of key events including the ever-popular Christmas in July and

SOFE competition plus some upcoming interesting technical lectures. I look forward to seeing you at the next event.

**Matthew Cook CEng FIMechE-
Victoria Panel Chair**

Did you know?

Panel Roundup is a regular feature of this news bulletin, where key contacts from each panel will report recent activities and outline their plans for the near future.

We are keen to cover as many panels as possible in each bulletin. If you have any suggestions, contact your local chairperson in the first instance.

Articles on more specific subjects can still be sent to the newsroom email address.

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IMechE Members at the 2017 Australian International Airshow

REGIONAL UPDATE

**Oceania Chair Ian Mash
returns from London,
where he helped shape the
IMechE's overseas strategy.**

I write this sitting in Heathrow, about to 'enjoy' yet another economy class flight back to Sydney. Whilst not a fun prospect, these trips are necessary if we in Oceania are to influence the Institution's agenda. Earlier this week I represented our region at the IMechE Council meeting – the advisory body for the Trustee Board in the IMechE. I also participated in the International Strategy Board Meeting – where the seven regional (that is not UK!) chairs meet and progress activities affecting our members outside of the UK.

There are now 118,000 IMechE members world-wide, of which 28,000 are outside the UK. My goal for these trips is similar to the other regional chairs – to ensure the voices and opinions of our region are heard, and to ensure the value proposition we deliver to our members in Oceania is as strong as it can be.

I was also pleased to attend the AGM, at which Carolyn Griffiths- the third female president of our Institution, was 'sworn in'. Whilst three is not a big number, it is at least progress in the Gender Agenda – something Carolyn discussed in her presidential address, which you might get the opportunity to hear directly when she visits Oceania in early 2018.

One contentious issue discussed in London was the funding available for our Speak Out For Engineering (SOFE) competition. This truly is one

of the jewels in our crown – a speaking competition for young engineers. The competition has gone from strength to strength here in Oceania, and this year has grown further with the competition being held in Papua New Guinea for the first time.

A victim of its own success, SOFE has a problem in that worldwide, there are more competitions than prize funds available. To my simple mind, an obvious solution was dividing the pot of money available by the number of competitions desired, but this was not permitted. So, earlier this year, our committee was faced with the prospect of having to cancel events we'd previously held for many years – a disappointing outcome for a growing and international institution.

I am pleased (and relieved) to report that, thanks to a most generous offer from Metro Trains Australia (MTA), our SOFE programme is unaffected for 2017. There will be heats in each state, as well as Papua New Guinea and New Zealand. Their winners will come to Sydney in September for the Oceania final and our Oceania champion will then proceed to compete at the World Final. This year the World Final will be held in Christ-church NZ – in conjunction with a Face-to-Face meeting of our International Strategy Board. Thank you Andrew Lezala (Chief Executive Officer of MTA) for this generous sponsorship!

Which brings me to a key point I want to share – that often asked question - how does all this affect you?

Well – there are many ways you can be more involved in your local IMechE region. You might choose to enter SOFE and challenge yourself against your peers. You might come along and support the SOFE competitors at your local event. You might choose to join your local committee. You might choose to nominate for my role (I have only a year of my three years left!).

You might choose to attend one of the 60+ learned society events held across our region annually. You might choose to give a lecture. You might choose to become an interviewer for those candidates seeking to do their chartered interview locally in Oceania. You might choose to mentor. Or you might choose not to engage at all. These are all valid options. I am glad some of our members volunteer – as without volunteers, the Institution's activities would simply collapse.

Reflect on is just how much is happening locally. Lectures, visits, interviews, SOFE, mentoring, meetings and a Presidential visit. This is how active volunteers in our region are striving to provide value to the Oceania membership. We work hard, spend our (smaller than I'd like) budget prudently, and try to have as much fun as possible doing so. I'm always energised by the amount of laughter at our teleconferences and our meetings. After all, when it stops being fun, volunteers will stop doing it. And that would be a tragedy. It would be a very bad thing.

Anyway, off now to a plane and more airline food – another very bad thing.....

Ian Mash - Oceania Chair

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S.M.A.R.T GOAL SETTING

We've all heard of it. But
does it really work?

S.M.A.R.T - specific, measureable, attainable, relevant and time-bound. The big buzzword/acronym which comes to mind when setting goals.

Recently, picking up and reading the book "The Twelve Week Year" by Brian P. Moran and Michael Lennington, made me take stock and think about what we do at the start and end of each year, and how few goals truly get enough focus.

At the start of each calendar or financial year, employees often set up a meeting with their managers, get surprised about the time of year coming around so fast, copy what they had put down last year, change it slightly and upload it into a performance management system. After this is done, goals are forgotten until the end of the year when they are reviewed. This is a very traditional and annualized way of goal setting that has not changed in a very long time.

Coming back to The Twelve Week Year, research has shown we tend to only be able to truly focus on two or three

priorities at once. We, as humans, are simply unable to multitask. The reason why annualised goal setting can fail is because although goals are set, there are too many of them, no plan on how to achieve them, no follow up before the year end and no realignment as circumstance change.

It is interesting to think that we all set annual goals and plan to achieve those goals within the allotted twelve month timeframe, when in reality we will achieve a few goals and make excuses for why the others weren't completed - they then get pushed out or drop off the list the following year. I have heard stories from various industries of a big rush at the end of the year to get things done or maximize the budgetary spend in the final weeks. This just shows a lack of forward planning and inefficiency. It also shows that, given a schedule constraint, people have the capacity to deliver substantial volumes of work!

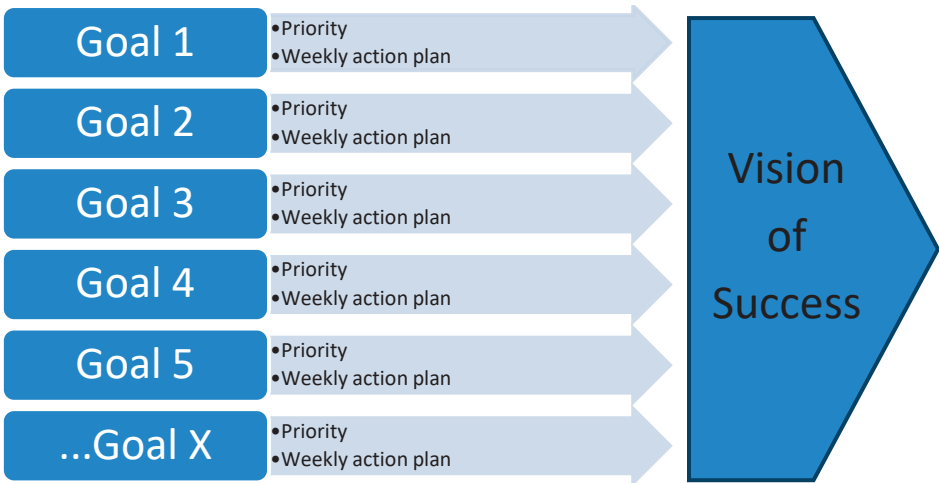
One suggestion on how to combat this issue, would be to figure out what success looks like for your business/ team and for yourself. First, you need to decide on a vision for both. After this is made clear, list everything that needs to be done to achieve that vision. Then, prioritise the activities and overlay against time constraints and dependencies. The big difference is that S.M.A.R.T. does not cover the use of a weekly action plan. So at employee level, focus on two or three activities at once.

Focusing on your two or three activities, physically put pen to paper or words on a spreadsheet and breakdown your goal into weekly activities/milestones (Figure 1). The Twelve Week Year, as the title suggests, proposes that the weekly action plan is capped to 12 weeks. If the goal is impossible to achieve in 12 weeks, break the goals down further. If for some reason, the activity for the week could not be achieved and is pushed to the following week, both activities should be targeted for completion in that week. If this does not happen or cannot happen, revisit your action plan for achieving success.

It was Albert Einstein who is rightly or wrongly credited for exclaiming "The definition of insanity is doing the same thing over and over again, but expecting different results".

So next time you are setting goals, work or personal, think about your true vision for success, how many goals you have and their importance in relation to other goals. Set a twelve-week target and create a weekly action plan to achieve each goal - if something isn't working, change what you/your team are doing.

Ibrahim Shahin - Young Member Chair



Support your goals by assigning priorities and developing a weekly action plan

REMOTE ISOLATION KEEPS RAILWAY ENERGISED

A new device will soon boost productivity for Melbourne's railway maintenance teams.

The Melbourne rail system is being transformed. Major works programs such as the Level Crossing Removal Project and Melbourne Metro Rail Tunnel, along with 24/7 services at weekends through the Night Network, mean reduced windows for infrastructure crews to carry out essential renewals and maintenance.

Metro Trains Melbourne is meeting the challenge through engineering solutions such as the new Remote Isolation System (RIS). The centre piece of the system is a specially developed remote isolation switch that safely and swiftly de-energises overhead lines.

The project team has developed a dual arm switch, where one arm is the disconnecter and the other the short circuit. The disconnecter provides the primary connection between the power supply and the overhead lines. By opening this arm, the breakage distance is sufficient to consider the line isolated. The short circuit arm is driven separately and is normally open. Once closed, it provides a path from the overhead to the negative return point, making it safe for technicians to work in the vicinity of the overhead.

The new switches are controlled from the railway's Electrical Control Centre. Primarily designed for remote operation, they can also be operated locally via a control panel. This control panel also features a lockout switch which enables on-site technicians to

remove remote control, eliminating any unintentional re-energisation of the section. In the event of total power loss, the switches can also be manually crank-driven.

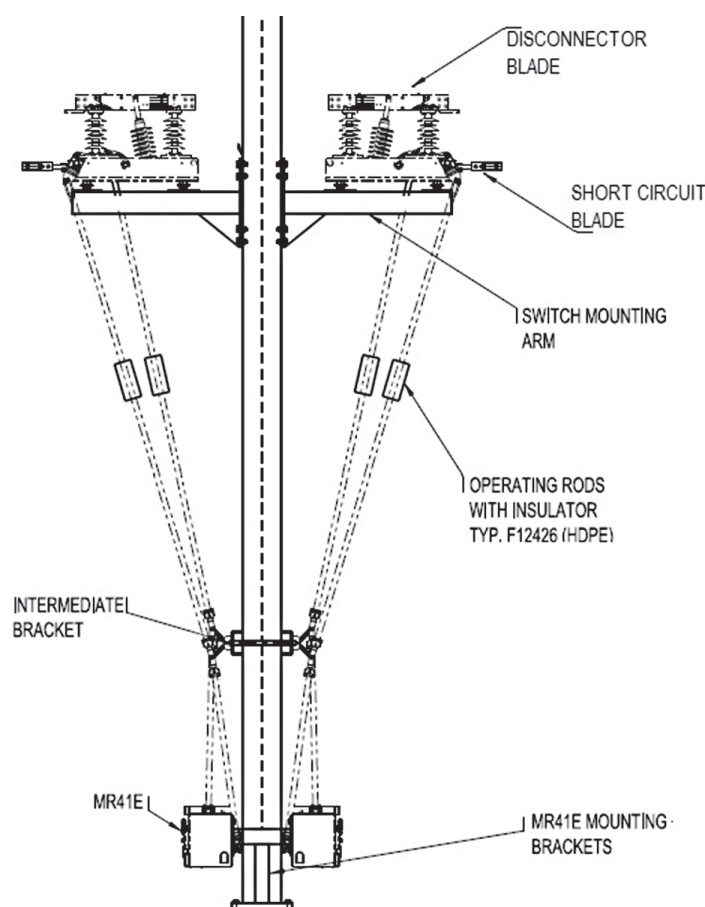
A number of interlocking safety measures have been built into the design to guarantee safety of personnel and surrounding infrastructure. There are also numerous sensors that continuously monitor the motor drive and report faults.

James Donovan served as project manager for the development of the new system and is enthusiastic about the potential benefits it will deliver, stating, "The RIS trial mimics the existing process through a programmed operation method to de-energise, isolate, test and short circuit the overhead network. The streamlined procedure will deliver valuable efficiencies for our maintenance, renewals and projects teams."

Bench testing of the remote isolation switch is complete. The switch is expected to be rolled out in the field within weeks.

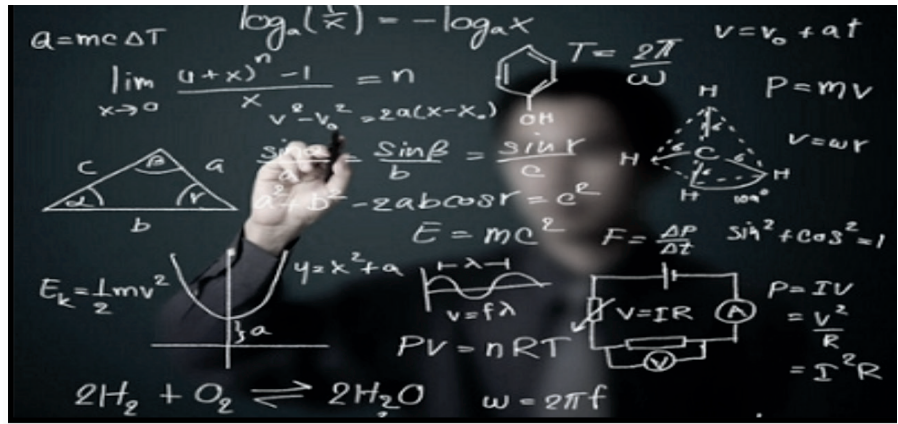
There are many advantages of converting to the remote isolation system including increased safety, cost efficiencies and better use of specialised skill sets. Perhaps most significantly, a greater amount of time is available on track. The conventional isolation method can take in excess of 45 minutes to implement, while the new method takes under 10 minutes.

Chris Fletcher - Metro Trains



RIS Diagram, showing switch and motor drive arrangement

ANNOUNCING THIS YEAR'S TECHNICAL WRITING COMPETITION



The IMechE Australian Branch invites you to submit entries for the 2017 Technical Writing Competition.

The competition is open to all IMechE members with a brief summary paper on a technical subject related to mechanical engineering.

The winning article could be published in the IMechE World Bulletin as well as the IMechE Australian Branch's News Bulletin.

The winner will also receive the following:

- Free entry to Engineer360, the IMechE's new 360 degree feedback tool (worth GBP 150 / 300)
- Peer review of your article by a professional engineer in a similar field.
- A \$250 Amazon gift voucher

To enter; email your report to australiannews@imechenearyou.org before the 26th of September 2017

Conditions of entry:

- The paper, including all images must be the entrant's own work and not subject to copyright or confidentiality.
- Entries must be less than 2000 words, including an executive summary of less than 300 words.
- Judging will be completed by 3 IMechE panel members, considering; clear and concise, relevant use of charts, tables and diagrams, technical content.

It's free to join IMechE as an Affiliate. Refer to:

<https://www.imeche.org/membership-registration/become-a-member/affiliate-member/student-affiliate>

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