

SCIENCE

Reaching for the stars with Measat

Measat team members share their out-of-this-world career experiences



Measat has been operating since 1992. – Measat.com pic, September 14, 2021

AS Malaysia's premier international satellite operator and a cornerstone of Malaysia's ICT infrastructure, Measat has long been Malaysia's flag bearer in space. On a more down to earth level, we seldom hear about its 150-strong 100% Malaysian workforce, which includes scientists and engineers widely acknowledged as subject matter experts in the satellite field.

For over 30 of them, their career path at Measat has taken them onwards to key management positions in leading satellite and telecommunication companies around the world as well as into positions at the International Telecommunications Union (ITU), a United Nations specialised agency for ICT.

In this month where we celebrate being Malaysian, let's get to know some of Measat's team members – a tight-knit Malaysian family working in a unique field.

Measat, Malaysia's satellite family



Zainudin Abdul has been at Measat since the beginning. – Pic courtesy of Measat

A 28-year pioneer at Measat, Zainudin Abdul, Vice President for Satellite Engineering & Operations has been in the picture since the beginning, harnessing his passion to help Measat grow. He played a key role in the team that began Measat's operations in 1992, starting with the construction of the Measat-1 and Measat-2 satellites.

Leading the Measat satellite operation, he has been working with a team of highly experienced local satellite and ground engineers over the last 25 years.

Over his long career, Zainudin has witnessed the entire lifecycle of satellites, an experience not paralleled by many in the industry. “From the initial construction of the satellite, my involvement was hands on – from tweaking the wires and testing the satellite until it is launched into space. Then, across its operations for over 15 years and lastly as the satellite reaches the stage of deorbit. Not many people have stayed in the company through the journey of a satellite's life cycle.”

Nevertheless, he is concerned about the future clutter caused by deorbited satellites. “I hope to see a plan for a safer space environment that avoids

overcrowding of satellites in space. There should be a method to start removing satellites that are no longer in use, from orbit or the space junk graveyard.”

Measat's focus on retaining the best talents and continuing to enhance their comprehensive industry expertise and experience, by offering equal training and opportunities, regardless of gender, and an excellent work-life balance and benefits has also created pioneers among Malaysian women.



Kuan Chee Shung (R) is the only female orbit analyst in Malaysia. – Pic courtesy of Measat

Kuan Chee Shung, a 21-year veteran at Measat is among them. As the Principal Technologist for Orbital Operations, she has been a member of Measat's Orbital Operations team since its first satellite Measat-1. Kuan is proud to be the sole female orbit analyst at Measat and in Malaysia.

“There are only three of us in the Orbital Operations team, and this gives us a sense of empowerment knowing that our expertise is well-utilised for the greater good of Measat's satellite fleet.” She credits teamwork for the team’s success, as they had to build knowledge through new research, collecting data and doing things from scratch in a challenging environment.

Another achievement Kuan hold close to her heart is successfully extending a satellite’s lifespan. “For Measat-1 and Measat-2, we were able to extend the lifespan to twice the design life – one of the proudest moments in my career.”

Like her colleagues at Measat, she feels the loss of the Measat-3 satellite deeply – after it had to be deorbited when it could not be returned to full service following an anomaly incident on June 21, 2021 – itself a rare incident being only the major outage experienced by Measat since commencing operations in 1996.

The next generation



Brelveenraj Kaur Rajwant Singh joined Measat three years ago. – Pic courtesy of Measat

From the pioneers to the new generation, Measat personnel have been reaching new heights.

Brelveenraj Kaur Rajwant Singh, an engineer in the Satellite Engineering team, was appointed to represent Malaysia as the National Point of Contact (NPoC) in May 2020, in the United Nations Programme on Space Applications. In her role, she guides young professionals and students in Malaysia who are interested in a space industry career, hosting webinars during the pandemic to strengthen connections and boost engagement within the space community.

As a young team member who joined Measat three years ago, Brelveenraj aims to use her role as NPoC to encourage more Malaysians to enter the space industry and help them find a suitable career. “Space is a multidisciplinary field. I want more people to realise they don't have to be an engineer or a STEM graduate, you can be a space lawyer, space journalist or be involved on the business side.

Everyone is ready to help and teach – as long as you have the passion, you can be in the space industry.”

Brelveenraj is among the Measat team members whose career choice was inspired by movies. “After watching Hidden Figures, I was so inspired by the women who contributed towards the progress of technology, so I told myself I wanted to be like those pioneering women in this industry.”



Gerald Danaraj Alex Jones Jayaraj has been with Measat for 17 years. – Pic courtesy of Measat

Meanwhile, inspired by the movie Apollo 13, working in a control room in the space industry is a dream job for Gerald Danaraj Alex Jones Jayaraj, a Satellite Control Senior Technologist working on the frontlines of the 24-hour Satellite Controller department.

On the ground, the impact that Measat has made on people’s lives stands out in his 17-year career. He cites how with current technology, CONNECTme NOW satellite broadband has brought internet connectivity to rural areas in Malaysia, making online learning and more possible during the pandemic.

“Fifteen years ago, broadband satellite was something you would never hear of (as a solution) where geographical limitations were a hindrance to connectivity especially in remote areas.” On the international front, he cherishes his

experience stationed in Azerbaijan to train the Azercosmos satellite team and provide post-launch support as the experience of a lifetime.



Satellite Engineering Manager Mohd Muzaini Mohammad @ Mahmood (L) has been with the company for 21 years. – Pic courtesy of Measat

One of the many space buffs at Measat and a fan of 'Star Trek V: The Final Frontier', Satellite Engineering Manager Mohd Muzaini Mohammad @ Mahmood currently leads a team of spacecraft engineers and subsystem specialists in satellite operations and maintenance, as well as previously serving as the resident engineer during construction of the satellites Measat-3 at Boeing and Measat-3b at Airbus in France.

A 21-year veteran in the company, Muzaini feels a personal connection with the satellites, and is sad when deorbit operations need to be performed – the recent fate of Measat-3 after the anomaly. “To us, the satellite has sentimental value. We have worked on the satellite since Day 1 and it is sad to see its lifespan end. We work day and night trying our best to recover the satellite but sometimes, we have to accept that it is time for the satellite to deorbit.”

Muzaini also hopes Malaysians will build and create more, patenting designs aggressively to lead Malaysia towards becoming a more developed nation. “I hope that in the future, we will not only use finished products from other countries, but

Malaysians will be the ones developing, building and marketing the high tech products used by the masses.”

MEASAT-3d and the future



Shame'er Shah Kamal has been with Measat for 14 years. – Pic courtesy of Measat

With the launch of the new Measat-3d satellite on the horizon, Shame'er Shah Kamal, Assistant Principal Engineer for Technology Development and the resident engineer for Measat-3d, is currently based in France. “At the moment, we are in the testing phase of Measat-3d, so we are reviewing a lot of data and discussing the progress of phases for the launch.”

Over his 14 years at Measat, he has seen the positive impact of satellite technology, with a personal vantage point of the benefit of CONNECTme NOW. “My wife’s hometown in East Malaysia is in a remote areas with poor connectivity. With CONNECTme NOW, the community is excited to have internet access and all the kids can find information on the internet to help them learn as well as play online games. With the upcoming Measat-3d, I hope we can further close the digital gap and improve connectivity in rural areas. I think that’s important.”



Octson Hill Dollick Jr, an engineer in the Satellite Engineering team. – Pic courtesy of Measat

One of the newest members of the Measat team with one year under his belt, Octson Hill Dollick Jr – an engineer in the Satellite Engineering team, nevertheless plays an important role in ensuring the safety and health of the satellites and optimising their performance, with satellites being critical to the nation’s communications infrastructure, serving key facilities and services such as Petronas and the National Tsunami Warning system in addition to television and telecommunications services. He cherishes the teamwork and learning opportunities that are key to Measat's success.

“The recent anomaly of Measat-3 showed the importance of teamwork and collective effort in solving issues. I look forward to having more responsibilities, especially with the upcoming launch of Measat-3d. There are subsystems I am not familiar with, so I want to learn much more in the years to come and contribute towards the future of Measat.”

Since its inception in 1992, Measat has invested over RM7.6 billion in communication satellites and ground facilities, enabling it to make a mark globally, covering 130 countries representing 80% of the world’s population across Asia, Africa, Europe and Australia.

Measat will further strengthen its fleet of satellites by adding Measat-3d in the 91.5°E orbital slot in 2022, which will restore the redundancy of Measat's fleet of satellites at 91.5°E. This move is expected to provide unrivalled in-orbit satellite redundancy for DTH, Broadcasting and Telecommunications services for the region, besides significantly enhancing broadband speed of up to 100 Mbps in areas with limited or without any terrestrial network throughout Malaysia, through the CONNECTme NOW service. – The Vibes, September 13, 2021