ENGINEER YOUR FUTURE

Pushing the boundaries of innovation

As a project manager at DSTA's Networked Systems Programme Centre, Mr Matthew Chan gets to be at the forefront of defence technology

ESTHER TEO

DURING his national service as a fire and rescue officer in the Singapore Civil Defence Force (SCDF), Mr Matthew Chan experienced first-hand how technology could be a great aid during emergency situations.

It deepened his interest in engineering, and he decided to pursue a Bachelor of Engineering (Electrical and Electronic Engineering) at the Nanyang Technological University.

He recalls: "Upon graduation, I was keen to find a job that would enable me to apply my engineering knowledge and contribute to Singapore's defence and security.

"My family and friends all thought that an engineering career at the Defence Science and Technology Agency (DSTA) would suit me well."

Applying his skills well

Nearly nine years on, Mr Chan, 34, has risen through the ranks to become a project manager at the Networked Systems Programme Centre at DSTA.

He finds his work interactive and exciting. Some days are spent engaging partners and technical experts from various government agencies; while others are spent reviewing technical documents and contracts, as well as working with colleagues of various engineering disciplines to develop effective defence and security capabilities.

One of his first projects was to help develop SCDF's Advanced Command, Control and Communications Emergency System (ACES).

He implemented mobile video technologies on fire-fighting vehicles so that live visual information could be sent back to the operations centre.

He says: "Imagine how thrilled I was when my first project in DSTA was to deliver ACES to SCDF, where I served my national service.

"ACES provided the operations centre valuable first-hand information about the ground situation, allowing SCDF personnel to respond to situations in a timelier manner."

Five years ago, he took part in an inter-agency study to design the architecture and system for inter-agency video-sharing needs to strengthen national security.

As a result of the study, the Integrated Video Sharing Grid (IVSG) was developed to integrate video feeds from various agencies and to enable the sharing of videos for a wider range of applications, thus optimising resources at the national level.

Real-life applications

Mr Chan is now working on the design of the next generation command, control and communications (C3) system to manage checkpoint operations and enhance border security.

One such example is the use of advanced video analytics to reduce heavy reliance on human judgment and experience in detecting checkpoint security breaches.

Sometimes, his work and projects give him the opportunity to travel and learn from fellow professionals overseas.

For instance, he has visited countries in Europe to learn the best practices in video-sharing solutions.

He has also been to Hong Kong to study its civil emergency systems, which helped him to gain insights for ACES.
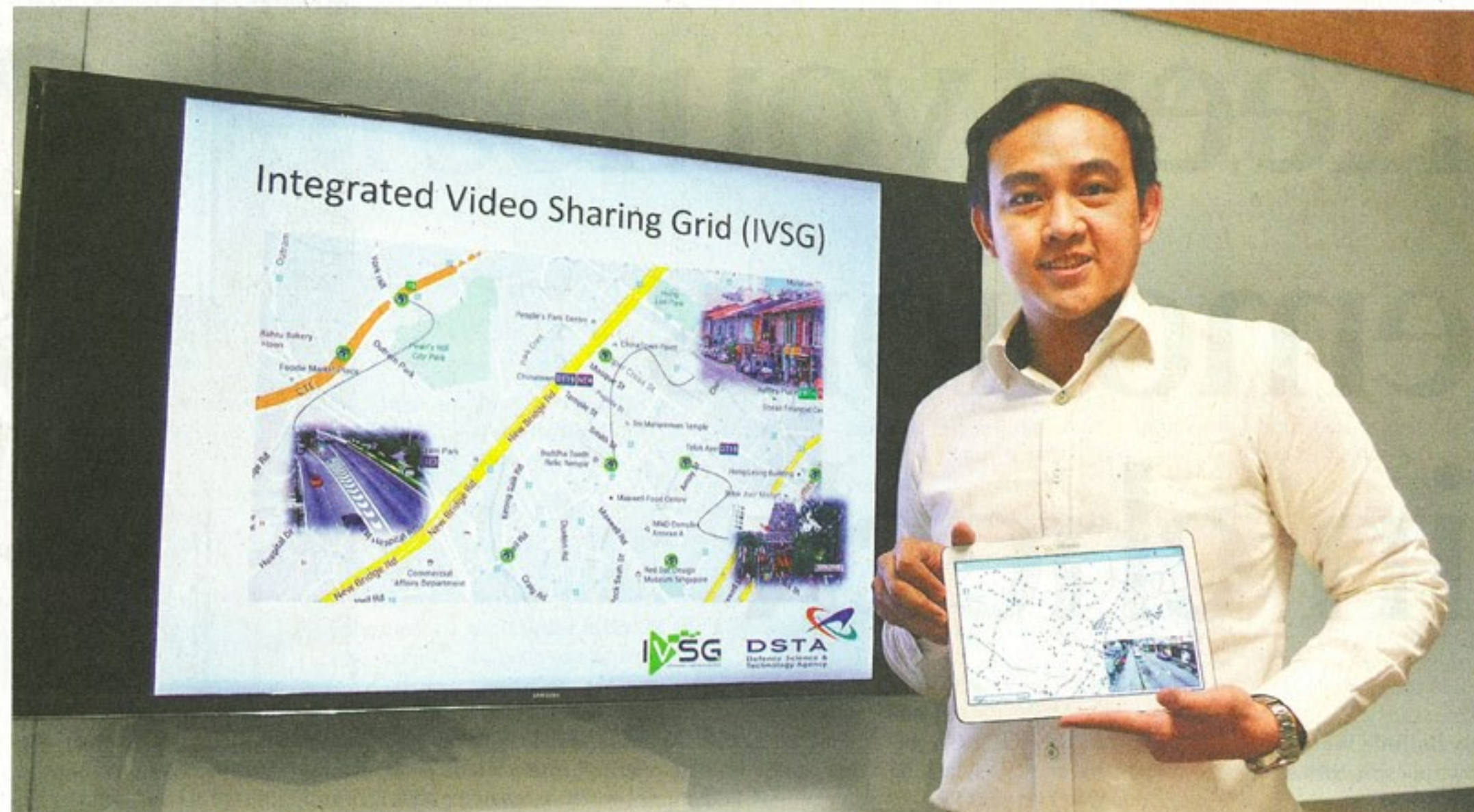
Mr Chan says DSTA is the right fit for him as it enables him to apply his engineering knowledge and contribute to Singapore's defence and security. PHOTO: DSTA

He explains: "For example, I learnt that it is more challenging for Singapore's traffic-light conditions to be intercepted for emergency purposes as we have more pedestrian crossings as compared to underpasses, which are common in Hong Kong. This causes wider safety concerns for us.

"ACES was designed to suit the urban geography of Singapore, and my trip to Hong Kong helped me to realise that a system must be designed in context."

A meaningful role

Mr Chan finds his career in DSTA fulfilling.

He says: "My supervisors nurture and guide me, which allows me to not only grow as a professional but also an individual."

As technology is constantly advancing, one major challenge he faces is keeping updated on the latest developments in the networked systems field as well as remaining innovative in developing C3 solutions.

He says: "As the work that we do is often multi-disciplinary, I also have to be constantly curious and open to picking up new skills and knowledge that are out of my comfort zone."

He feels grateful for his organisation's strong culture of collaborative learning and innovation.

At work, engineers are encouraged to experiment with technology and develop innovative solutions.

DSTA also conducts regular sharing sessions, which encourage its staff to learn from each other's work and expertise.

The insights and lessons shared are helpful in improving and crystallising ideas and solutions, says Mr Chan.

The organisation also places strong emphasis on career development through its Personalised Career Development Plan, which helps staff to chart individual career plans with their supervisors.

These take into consideration employees' aspirations, experiences and competencies, as well as the organisation's goals and requirements.

Through in-house milestone courses conducted by the DSTA Academy, Mr Chan also gets to deepen his technical competencies through a series of systems engineering and management courses, which have provided him with useful project management, systems thinking and risk management skills.

He says: "I look forward to each day at work as my job allows me to be at the forefront of technology.

"There is also a sense of fulfilment and pride knowing that my work contributes directly to the defence and national security of Singapore, and keeps our nation safe around the clock.

"This constantly motivates me to push the boundaries of innovation."