

Designing systems for soldiers

DSTA engineer Chan Xinyi helps to adapt commercial technology to military needs

by hazel tan

YOU are not likely to see Mr Chan Xinyi in combat gear, but the 31-year-old engineer at the Defence Science and Technology Agency (DSTA) is as comfortable around armoured vehicles and army camps as any soldier.

A member of DSTA's Land Systems Programme Centre, Mr Chan is part of a well-oiled team that helps to adapt commercial technology to military needs.

Armed with a mandate to be innovative in boosting the Singapore Armed Forces' (SAF) technological capabilities, Mr Chan works on projects that often take him beyond the confines of a regular office to army bases and the facilities of defence contractors, where he discusses potential solutions, performs engineering tests and collaborates on design reviews of military equipment.

All-rounded and versatile

"Work at DSTA is stimulating and never monotonous.

"I've had opportunities to work on armoured vehicles, military communications networks, sensors and many other cutting-edge technologies," says Mr Chan, who joined DSTA in 2007 after graduating with a Bachelor of Engineering (Computer Engineering) from Nanyang Technological University.

Mr Chan, who worked in numerous part-time jobs including as a bartender and a delivery man for a fast food restaurant during his undergraduate days, says he was drawn

to DSTA because of the opportunity to manage engineering projects.

He says: "I love how I can build technical knowledge and soft skills simultaneously while working at DSTA so that I may become an all-rounded and versatile individual."

He notes that at DSTA, people are encouraged to be innovative and to continually improve the solutions and capabilities they bring to SAF.

He adds: "It was appealing to put my knowledge to good use in strengthening Singapore's defence and enhancing our soldiers' training experience."

Supportive environment

For the father of three children aged between one and six, it is important that he works for an organisation that is both nurturing and understanding.

"I really appreciate how DSTA provides a supportive environment in both my professional and personal life. I have the flexibility to manage my projects' schedules and family commitments," he says.

His bosses and senior colleagues are generous in giving guidance too.

"They give us space to do what we need to do, and to learn from our mistakes. I've gained a lot of knowledge from on-the-job learning as well as in-house sharing sessions," he adds.

Integrating technology

The ability to integrate advanced technology into military systems is an important part of Singapore's defence strategy.

"Singapore is a small country in both size and population, and we need engineering as a force multiplier to defend our shores. With sound engineering, we can develop innovative solutions," says Mr Chan.

A recent project he was involved in – the upgrading of the command and control suite for SAF's Advanced Combat Man System (ACMS) – is an example of how engineering contributes to military preparedness.

The ACMS is a tactical Command and Control (C2) suite of equipment and software used by infantry soldiers to enhance tactical coordination and effectiveness during missions.

As project leader for the ACMS C2 software, Mr Chan worked with contractors to design the system, and conducted design reviews as well as trials with SAF to ensure that the ACMS works well and benefits the soldiers.

In 2012, he participated in Exercise Wallaby in Australia where the ACMS was deployed together with the Terrex Infantry Carrier Vehicles (ICV), armoured vehicles dedicated to troop transportation.

"We were there to assess if the ACMS could function well under operational conditions. These exercises were good opportunities to validate our systems and identify potential areas for improvement," he says.

Mr Chan, who used to serve as a combat engineer during national service, knows first-hand the "joys and pains of equipment usage".

"In designing systems for our NSmen, I put myself in their shoes and design something that I'd want to use myself," he says.

"I feel proud when our systems work the way we designed them to work. There is no greater joy than knowing that I've made a positive change for the current and future generations in the SAF.

"I'm also excited that my six-year-old son might benefit from my work if he joins the army while serving his national service."



Mr Chan loves how he can build technical knowledge and soft skills simultaneously in his job. PHOTO: DSTA

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– Mr Chan Xinyi, engineer, Land Systems Programme Centre, DSTA