

DSTA and NUS to partner local start-ups on developing new defence and security solutions



1 of 2 Defence Minister Ng Eng Hen speaking at the Defence Technology Prize Award Ceremony at DSO National Laboratories on Oct 30, 2018. ST PHOTO: CHONG JUN LIANG

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Tan Tam Mei 

SINGAPORE - A new collaboration space between the Defence Science and Technology Agency (DSTA) and the National University of Singapore (NUS) Enterprise will be set up to partner local start-ups to develop solutions for Singapore's defence and security.

The DSTA@71 lab, a physical space that will be set up at the JTC LaunchPad by the end of this year, is one of the ways the defence technology community is looking to hasten the pace of innovation, said Defence Minister Ng Eng Hen on Tuesday (Oct 30).

He was speaking at the annual Defence Technology Prize (DTP) award ceremony at the DSO National Laboratories at Science Park Drive, where he announced the new lab.

He also emphasised how strategic trust between the Ministry of Defence (Mindef), the Singapore Armed Forces (SAF) and the defence technology community has allowed the creation of new ideas and capabilities for Singapore's defence.

"You can tell that this strategic trust occurs when the SAF proactively offers its officers to be embedded into the DTC (defence technology community)... that they put people with you in your department, this is the epitome of strategic trust - because it is a marriage that produces offspring," he said.

It is this strategic trust that has allowed defence organisations to aim high, encouraging all defence and security partners to go even further, climb even higher, he added.

"And it is crucial if you are scaling peaks, as the SAF and the DTC are now asked to do. Our challenge to defend Singapore in the face of internal resource constraints as well as the complexity of external threats means that we must find new heights to ascend to fulfil our missions."

He added that strategic trust between the SAF and defence technology community is strengthened when parties deliver on their promises - something the latter has done "time and again".

It is also through the DTP that significant contributions to Singapore's defence are recognised, said Dr Ng, adding that the seven award recipients reflect the constant endeavour to scale new heights in partnership with the SAF.

The DTP was established in 1989 and is Mindef's most prestigious defence technology prize.

Among the prize winners is director of Temasek Laboratories@ Nanyang Technological University, Professor Gan Chee Lip, 44, who was recognised for his work with the lab, including his research on hardware Trojans.

Prof Gan leads a team that studies how to secure systems against malicious hardware modifications in defence networks. These capabilities are essential to ensure the truthworthiness of the hardware used in Singapore's defence systems.

With the increased use of electronics in defence capabilities, such as communications or radar systems, the threat of malicious hardware being embedded into systems cannot be ignored especially if manufacturing or fabrication of hardware is outsourced, said Prof Gan.

"Often we identify software vulnerabilities and these can be updated or patched. But the issue with Trojans embedded in hardware is that you can't patch it, you have to physically remove it," he said.

His team has developed techniques and software that can identify compromised hardware, even if it is a tiny chip embedded into a complex system.

"Software runs on hardware, so at the end of the day, hardware is a key part. This is especially important when used in defence systems, where high security, high integrity and high performance is needed," said Prof Gan.

Another individual awarded the DTP is director for DSO's Information Exploitation Programme, Dr Ng Gee Wah, 54, for his work in tracking and identifying maritime intrusions that has been operationalised in the SAF for surveillance systems.

Other projects that awardees were recognised for include the development of intelligent analytics and a fully unmanned Surface vessel.

Terming the awardees as "sherpas" who guide the SAF and Singapore to ascend greater heights, Dr Ng said: "We now operate in a rarefied atmosphere where few climbers operate.

"The SAF and the DTC must have strategic trust and work even more closely together if we are to scale more summits."

Correction note: An earlier version of the article misstated the name of Nanyang Technological University. We are sorry for the error.