



SPEECH

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SPEECH BY MINISTER FOR DEFENCE DR NG ENG HEN FOR THE DEFENCE TECHNOLOGY PRIZE 2021 ON 26 OCT 2021

My colleagues
Senior Ministers of State,
Friends and Colleagues
Senior officials,
Distinguished Guests,
Ladies and Gentlemen,

Good afternoon,

1. The Defence Technology Prize (DTP) award ceremony this year, shows that despite the ongoing pandemic, our scientists and engineers continue to keep their eye on the ball. They have not been distracted from the overall mission to keep Singapore safe and defences strong.
2. And I know that for each award, countless hours of work were put in and it is not as if you get an Eureka moment every other minute – these hours can be mundane. This afternoon, we take a bit of time to recognise our award winners which I'm sure the recipients will appreciate. But I suspect the best reward for every one of the recipients is that quiet satisfaction which comes from solving a difficult puzzle or proving an idea unthought off. That quiet and personal satisfaction is important because, as the Chief Defence Scientist rightly notes, the rest of Singapore and the general public will and may never know of your endeavours and successes in these classified projects. But your peers and colleagues do know. Please accept my sincere thanks and admiration for all that you do to protect Singapore.
3. This past year has thrown up unexpected challenges, which MINDEF and the SAF have responded to effectively and excelled. The outbreaks of infection here, as it did in all other countries,

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threatened to overwhelm the capacity of our healthcare system which is severely under pressure. This is a biological war, one which the biological agent constantly changes and challenges us.

4. So when MINDEF and the SAF were called to assist in national efforts, I am proud of the way we did it. Fully professional, task oriented, clear goals with key deliverables in mind, and an attitude which says “let’s get to work”. Whether it was to manage the outbreak in the migrant worker dormitories, perform contact tracing, develop diagnostic tests very early when the pandemic first broke out, run Covid-19 recovery facilities, or help MOH in their command and control systems – our people did not say, “this is not my job scope or problem”. Instead, MINDEF and SAF personnel owned the problem from day one and tackled it head on. The results speak for themselves – mission success and admiration for the capabilities of our people in MINDEF and the SAF.

5. So recently, when the number of daily cases surged past 3,500, and the highest it went was just short of 4,000 and threatened to go much higher because the doubling rate was one week, which means if you did not put a lid on it, it will jump from 4,000 to 8,000 in one week. No healthcare system can take that. The Multi-Ministry Task Force realised that most of them will be well - those infected - and that the Home Recovery Programme (HRP), which will be the mainstay of our response, started. But because of the surge, we could not cope. Similar to the situation when the outbreak in the migrant workers dormitories occurred last year, MINDEF and the SAF were asked to assist. Thankfully and with gratitude to those involved, the HRP has since been stabilised, with better command and control systems, smoother work processes, less slippage, more tight controls and linkages, but most importantly, infected residents who are on HRP report now they are being taken care of, and are being assured that they are being watched over and can get quick assistance if needed. Obviously it can be still improved and that is exactly what the SAF is doing, optimising each part of the process. Other government agencies and indeed Singaporeans, all recognise that the SAF has the ability to deal with complex problems like the migrant worker outbreak and HRP. They call on us when help is needed and I think that they recognise this and now they say that we cannot be Yue Fei or Mulan at the same time. We should fight for the external defence or internal but you should not be asked to do both. My point is no country can be prepared with the resources to deal with the COVID-19 pandemic. So the SAF and MINDEF were called upon and we recognise that this was a national mission. But this confidence and capabilities that others recognise in us reflect well on our ability to prosecute difficult missions when called upon and it is part of our ethos of the SAF, which is a significant strength.

6. When we had to at short notice, deploy and move evacuees from Qatar to Germany, we activated the A330 Multi-Role Tanker Transport (MRTT) and 70 strong Army and Airforce crew were activated within a day. They got up in the air and they only just achieved the Full Operational Capability ceremony in April this year and their readiness to be up in the air, hop to Qatar, move on to Ramstein Air Base in Germany all in a moment’s notice reflects the strong Ops-Tech collaboration. Our capabilities within MINDEF and the SAF were built on years of hard work and steady progress. The high standards of both communities, of the SAF and the Defence Technology Community (DTC) are synergistic. Each adds and challenges the other, and the result is that the sum of parts are greater than the whole.

7. I am also glad that despite the pandemic, DSTA successfully organised and hosted the third Singapore Defence Technology Summit recently. I interacted with some of the top officials and industry leaders from other countries. Invariably, they were impressed and found the Summit worthwhile to attend and useful. They were not just responding with pleasantries to me, and were genuine in their positive comments. When they say that it was useful to attend, and we must remember that each of them that we invited are experts in their own domain. So to have found it useful speaks well of the Summit. A few of them told me, that the sessions stimulated their thought processes and helped them think out of the box. I think that is a rare compliment for somebody who is at the top of the game. Just imagine a top neurosurgeon saying “I see, this is a different way to approach the problem”. For you to be able to mount that kind of summit speaks volumes. They gave top marks to the local organisers and moderators and they go back with the mindshare of the DTC increased and others wanting to build partnerships with us. I look forward to many more Summits. As I told the visitors, when we started the Summit, the challenge to the DTC was a simple one – we start and we assess in two to three summits. If it fails, it has been a useful experiment. Fortunately, it has not failed and succeeded quite well so you have to live with it and organise more summits.

8. The post-COVID world will bring new challenges globally, including to us in the security arena. I think that there will be impact on bread-and-butter issues – where and how our people work, how we train, how we communicate, and so on. For operations, the SAF has to expand its capabilities in the digital domain. Whether for administrative or operational purposes, I think that we will need to leverage technology to the maximum. But there are many problems to solve, and we have not enough people and limited resources, including time. As with most challenges, the problem and outcome definitions will focus our minds and efforts. When we do not have enough people and time, we have to decide and prioritise how we focus our minds and efforts – that is the question. I think if you can visualise the goal in our mind’s eye, it will help us all individually and collectively focus our energies and efforts. Let me give a few examples on what I mean to be able to visualise the goals in our minds’ eye. I give it by way of “we need or if onlys”. Let me give you a few examples and I am sure that you have your own to add, so let me start.

- a. We need safer buildings that can kill viruses and bacteria while we work.
- b. Second example. If only I can deal with classified work in a secure office near my home, it would make life easier and work more productive.
- c. If only training can be scaled up and effective through remote teaching, the SAF can train safely in any epidemic.
- d. We need to see who puts out false information on the net. Who influences them and who do they influence?
- e. We need a tool to grade any piece of information on the net real-time. It could be crowdsourced like Wikipedia, for its accuracy.
- f. We need real time guidance for minors who are very impressionable as they surf the net. Maybe even a warning alarm or kill switch. So you read about the recent example. Someone radicalised on the net, bought weapons on the net, all by himself. If you have a tool where you have a ‘blinking light’ that this is in-force and if he is

searching for a tool for weapons on the net, a kill switch. But of course, commercial companies are struggling with it and part of the sensationalism and echo chambers drive profits and they have to make that decision between profit and social responsibility.

9. I am sure each of you could add your own “we need and if onlys”, to the list. Actually, I have one more before I leave my list. I wish my devices and screens do not black out so often and I have to repeat giving my password. They should be able to recognise me instantly or weed out imposters. Every journey of innovation and discovery starts with these two preambles – what if and if only. Without it, there would be no visions or dreams. Our founding generation went through the Japanese occupation, went through subjugation and war and came out of that experiencing if only Singapore had its own military to defend itself – that was the visceral experience of the founding generation borne out of experiences that were very deep, many of them lost relatives, and I knew people from that generation who said to those who talk against the SAF, “we must have our own military”. Because in their context, without a military, we would be defenceless and be easily subjugated. If only and what if. A good and effective organisation promotes this process of people asking what if and if only. If none of your employees start the day asking what if and if only, you are in deep trouble. A good organisation promotes this process, harnesses the common passion, prioritises the projects, provides adequate and appropriate resources, and then trusts its people to achieve. I think that our capabilities today and that we have good organisations in MINDEF and the SAF, and the award recipients reflect these values. We have seen it on the video – what if we have better systems that are more responsive, what if we could have a better air defence systems, what if we could have submarines. These are people waking up thinking what if and if only, and achieving their dreams.

10. For the individual award recipients, Mr Loke Mun Kwong, for his work in sensors and electronic surveillance; and Mr Han Meow Kwang, who pioneered and built up ST Engineering’s solid propellant rocket motor design, development, and production.

11. For the team award – three recipients: the A330 MRTT Hangar Team who delivered the SAF’s first integrated facility for wide-body aircraft maintenance; the Sensor and Signal Processing for work in radio frequency and signal processing to expand the SAF’s capabilities against grey zone threats; and the Cybersecurity Team who developed advanced tools and techniques to defend against threats in the digital domain.

12. Appropriately, we are also recognising the DTC’s efforts in the nation’s fight against Covid-19. The Covid-19 Command and Control Systems Team that improved the C2 systems for the multi-ministry task forces; the Covid-19 Team that developed our direct PCR assays; and the MINDEF Forward Deployment Laboratory team. The latter two teams reduced the time and increased the output needed for mass testing.

13. Let me congratulate all the award winners today. I think that the Defence Technology Community has proven yourself, that you are a precious and vital resource for the nation. You are Singapore's secret and not-so-secret edge capability. Thank you for your dedication and expertise.

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