



# SPEECH

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## **SPEECH BY MINISTER FOR DEFENCE, DR NG ENG HEN, AT THE 2ND SINGAPORE DEFENCE TECHNOLOGY SUMMIT, ON 26 JUN 2019, 1900HRS, AT SHANGRI-LA HOTEL**

My colleague, Senior Minister of State Maliki,  
Distinguished guests,  
Ladies and gentlemen,

1. A warm welcome to all of you, to all participants to the second Singapore Defence Technology Summit. One feels a bit intimidated with the sheer brainpower in this auditorium. And I distinctively felt, just by sheer osmosis, my IQ rise as I stepped into the room.

### **DIALOGUE AND COOPERATION, ESPECIALLY IN DIFFICULT TIMES**

2. It's been barely a year since the inaugural summit was held and yet we meet under vastly different conditions. I think especially to the delegates of this conference that draw from leaders of defence sciences in Government, business and academia, it is clear that the technological space has become sharply contested, in part driven by US-China tensions. When the two countries with the largest economies and militaries compete, it is a given that all countries would be affected in some way or another. And I think it would not be far off the mark to conclude that a technology race has already started, especially around emerging technologies that will shape our collective futures; and for defence industries, to produce first, new disruptive weapons and platforms for strategic advantage, in all domains of air, land, sea, cyber and space.

3. This reality is now brought into sharper focus through recent events. But I know that many of you seated here are seasoned veterans who have witnessed the vicissitudes of political contests, and even more, the unpredictability of outcomes. Countries, especially

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rivals, will always have differences but there is no cognitive dissonance in meeting and sharing views, even among strategic competitors. During the height of the Cold War, many lines of communication between the US and the Soviet Union officials remained open. It was also amid that rivalry that the Anti-Ballistic Missile Treaty, the Strategic Arms Limitation Treaty, and the US-Soviet Incidents at Sea Agreement were signed. In fact, there was scientific cooperation between the United States (US) and the Soviet Union during the Cold War, with 11 inter-governmental agreements related to science and technology signed between 1972 and 1974.

4. And the fact that this Tech Summit continues under such circumstances can be celebrated by optimists and viewed cynically by pessimists alike. The good news is that despite the more contested technology environment, where secrets are to be closely guarded, we do have delegates from more countries – 23 this year compared to 17 last year. What Singapore and the organisers of this conference can do as hosts is to create a conducive environment to address challenges that confront our collective well-being, which we will have to address together despite our differences.

#### **ADDRESSING NEW VULNERABILITIES**

5. On the agenda therefore are common challenges. To name a few, the trade-offs between the increasing digitisation of daily lives through the Internet of Things and privacy and security; the ethical conundrums of Artificial Intelligence decision-making with man out of the loop; the impact of increasing automation on jobs that will affect militaries and defence companies; the rules that should govern cyber and outer space, with increasing traffic and the threat of kinetic fall-outs.

6. These problems are complex, and even more so the solutions with hard trade-offs. But strengthening legislation and pre-agreed OB markers will certainly form part of our toolbox to tackle these challenges. And I think here, it is important for leaders in defence technology to be involved in the process early, to have your views clarified and sharpened before they get caught up in the legislative and political machinations of individual countries.

#### **CONFRONTING NEW BATTLEFRONTS**

7. Tonight, I would also like to highlight another looming challenge that is less talked about arising from technological disruptions, but will have a significant impact on militaries globally. The Singapore Armed Forces (SAF) is, comparatively, a small military but already is changing because of this challenge. I am talking about the re-shaping of militaries as they will have to address both traditional missions to protect sovereignty but more increasingly so, transnational threats. Let me illustrate with specific examples.

8. Terror attacks put considerable strain on civilian and police resources that, even when fully mobilised, could not meet the surge requirements to deal with attacks at multiple

sites. So for example, the French military had to be mobilised following the 2015 terrorist attacks in Paris. Operation Sentinelle was set up – this was a military counter-terrorism operation aimed at protecting key domestic installations. New mission imperatives were given to the militaries to combat threats such as terrorism, with significant changes in organisational structure and resource allocation.

9. Just like terrorism, the threats arising from the cyberspace and the effects of climate change will similarly test the civilian resources of all countries. All of us here can easily envisage the mobilisation of forces within the militaries in such scenarios. Across all geographies, we are busy building up cyber capabilities to defend this terrain and protect the integrity of our systems, even against foreign interference during elections. In 2017, the Bundeswehr launched a new Cyber and Information Domain Service, comprising more than 13,000 personnel, larger than a division, tasked to protect and defend their critical networks and information systems. In the same year, they invested 1.6 billion euros on digitalisation and information technologies. All these represent a significant upscaling of Germany's cyber force and investment in their cyber as well as information capabilities. Others, like the US Department of Defense, have been given the mandate to “forward position” and even respond with cyber counter-attacks against aggressors. Recently, the US' reaction to a kinetic event, in this case the downing of their drone, was reportedly met with a cyber response. Militaries are being re-shaped by the threats and opportunities in the cyber domain, and yet the rules of engagement remain vague in this new battlefield. There is an urgent need for a rules-based order that will prevent serious disruptions and even the loss of lives, to protect the functioning of society, whether it is in transport or financial systems, hospitals, so on and so forth, especially when the cyber arena will become more contested.

10. There is another challenge that will confront us all – a colossal one – arising from the effects of climate change, where the worst-case scenarios still need to be addressed. Due to their scale, these events if they occur, with the powerful forces of nature, will overwhelm us all. Not all consequences can be linearly extrapolated for either specific outcomes or even location. For example, we can foresee that the flooding of coastal communities will affect migration and competition for land, food and water – but where and when these will occur, remains uncertain. Recently, my New Zealand counterpart, Defence Minister, shared to other colleagues during the Shangri-La Dialogue that how, for the first time ever, New Zealand's Navy patrolling the previously calm seas of the Southern Oceans in the Antarctic are now experiencing 24 metre-high waves! Apart from the sea states, their ships have encountered massive ice blocks which they were never designed to deal with. What happens at either pole can affect communities, even cities thousands of kilometres away; traditional fishing grounds have disappeared and with them, the livelihoods of communities. The “butterfly-effect” can be visibly proven.

11. Our militaries today are not geared to respond optimally, if called upon to address these newer, non-conventional challenges. Our organisations and resources are still optimised and allocated towards traditional, conventional threats. But some militaries are

already responding to these new demands, even to re-organise and build new capabilities and technologies. The US Department of Defense has plans to increase their operational readiness given the effects of climate change. In recognition of the need to ensure environmental sustainability of military bases, the United Kingdom built a biogas plant to power its first green military airbase – a Royal Air Force base in Marham. Globally, senior military leaders have gathered to form the International Military Council on Climate and Security to look into how climate change could have security implications. Whatever the changes required, one aspect is clear – our militaries will have to do more, sometimes with resource constraints. There will have to be closer interactions between the operational units and the defence technology community, such as yourselves, to optimise resources and improve responsiveness.

12. For Singapore, MINDEF and the SAF, this “Ops-Tech” integration is key, where scientists, engineers and military operators start ab-initio, to first define the problem and desired outcomes together before embarking on the design and implementation of the concepts of operations and the platforms required. This applies to cyber operations as well, where the SAF will sharpen its focus and mission outcomes, and develop capabilities accordingly.

## **CONCLUSION**

13. The militaries that will serve this generation will have to deal with traditional rivalries, as well as expanded challenges related to terrorism, cyberspace, outer space, and the forces of nature. Increasingly, we will need the power of technology to amplify our efforts and improve our effectiveness to deal with such challenges. I wish all of you as delegates a productive and constructive discourse during this Tech Summit. Let me thank all speakers, delegates and sponsors for your presence and support for this Tech Summit. I look forward to meeting you individually, and wish everyone here an enjoyable dinner and fruitful summit ahead. Thank you very much.

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