

SINGAPORE DEFENCE TECHNOLOGY SUMMIT

22-24 March 2023

DIGITAL AND DUAL-USE TECHNOLOGIES OPPORTUNITIES AND THREATS



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OPENING ADDRESS

BY **MR LAWRENCE WONG**
Deputy Prime Minister and Minister for Finance (Singapore)



Technology Landscape Has Changed

“...Commercial enterprises are innovating at a rapid pace, and are developing high-quality products at the cutting edge, including in areas such as artificial intelligence (AI), robotics, digital communications and bio-technology...It is no surprise that more commercial technologies are finding applications in the military realm...Already today, commercial technologies are being used in unexpected and asymmetric ways on the battlefield...All these have blurred the lines separating traditional notions of civilian and military technologies and expanded the types of technologies that are considered “dual-use”.”

Opportunities Presented by Digital and Dual-use Technologies

“Defence establishments will have to take a hard look at how to adapt and integrate commercial technologies for their defence and security needs. And to do this successfully, they must relook how they design, develop and procure defence systems and platforms...Failure to do so would mean missing out on new capabilities, or worse, adopting solutions that quickly become obsolete the moment they are rolled out. These moves will not be easy. They involve not just organisational changes, but also cultural changes too. But they are necessary for the defence sector to fully benefit from digital and dual-use technologies.”

Adapting to New Realities

“...As commercial enterprises continue to make technology breakthroughs across various fields...how can we guide their development to ensure these new technologies contribute to our collective security, rather than undermine it?...One immediate issue is how we deal with the rapidly advancing and game-changing technology of AI... There are no easy answers. But what is clear is that we cannot leave commercial enterprises to answer these questions alone. Instead, governments, industry, and civil society must all work together to set the international principles, norms and guidelines to guide the development of AI without holding back the innovation that is necessary to advance humanity.”

Global Cooperation Will be Needed

“...As new technologies become more pervasive, how can we deal with the expanding range of asymmetric threats they have unleashed? This is a particularly pressing issue in cyberspace, where a growing number of malicious actors have sprung up to exploit vulnerabilities inherent in computer systems, many of whom are capable of launching “best-in-class” cyberattacks...These emerging cyber threats are global in nature, and if we want to mount effective responses and stay ahead of these adversaries, global cooperation will be needed.”

WELCOME REMARKS

BY **MR ZAQY MOHAMAD**
Senior Minister of State for Defence (Singapore)



Key Shifts in Today's Technological Landscape

“Leaders worldwide need to take advantage of the opportunities from technological innovations, while mitigating the risks that come with them. Cutting-edge and innovative technology continue to shape conflict, and affect the balance of power between states. Digital and dual-use technologies, in particular, are undergoing a continued revolution, characterised by the rapid development and widespread availability of new technologies that have civilian or military applications. This includes technologies such as artificial intelligence, robotics, and nanotechnology, which continually transform various aspects of society, including warfare.”

Deployment of Digital and Dual-use Technology in Modern Warfare

“Events in the Russia-Ukraine war have highlighted how digital and dual-use technology can be deployed in modern warfare. Online is said to be the new frontline. During the initial stages of the conflict, Ukrainian President Zelensky used social media to broadcast nightly addresses to the Ukrainian people, providing situational updates and appealing for support. Using Telegram chatbots, hundreds of thousands of civilians shared videos, locations of troop movements and fighting, flooding the public domain with raw open-source intelligence, and real-time information of dangerous areas. However, the information domain can also easily be corrupted by fake news sources or orchestrated information campaigns.”

Opportunities in The Digital and Dual-use Space

“The war has also highlighted how technology with everyday civilian uses could be made “dual-use” with some adaptation and application – often at low cost – to military objectives...In more destructive applications, we have seen how the Ukrainians developed unmanned surface vessels primarily based on commercial-off-the-shelf components, which successfully inflicted damage on several Russian naval vessels in the port of Sevastopol...It is not unimaginable that even terrorists would be drawing lessons from the conflict, and they, similarly, can build low-cost systems to threaten our shared security. The implications of these shifts in technology and changes in the nature of warfare are no small matter, especially for all of us who have an interest in making the world a safer place.”

Addressing New Challenges

“In response to these myriad challenges, each of us will have to come up with our own strategies and approaches. But we will also have to develop partnerships...Threats in the digital domain transcend physical boundaries, and collaboration is imperative to identify and tackle such threats.”

MAJOR GENERAL (RETIRED) VOLODYMYR HAVRYLOV, DEPUTY MINISTER OF DEFENSE AND NATIONAL ARMAMENTS DIRECTOR (UKRAINE)

Major General (Retired) (MG(Ret)) Havrylov shared his experience in the ongoing Russia-Ukraine conflict. He emphasised the importance of using creativity and innovation when deploying existing capabilities, such as fitting in-service explosives on commercial drones, and ensuring proper training for soldiers. He observed that the ongoing conflict was a war of drones, and the key to victory was using them in new and more effective ways. He added that command and control was also vital, and emphasised the need to disseminate integrated sensor data to the last soldier on the ground. MG(Ret) Havrylov also shared that it was crucial to select and train the right people as the use of modern equipment in harsh environments require skilled and motivated operators. He added that Ukraine had accelerated their pace of innovation, and streamlined their processes to harness bottom-up ideas quickly, with tech solutioning lead time shortened from one year to within four to five weeks. Emphasising the importance of both technology and people, he concluded that *“without people, technology is useless; without technology, people are weak”*.



HONORABLE FRANK KENDALL III, SECRETARY OF THE U.S. AIR FORCE (USA)



Honorable Kendall kicked off the session by sharing lessons learnt from recent conflicts, including the need for active supply chain management, expanding digital partnerships and leveraging autonomy as a core enabling technology. He said that changes would be required for the defence ecosystem to tap commercial products and dual-use technologies so that these could be fielded more seamlessly. He emphasised the importance of embracing new technologies to explore non-traditional concepts of operations. Honorable Kendall also added that the greatest strength was from establishing strong relationships with partners. Trust was needed

among countries and collaborators to achieve common goals, and conferences such as the Tech Summit enabled this. He urged the audience to think about the greatest challenges we are facing today, such as climate change, global pandemic and nuclear conflict, and what their potential solutions could be.

MR KUSTI SALM, PERMANENT SECRETARY, MINISTRY OF DEFENCE (ESTONIA)

Mr Salm highlighted three key tech lessons learnt – defence readiness, defence investment, and people matter. On defence readiness, he shared that Russia fired more rounds a day than an entire Europe could produce in a month. To that end, governments need to place more emphasis on production capacity in order to meet defence readiness. For defence investments, he believed that these were necessary to spur innovation. He noted that Singapore’s steady investments in defence over the years was a good model, and shared that Estonia had recently achieved this. On people, he shared that Estonia subscribed to conscription, similar to Singapore. As such, this necessitated the need to engage citizens to be highly committed to defence, and establish an enabling environment with supportive organisations and families.



HONORABLE MATTEO PEREGO DI CREMNAGO, UNDERSECRETARY FOR DEFENCE (ITALY)



Honorable Peregò di Cremona opened the session with a discussion on how digital and dual-use technologies has enabled defence capabilities to be cheaper while being more technologically advanced. He also cautioned that the proliferation of digital technologies has simultaneously exposed vulnerabilities in critical infrastructure. He emphasised Italy’s commitment to maintaining international peace and upholding international laws. Honorable Peregò di Cremona also added that Italy was keen to collaborate with

partners, allies and friends on these common issues. He concluded the session by highlighting the Tech Summit as an important platform for the international community to discuss issues and exchange insights.

FIRESIDE CHATS

GENERAL PAUL M. NAKASONE, UNITED STATES ARMY, COMMANDER, UNITED STATES CYBER COMMAND, DIRECTOR, NATIONAL SECURITY AGENCY / CHIEF, CENTRAL SECURITY SERVICE (USA)



Highlighting the importance of talent, General Nakasone shared that the National Security Agency (NSA) and the United States Cyber Command planned to hire 3,000 and 850 people respectively this year. To do so, a strong narrative of “service to the country” was vital. He added that governments should accept that talents would leave for the private sector and the focus should be on mechanisms to make it easy for them to return and contribute should they choose to.

On key lessons learnt from the Russia-Ukraine conflict, General Nakasone stressed the importance of strong partnerships with foreign nations and the private

sector, as well as the innovative use of technology and tactics. He emphasised that one of the key factors to scaling technologies was to partner with commercial companies, and the NSA has been doing just that via its Cybersecurity Collaboration Center. To overcome the concern of sharing sensitive data with commercial companies, General Nakasone cited an example of how the NSA works with commercial companies to publish unclassified cybersecurity advisories. He also added that militaries should avoid over-classifying their data.

MR BILL MCDERMOTT, PRESIDENT AND CHIEF EXECUTIVE OFFICER, SERVICENOW (USA)

The topic on digital transformation was the key focus during the fireside chat with Mr McDermott. He opined that organisations should move away from standalone point solutions to platforms that support users from start to finish. This was highly relevant to government and military users as they had to make important decisions in real time. He added that in the current macro-environment which was characterised by supply chain issues, tightening monetary policies, risk of digital threats, and continual changes in technological landscape, the only way forward was to digitally transform the way businesses run. Mr McDermott shared that leadership was key to overcome challenges derived from driving digital transformations. He added that leaders need to stay cool, care for their people, and bring out the best in them. To stay up to date on technology developments, he shared that he had to learn from his engineers with shared visions on technology applications, as well as his customers who perceived their future needs. He wrapped up the session with an advice to leaders, asking them to think about the legacy they can leave behind.



PUSHING THE ENVELOPE OF TECH



Mr Sean Gourley, Founder and Chief Executive Officer, Primer (USA)

Tech Talk

Mr Gourley highlighted the concept of an offset strategy, how nuclear technology as the first, and stealth and precision technology as the second, both enabled its adopters to achieve a massive leap in military capabilities that rendered its opponents non-competitive.

With artificial intelligence (AI) as the third offset strategy, he shared how AI applications in autonomous drone navigation and deepfake generation in information operations have already transformed military tactics and capabilities. He added that the current Russia-Ukraine conflict did not see the heavy use of this third offset because those two nations were not strong in AI, as opposed to a conflict between USA and China. With this, Mr Gourley compared USA and China's AI capabilities in four areas: algorithms, data and labelling, computation power, and deployment, and concluded that the USA-China AI contestation

was tight and this competition would define the geopolitical landscape in the years to come.

Tech Demo

During the Tech Demo: Road to the Metaverse, Mr Carpenter shared that the digital twin was the heart of the industrial metaverse. He also touched on the five levels of the Digital Twin Maturity Model and demonstrated examples for each. He concluded that digital twins would be the key enablers for smart cities, and the Digital Twin Maturity Model would be useful in helping governments track their development progress.



Mr Callan Carpenter, Vice President, Digital Twin Solutions, Unity Technologies (USA)

Tech Showcase

A technology showcase comprising 14 exhibitors was set up to feature the innovative use of emerging technologies across a myriad of applications and developments, including AI and edge computing.





Moderator (Third from left):

Dr Sean McFate, Professor of Strategy, Georgetown University and National Defense University (USA)

Speakers (From left):

- **Mr David Spirk**, Senior Counselor, Palantir Technologies (USA)
- **BG(Ret) Dr Daniel Gold**, Head, Directorate of Defense Research and Development, Ministry of Defense (Israel)
- **Vice Admiral Arie Jan de Waard**, National Armaments Director and Director, Defence Material Organisation (Netherlands)
- **Dr Marjorie Vanbaelinghem**, Director, Institute for Strategic Research of the Ministry of Armed Forces (France)
- **LG Michael Vetter**, Director General Cyber / IT and Chief Information Officer, German Federal Ministry of Defence (Germany)

Rapid Pace of Development

The plenary kicked off with the agreement that the use of open-source technologies was a matter of “not if, but how”. Given the rapid pace of development in open-source technologies, the plenary cited commercial cloud as an example, where governments would benefit from the rapid developments in cloud-based services driven by the commercial sector. Dr Vanbaelinghem added that governments and militaries should avoid over specification of requirements and be more agile in inserting new technologies readily. LG Vetter also advocated the use of more open standards and architecture.

The Need to Tackle Bureaucracy

In view of the rapid pace of technology developments led by the commercial sector, Vice Admiral de Waard said that defence procurement processes needed to be streamlined. On processes, Mr Spirk said that

budgetary processes were the main roadblocks. To Dr McFate’s remark on how Israel had done exceptionally well in this aspect, BG(Ret) Gold elaborated on a few key success factors, which included (i) actively measuring and removing processes (ii) being outcome-oriented to give vendors the freedom to innovate and provide solutions and (iii) being comfortable with trialling non-mature systems in the field, as part of an agile development cycle.

Use of Open-Source Intelligence

The plenary cited the effective use of open-source information for intelligence in the ongoing Russia-Ukraine conflict. They also cautioned on the potential vulnerabilities such as misinformation and disinformation, especially through social media platforms. On adoption of open-source models and data, Mr Spirk warned about bad data from bad actors, as well as data irrelevancy and outdatedness.

BG(Ret) Tarien opened the panel with a sharing on how Estonia was known for its e-governance, and had been conducting elections via the internet since 2005. For the first time, there were more people voting electronically than by paper in 2023.

Riding the Digital Wave

BG Lee shared how militaries could ride the digital wave through integrating technology with operations, establishing partnerships with industry agencies, and levelling up the digital tech quotient of people. He emphasised that militaries would still need to make difficult decisions such as reaping the benefits of leveraging commercial cloud vis-à-vis increased risk in exposure of sensitive data. Dr Seo agreed and added that militaries had to accelerate digitalisation or risk being left behind. On partnering start-ups, Mr Weizenegger shared that apart from funding, start-ups required closer partnerships and interactions with governments for them to tease out military requirements and work towards better product-market fit. Ms Tretikov posited the need to invest in resources

to help people who are less digital-savvy so as to not leave behind any portion of the population. BG Lee added that culture changes would be required to attract and retain the technologist archetype, which was crucial for enabling technology possibilities for the military.

Obstacles to Digitalisation

Mr Allen shared that some people preferred the status quo and not embrace technology. For others, factors impeding digitalisation included mistrust in digital technology stemming from associated cyberattack risks like phishing and malware. Hence, trust between people and its government was crucial. On digitalisation efforts incorporating artificial intelligence, Prof Hebert highlighted the importance of ensuring robust performance evaluation. He explained that developers might not have full context of the operational problem or underlying limitations of their models or data. Therefore, close interaction with operational users and validated data sources are essential to avoid disastrous outcomes.



Moderator (Fourth from left):

BG(Ret) Jaak Tarien, Vice President of Sales and Business Development, Cybernetica AS (Estonia)

Speakers (From left):

- **Dr Youngwoo Seo**, Executive Vice President, Hanwha Aerospace (Republic of Korea)
- **Mr James Allen**, Executive Vice President, Booz Allen Hamilton (USA)
- **BG Lee Yi-Jin**, Chief of Digital and Intelligence Service / Director Military Intelligence, Singapore Armed Forces (Singapore)
- **Ms Lila Tretikov**, Corporate Vice President and Deputy Chief Technology Officer, Microsoft Corporation (USA)
- **Prof Martial Hebert**, Dean and University Professor, School of Computer Science, Carnegie Mellon University (USA)
- **Mr Sven Weizenegger**, Head of Bundeswehr Cyber Innovation Hub (Germany)

Building a Supply Chain

Citing the production capacity imbalance between Russia and Ukraine in artillery rounds, Dr Raska opened the session asserting that the party who had access and control over supply chains has a greater chance of winning the war. LG(Armament) Diaz de Tuesta echoed Dr Raska’s view and added that there was a need to keep a viable production rate during peacetime and ensure a smooth transition to maximise production capacity during conflicts.

Forging Trust and Building Partnerships

The plenary agreed that forging trust and building partnerships remained key in securing the defence supply chain. LG(Armament) Diaz de Tuesta shared that governments and companies should make updated supply chain data available to each other. Dr Schoellhorn added that there was greater need for companies to be more transparent so that they could work together to find common workable solutions.

In response, Mr Johnson observed that industries would need to be ecosystem-oriented to address supply chain issues. Dr Martin pointed out that while companies could be good at mitigating their own risks, geopolitical-related risks might not be well understood and managed. He added that supply chains had become very complex and brittle as the interests of individual companies might not be aligned with governments. He stressed the importance of considering the collective requirements instead of only focusing on individual requirements.

Addressing Supply Chain Challenges

Mr Kennedy-White recommended organisations to assess their supply chain dependencies and apply the “what-if” methodology. He added that single-source dependencies might not be easy to identify, especially if they lay upstream in the supply chain. He commented that there was also a paradigm shift for companies to help their suppliers because of COVID-19.



Moderator (Third from left):

Dr Michael Raska, Assistant Professor and Coordinator for Military Transformation Programme, S. Rajaratnam School of International Studies (Singapore)

Speakers (From left):

- **Mr Chris Johnson**, Senior Vice President, Nokia Enterprise (UK)
- **LG(Armament) Gaël Diaz de Tuesta**, Director International Development Directorate, Directorate General of Armaments (France)
- **Mr Josh Kennedy-White**, Senior Advisor, Interos Inc (USA)
- **Dr Michael Schoellhorn**, Chief Executive Officer, Airbus Defence and Space (Germany)
- **Dr Bradley Martin**, Director, RAND National Security Supply Chain Institute and Senior Policy Researcher, RAND Corporation (USA)



Moderator (Third from left):

Mr Peter Ho, Executive Chairman, HOPE Technik (Singapore)

Speakers (From left):

- **Dr Axel Scheibel**, Management Board Member, Krauss-Maffei Wegmann GmbH & Co. KG (Germany)
- **Mr Mike Stone**, Chief Executive Officer, FitzRoy Stone Enterprises, and Ex-Managing Partner, Global Government, IBM (UK)
- **IGA Dominique Luzeaux**, Director Defence Digital Agency, Directorate General of Armaments (France)
- **Dr Todd Citron**, Chief Technology Officer, The Boeing Company (USA)
- **Mr Kuldar Väärsi**, Founder and Chief Executive Officer, Milrem Robotics (Estonia)

Mr Ho opened the panel by seeking views on the specific technological gaps and laggards that stand between digitalisation for the warfighter, and effective operational transition.

Human-centric Design

Human-centric design was a recurrent theme, with the panel agreeing that deploying digital technology alone does not guarantee mission impact if the warfighter is not able or willing to use the technology. Dr Scheibel mentioned that it was crucial to understand operational gaps and translate these into concrete requirements for technology solutions. He emphasised that soldiers on the battlefield were trained combatants rather than engineers or scientists, and that technology has to be deliberately designed with these archetypes in mind for these combatants to effectively accomplish their missions. Dr Citron added that while digitalisation was generally beneficial, human factors engineering and designing with the operator’s emotional state in mind is vital to avoid inflicting information overload on the warfighter.

Future Warfare

Mr Väärsi shared that while warfighters would remain the same, technology would change how they fight. At the tactical level, robotics would reduce the physical

and cognitive load of soldiers. At the operational level, robotics would support different tactics such as autonomous navigation capabilities. At the strategic level, the balance in procurement of old and new technologies would enable more firepower and better fighting capability for the same amount of money. Mr Stone replied that while there would be more robotic elements in the future battlefield, there would still be human-in-the-loop, and cited an example of how artificial intelligence could augment human decision making. Responding to the discussion, IGA Luzeaux shared that while the focus was on digitalisation for tactical platforms and warfighters, energy solutions that are critical in powering digital solutions are often overlooked.

Technology Outpacing Adoption

Mr Stone recounted how the 3G-to-4G transition did not receive public appreciation initially until consumer apps like Instagram, which leveraged 4G’s higher bandwidth capabilities, were released. Similarly, nascent technology needed to be put in the hands of soldiers for new capabilities and applications to be unlocked. Dr Citron added that rapid technological advancements were outpacing the military’s ability to understand capabilities, hence it was important to design technology that can accommodate evolving usage patterns.

SUMMARY PLENARY

NEW PARTNERSHIPS IN THE DIGITAL DEFENCE ECOSYSTEM



Moderator (Third from left):

Mr Marcel 'Otto' Yon, Partner and Founder, innovation@scale and Freedom Fund (Germany)

Speakers (From left):

- **Prof Deeph Chana**, Co-Director, Institute for Security Science and Technology, Imperial College London (UK)
- **Hon. Dana Deasy**, Former Chief Information Officer, US Department of Defense (USA)
- **Prof Henric Johnson**, Global Head of Science & Innovation, Business Sweden (Sweden)
- **Dr Ee-Eul Kim**, President and Chief Executive Officer, Satrec Initiative (Republic of Korea)
- **Dr Dale Lambert**, Chief of Information Sciences Division, Defence Science and Technology Group, Department of Defence (Australia)

Commercial Sector vs Defence Industry

Hon. Deasy began by sharing his experience of transiting from the commercial sector to the government defence sector. He touched on the key differences and shared that doing well in the commercial sector did not always translate to the same success in the defence sector. He explained that the traditional defence industry was based on building hardware like ships and tanks which would take a long time to field, unlike software deployment which moved at a much faster speed. He also discussed two key factors of being successful in the defence sector – (1) understanding the intricacies of the defence budget cycle, and (2) knowing who the true decision makers were. Dr Lambert opined that traditional planning processes in the defence sector would function well in a stable environment, but these were clearly inadequate in current times.

Fostering Collaboration

Hon. Deasy shared that the US Department of Defense (DoD) was good at dictating requirements and hand-holding contractors to deliver traditional capabilities. However, this model, which had worked well in the past, was less relevant today because the commercial sector is leading technology advances. In fact, companies would now have to hand-hold the DoD instead. Dr Kim added that collaboration between governments and industries could also go beyond 'products' to include data and information sharing. Noting that small companies would typically not be able to survive because of long procurement

processes, Prof Johnson said that more support could be provided at the early phase for these young companies. Prof Chana stressed the need to take action and this could be fostered through a change in culture in the defence sector to embrace the concept of experimentation and develop skills in an agile way so that new ideas and technologies could be incorporated.

Attracting and Retaining Talent

On how the defence sector could attract and retain talent, Prof Johnson emphasised the need to break barriers between the defence and commercial sectors to enable mobility for developing talent. Hon. Deasy opined that the defence sector did not do a good job in providing the right conversations and recruiting the right people. He suggested that by shaping the right narratives, people from the private sector could be convinced. Prof Chana agreed and added that people were more mission oriented these days and interested in tackling global and difficult challenges; such narratives could be better phrased to engage talent. However, he also added that some of these talents might be turned off by their perception of the long and bureaucratic processes within the defence sector. Mr Yon agreed and said that minor details mattered, citing the example of a year-long hiring process, which the best talents would not tolerate. He shared that when he visited three different innovation units in Germany, all of which mentioned the number 80 – where for every 20 units of actual work, these start-ups and innovation teams had to dedicate 80 units to wrangle with the bureaucratic "beast".

SIGNING OF AGREEMENTS

A record number of collaborations – with more than nine partners from the military, academia and commercial companies – was established on the sidelines to harness the latest digital technologies for the development of Singapore's defence capabilities.



SITE VISITS

Apart from the main programme, international thought leaders, tech influencers and participants were also given the opportunity to visit several key facilities to gain first-hand insights into the exciting initiatives that are shaping Singapore's development. These included the Singapore City Gallery, Singtel FutureNow Innovation Centre and ST Engineering InnoSuite.



NETWORKING



Beyond the dynamic and stimulating discussions, the Tech Summit served as a nexus for greater collaboration and partnerships. Various meetings were arranged and conducted on the sidelines, where defence tech leaders and experts from government, industry and academia shared their perspectives on emerging trends in the security landscape.

Additionally, Deputy Prime Minister and Minister for Finance (Singapore) Mr Lawrence Wong and Minister for Defence (Singapore) Dr Ng Eng Hen hosted a networking session for some speakers where they conferred on thought-provoking ideas and challenges for the future.



STUDENT ENGAGEMENT

To foster greater awareness of the importance of defence tech, various programmes – including an artificial intelligence and machine learning workshop and competition, and a cyber hackathon – were arranged for close to 200 students. Apart from the plenary sessions, these bright young minds were also given the opportunity to interact up close with summit speakers Mr Sean Gourley, Founder and Chief Executive Officer of Primer, and Mr Peter Ho, Executive Chairman of HOPE Technik, during engagement sessions.



TECH SUMMIT IN THE MEDIA AND ON SOCIAL MEDIA

Since its culmination, the summit and its related activities received wide coverage on multiple international media platforms. Over 280 posts were also shared on various social media platforms.

A1 | THE BIG STORY
DPM Wong: Military has to work with companies to tap latest tech
 Govts will have to guide development of technologies for collective security, he says
 Singaporean official highlights impact of technology evolution on security

DEFENCE INDUSTRY EUROPE
DSTA and Saab to collaborate on the development of next-generation combat vessels

Bloomberg
DSTA AND LOCKHEED MARTIN TO COLLABORATE ON DATA ANALYTICS AND WORKFLOW AUTOMATION

Army Technology
Thales and DSTA sign master agreement for SAF's services capability

国防科技局扩大合作 应对未来威胁

Singapore's Defence Science and Technology Agency (DSTA) and Sweden's Saab have signed a Memorandum of Understanding (MOU) on the sidelines of the Singapore Defence Technology Summit on 22 March 2023.

Singapore, March 27, 2023 (PRNewswire) – Singapore's Defence Science and Technology Agency (DSTA) and global security and aerospace company, Lockheed Martin have signed a collaboration agreement that will pave the way for joint efforts in exploring data analytics and workflow automation that enable mission readiness.

Singapore's Defence Science and Technology Agency (DSTA) and Sweden's Saab have signed a Memorandum of Understanding (MOU) on the sidelines of the Singapore Defence Technology Summit on 22 March 2023.

Established on the sidelines of the Singapore Defence Technology Summit 2023, the partnership will see DSTA and Lockheed Martin undertake technology exchange and collaboration in developing transformative digital solutions to optimise the maintenance, training effectiveness, and availability of platforms such as F-16 operated by the RSAF. These include the implementation of a data pipe to facilitate the exchange of relevant data and information to identify trends and insights on aircraft performance.

Ng Eng Hen · 74 March · 48
 Top meet week – the Singapore Defence Technology Summit. Modern militaries operate on technology that at the most basic level, are aimed to defend systems. Leaders from government, industry, academia and think tanks will gather to discuss the implications and impact of dual-use technologies.

Lawrence Wong · 74 March · 48
 Welcomed participants from around the world for the Singapore Defence Technology Summit to discuss tech trends and security. Tech is ever-evolving. And many areas of tech have both civilian and defence applications. Tech like Artificial Intelligence can be used as a tool to help humanity; it can also be used as a lethal weapon in war.

Mr Zengy Mohamed · 74 March · 48
 Mr Zengy Mohamed, Senior Minister of State for Defence, Singapore, speaking at the summit.

Bill McDermodt · 74 March · 48
 DSTA (DSTA) was great to be with General Paul M. Nakasone, United States Cyber Command, Director, National Security Agency / Chief, Central Security Service, on digital and dual-use technologies – opportunities and threats.



TESTIMONIALS

“I’m very impressed by the level of people who are attending this conference. We were able to share a lot of things with various leaders in defence from various countries. It’s really an event where you should be.”

IGA Dominique Luzeaux

Director Defence Digital Agency, Directorate General of Armaments (France)



“Excellent – the convening power of this conference. People have been brought together from all over the world, from different backgrounds and perspectives; and the conversations have been very high-level, very rich.”

Prof Deeph Chana

Co-Director, Institute for Security Science and Technology, Imperial College London (UK)



“I’m really happy that this conference is here. We’re in a very important time in history, both from what’s happening with science and technology, but also what’s happening with geopolitics. I think we needed this yesterday, so I’m glad it’s here.”

Ms Lila Tretikov

Corporate Vice President and Deputy Chief Technology Officer, Microsoft Corporation (USA)



“It was worthwhile to come here, share the thoughts, and see and hear the different perspectives. I have to say that it [the Tech Summit] was very well organised. It was an honour and a pleasure to be here, and I congratulate [DSTA] for that.”

Dr Thomas Rothacher

Director Science and Technology / Deputy National Armaments Director, Bundesamt für Rüstung armasuisse (Switzerland)



“We had very good discussions, exchanged lots of ideas, and I got pretty good insights from the Tech Summit. It was very professional and a job well done – a big hand of applause for DSTA.”

Dr Ee-Eul Kim

President and Chief Executive Officer, Satrec Initiative (Republic of Korea)



“Thank you to DSTA for bringing up a really top of the class international event across every level. Discussions have been a lot more linear than ever before. There’s greater engagement on all sides...to understand each other and exchange viewpoints on how they see the future.”

Dr Michael Raska

Assistant Professor and Coordinator for Military Transformation Programme, S. Rajaratnam School of International Studies (Singapore)



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