SPEECH BY MR S ISWARAN
MINISTER FOR TRADE AND INDUSTRY (INDUSTRY)
AT THE JTC AEROSPACE NETWORKING NIGHT AND
LAUNCH OF AEROSPACE INDUSTRY TRANSFORMATION MAP
ON WEDNESDAY, 17 JANUARY 2018, 5.05PM AT SELETAR AEROSPACE PARK

Distinguished Guests

Ladies and Gentlemen

1. I am pleased to join the aerospace community here at the JTC Aerospace Networking Night.

2. This occasion is also an opportunity to celebrate a few milestones in the development of our aerospace industry, and to share our plans for its future growth.

10th Anniversary of Seletar Aerospace Park

3. **The first milestone is the 10th anniversary of Seletar Aerospace Park, or SAP.** The SAP is testimony to our long-term commitment to the aerospace industry. We began our journey to develop this 320ha industrial park in 2008, with a vision to create world-class business infrastructure for our industry players. Today, SAP is home to a vibrant aerospace community of over 60 companies.

Creating a Vibrant Aerospace Park

4. Last November, I officiated the opening of JEP Precision Engineering's Smart Factory just down the road. JEP was one of the first SME Digital Champions for the Smart Factory initiative under the Precision Engineering Industry Transformation Map (ITM). Their Smart Factory serves as a model factory for other SMEs seeking to adopt digital and advanced manufacturing solutions.

5. Within just two years, JTC Aerospace Phase Two has reached almost full occupancy. JTC will be signing several agreements at the Singapore Airshow next month that will see even more companies make their home at SAP. **I am encouraged by the good progress and am pleased to announce that JTC will be engaging industry partners to develop the concept for Phase Three. This will allow new players to join the ecosystem and existing companies to expand their operations.** Many SAP stakeholders, including aerospace companies and the Association of Aerospace Industries (Singapore), or AAIS, have given valuable suggestions to JTC on the facilities they would like to see in SAP, and I look forward to the continuation of this dialogue.

6. Besides physical infrastructure, **JTC is also working with partners like the Seletar Hills Estate Residents' Association, the National Parks Board and the National Heritage Board, to develop a heritage trail on the history of Seletar, and a cycling path around SAP as part of the Round Island Route.** Expected to be completed in phases over the next two years, these efforts will deepen community bonds and enhance the SAP community's vibrancy and sense of identity.

Singapore's Aerospace Industry Today

7. The progress of SAP is a barometer of the success of our aerospace industry, which has grown at an annual average of 7% in value-added over the past 20 years. In 2016, the aerospace industry achieved a value-added of $3.35 billion, and employed 21,000 people; 80% of these are locals, and the majority are in high-skilled job roles.

8. Today, Singapore is a leading Maintenance, Repair and Overhaul Hub, or MRO Hub, in the Asia-Pacific, contributing to 10% of the industry's global output. Beyond MRO, we are increasingly recognised as a prime location for aerospace manufacturing. We are home to Asia-Pacific's only engine assembly and two major fan blade manufacturing facilities. In the aftermarket space, we have also seen a proliferation

of companies offering premium aftermarket services such as cabin modifications, pilot training, and fleet management.

Global Trends Giving Rise to Opportunities for Singapore

9. Looking ahead, global air travel will continue to drive demand for new aircrafts, as evident from the 7 to10-year order backlog at 2016 production levels. The Asia-Pacific region is expected to become the world's largest aviation market, and could account for almost 40% of the global fleet in 20 years. This presents significant opportunities across the value chain in manufacturing, MRO and aftermarket services.

10. Rapid technology advances and digitalisation are also changing the complexion of manufacturing. New market segments such as unmanned aircraft systems (UAS) have emerged. These industry trends will transform existing aerospace jobs, and create new skilled jobs in areas such as data science, additive manufacturing design and robotics engineering.

11. It is thus timely and essential that we plan and prepare for the way ahead.

Launch of Aerospace ITM to Drive Long-Term Growth

12. **This brings me to today's second milestone – the launch of the Aerospace Industry Transformation Map.**

13. The Aerospace ITM is the 17th ITM that we have launched to date. The ITMs are integral to our efforts to transform our economy and drive long-term growth. The Aerospace ITM, like all other ITMs is focused on the needs and challenges of the industry, especially the SMEs who are a major part of our economy. The ITM also integrates our efforts to raise productivity, enhance jobs and skills, catalyse innovation and promote internationalisation.

14. Industry players, the labour movement and other stakeholders like the Aerospace ITM Forum and the Aerospace Industry Tripartite Committee have contributed significantly to the Aerospace ITM. The Aerospace ITM Forum was jointly organised by EDB and the Association of Aerospace Industries (Singapore) (AAIS) in April 2017. The Aerospace Industry Tripartite Committee is chaired by EDB and involves local companies, industry associations and unions. I would also like to thank the NTUC Aerospace & Aviation (A & A) cluster for consolidating valuable suggestions and feedback from union leaders.

15. The Aerospace ITM aims to achieve an industry value-added of S$4 billion and create about 1,000 new jobs by 2020. Let me elaborate on three key thrusts of the ITM.

Pursuing Operational Excellence

16. The first is to improve productivity, which is key to globally competitive manufacturing and MRO operations. Hence, through the ITM, **we will support investments by companies in new equipment and automation, as well as to deepen capabilities and drive process improvement.**

17. For instance, we are helping Singapore Aerospace Manufacturing, SAM, invest in advanced automation equipment, as well as software and engineering capabilities that will upgrade existing lines to manufacture next-generation aircraft components. The increased efficiency and reliability of its manufacturing processes are expected to help SAM achieve productivity gains of up to 30%. I understand that SAM is also grooming a full-time team to drive continuous improvement in future automation projects.

18. Another example is like ST Aerospace, who have embarked on a digital and productivity transformation initiative known as Smart MRO. It will leverage data analytics to optimise internal processes and bring additional value to

customers through solutions like customised predictive maintenance. ST Aerospace is also adopting solutions, such as drones for aircraft inspection and additive manufacturing for spare parts, which have the potential to improve cost efficiency and turnaround time.

Driving Innovation in Emerging Technologies

19. The second thrust focuses on driving innovation in emerging technologies.

20. A*STAR's aerospace consortium has been at the core of our aerospace research ecosystem over the past decade. Through it, aerospace original equipment manufacturers, or OEMs, and local enterprises have engaged in more than 120 aerospace research projects to date.

21. Some SMEs may lack the capacity and resources to participate in technology co-creation. Hence, we have made a deliberate effort to involve our SMEs in the research ecosystem. For example, Sankei Eagle Singapore teamed up with A*STAR's Advanced Remanufacturing and Technology Centre (ARTC) to automate a highly manual task – masking aerospace components before applying protective coating. This prototype machine was developed over just 3 months, and halves the time taken to mask a component. It

is noteworthy that almost half the ARTC members are SMEs, who carry out co-development with our research institutes and other ARTC members (including OEMs in the aerospace sector). I urge more SMEs to leverage ARTC to work with the OEMs on research and innovation projects.

22. Moving forward, **EDB and A*STAR will encourage the development of industry-relevant technologies that can be commercialised in the coming years.** Possible focus areas include industrial internet-of-things, additive manufacturing, data analytics for predictive maintenance and asset optimisation, and advanced materials.

23. Even as we nurture new industry segments, we must maintain safety standards, for example in response to rapid developments in unmanned aerial systems. Hence, CAAS and SPRING will set up an industry work group to develop technical standards so that the benefits of technology can be fully realised through a robust and responsive regulatory environment.

Equipping Singaporeans with relevant skills

24. The third thrust of the ITM seeks to equip Singaporeans with skills to take on new employment opportunities, and benefit from industry transformation.

25. **We have launched the Skills Framework for the aerospace industry, developed by SkillsFuture Singapore (SSG), Workforce Singapore (WSG) and EDB with inputs from industry stakeholders, unions, and education and training institutions.** It outlines career opportunities in four distinct tracks within the sector, covering 86 job roles.

26. The framework can be used as a common reference for training. To lead the way, our Airforce Training Command is aligning their full-time National Servicemen training to the Skills Framework. Upon completing training, the NSFs will be conferred the WSQ Statement of Attainments which will be recognised by the aerospace industry.

27. We are also stepping up efforts to prepare our students for the industry. **SIAEC and Singapore Institute of Technology (SIT) will offer a new Aircraft Systems Engineering Degree from September 2018.** The undergraduate programme will entail hands-on training at SIAEC and courses at SIT, while significantly reducing the total time taken to train aspiring licensed aircraft engineers from 92 to 64 months.

28. Temasek Polytechnic and SIAEC have also implemented two SkillsFuture Earn and Learn Programmes (ELPs) for the aerospace sector. One beneficiary is Ms Siti Mariani. With a NITEC in Aerospace Technology, Siti was hired by Rolls-Royce under the ELP for aerospace technicians in 2015. The structured on-the-job training, industry mentorship and technical training have enabled her to hone her skills and rise through the ranks. Today, she inspects and assembles Trent engines in her role as an aerospace technician. **Temasek Polytechnic will be rolling out two more new ELPs to support talent development.**

29. Besides fresh school leavers, mid-career professionals can also take advantage of the Professional Conversion Programme (PCP), under Workforce Singapore (WSG)'s Adapt and Grow initiative, to explore new opportunities in the industry. Through the four existing PCPs in Aerospace, WSG has helped close to 60 mid-career PMETs transit into new careers. **We will reach out to more potential mid-career recruits through the launch of two new PCPs for Aerospace Officers and Aerospace Executives.**

<u>Deepening Ties with our Key Partners</u>

30. **The third significant milestone is AAIS' 15-year anniversary.** Over the past 15 years, AAIS has been active in the aerospace industry by organising student outreach events and by providing valuable inputs to government policies. AAIS has also been working closely with JTC to organise a series of industry talks with technology partners, such as Siemens, McKinsey and SIMTech, on digitalisation and Industry 4.0 at the Singapore Airshow next month.

31. **Today, AAIS, on behalf of aerospace companies, will sign an MoU with our five polytechnics, ITE and JTC, to collaborate on a new series of student outreach initiatives so as to develop a pipeline of future-ready talent.** The initiatives are expected to benefit some 1,500 students from the aerospace engineering courses annually. The first collaboration will be the inaugural Aerospace Day @ SAP this April.

32. Industry associations like AAIS and Singapore Institute of Aerospace Engineers (SIAE), and unions including those from NTUC A & A cluster are key partners in our Aerospace ITM. They play a critical role as the voice of the aerospace industry and I would like to urge all of you to continue actively engaging the Government and companies to drive the ITM

initiatives, and to raise awareness among your members of the benefits of the ITM programmes.

Closing

33. In closing, I would like to reiterate that even as we celebrate our achievements today, we must also look to the future and plan for industry transformation. The Aerospace ITM encompasses many important initiatives, but these are not set in stone and must respond to a dynamic economic environment. Hence, the development and implementation of the ITM must be keenly attuned to industry trends, and its various initiatives must adapt and continually refined to help our enterprises respond quickly and effectively to changing economic conditions. With the strong support and active involvement of all stakeholders, I am confident that we will succeed in this journey of economic transformation and realise our vision for Singapore's aerospace industry and our economy.

34. I wish you all a fruitful time at the JTC Aerospace networking night. Thank you.