

**SPEECH BY MR S ISWARAN, MINISTER FOR TRADE AND
INDUSTRY (INDUSTRY), AT THE GLOBAL SPACE AND
TECHNOLOGY CONVENTION (GSTC) 2017, ON THURSDAY,
23 FEBRUARY 2017, 1055 HRS, AT MARRIOTT TANG
PLAZA HOTEL**

Your Excellency, Mr. Marc Abensour, Ambassador of the French
Republic to Singapore,

Your Excellency, Mr. Jawed Ashraf, High Commissioner of the
Republic of India to Singapore,

Your Excellency, Mrs. Yael Rubinstein, Ambassador of the State
of Israel to Singapore,

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Chairman and Presidents from the Israel Space Agency, JAXA,
and CNES,

Mr Jonathan Hung, President, Singapore Space and Technology
Association,

Mr Vincent Chong, President and CEO, Singapore Technologies
Engineering Ltd,

Distinguished Guests,

Ladies and Gentlemen,

Good morning.

Introduction

1. It is my pleasure to join you today at the 9th Global Space and Technology Convention (GSTC) 2017. This year is also the Singapore Space and Technology Association (SSTA)'s 10th anniversary. I would like to take this opportunity to congratulate SSTA and recognise its many contributions to our space industry in the past decade. Among these contributions, the GSTC is key.

2. Global demand for small satellites continues to experience strong growth. According to a SpaceWorks Enterprises report,

182 nanosatellites and microsatellites are expected to be launched globally in 2017, representing an 80% increase from 2016.

3. As a small and open economy, Singapore has always recognised the need to stay ahead of global trends and developments, to adapt and position ourselves for future growth. This approach is embodied in the recently released report from the Committee on the Future Economy (CFE).

4. Singapore's effort to develop our space industry is an example of how we are doing so. There are currently over 30 companies in Singapore creating high value jobs for more than 1,000 professionals, including over 150 researchers. They are engaged in a wide range of activities – from the design and manufacture of space components to the provision of satellite-based services.

Singapore is developing frontier technologies for its satellites, another step forward for the industry

5. While our space industry has made progress, it is important that we continue to innovate and chart new frontiers. At last year's GSTC, I announced the launch of 6 Singapore-made satellites into space on December 2015. Today, I am pleased to announce that Singapore will take our space journey one step further by developing new frontier technologies for our satellites.

6. Specifically, the Defence Science and Technology Agency (DSTA) has partnered with ST Electronics to build the next Singapore-made satellite, TeLEOS-2. The TeLEOS-2 satellite will build upon the technologies developed for TeLEOS-1,

Singapore's first commercial Earth Observation satellite. It will feature enhanced imaging capabilities compared to its predecessor. In addition, unlike TeLEOS-1, TeLEOS-2 will be able to capture images at any hour of the day under all-weather conditions, opening up possibilities for a wider range of satellite data applications. For instance, DSTA will use the TeLEOS-2 satellite to support agencies such as CAAS, MHA, MINDEF,

MPA and NEA for their potential satellite imagery requirements, while ST Electronics will use the satellite to enhance their commercial imagery services.

Our local companies are investing in R&D and forging partnerships to capture growing opportunities in the space industry

7. Local companies are also investing in R&D and forging partnerships to support their growth. Addvalue Technologies, a homegrown company, is one such example. The company is among one of the first companies in the world to venture into the realm of inter-satellite communications services. The company's inter-satellite prototype was successfully tested in space last year, and a new and enhanced version is already being developed. Most recently, in February earlier this year, Addvalue Technologies successfully inked a partnership with Inmarsat, a leading global satellite operator, to become the

world's first provider of commercial inter-satellite communications on small satellites.

8. Another example is iDirect, a global leader in satellite-based Internet Protocol technologies and a subsidiary of ST Engineering. Last year, iDirect expanded its Engineering and Development team in Singapore to develop a new product – the “Evolution Mesh”, a network design that allows a satellite terminal to connect directly with another satellite router, instead of going through a ground hub. This facilitates high-speed satellite connection, a feature particularly important for defence and voice applications, which is in strong demand by customers in the Asia Pacific and the US.

9. Addvalue and iDirect are good examples of how our companies can develop capabilities to innovate, scale-up and become globally competitive, which is one of the CFE's key recommendations.

Creating new job opportunities for our people

10. Our efforts to develop the space industry will provide good job opportunities for our people. According to EDB, another 300 jobs are expected to be created in the satellite industry over the next 5 years.

11. I wanted to highlight the example of Mr. Ding Chang. Mr. Ding joined iDirect Asia last year as an assistant principal engineer under its newly expanded Engineering and Development team. He is tasked to develop an enhanced network management system for iDirect's "Evolution Mesh", which that I highlighted earlier. This job offered Mr. Ding the opportunity to acquire skillsets in leading edge satellite network technologies, and participate in complex space communications projects.

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National satellite programmes will be established to strengthen alignment with industry needs, and deepen capabilities within public sector research performers

12. To better support innovation in our space industry, we will refine our approach to ensure greater alignment with industry as well as deepen capabilities within public sector research performers. For the past 3 years, EDB's Office for Space Technology and Industry (OSTIn) ran open thematic grant calls to select and award research proposals on satellite-related technologies ranging from software and algorithms, to various satellite subsystems. Moving forward, Singapore will continue to invest in small satellite R&D, but channel our resources to build deep and differentiated capabilities in a few selected areas.

Under this new approach, OSTIn will work with various technology stakeholders to identify technology areas and establish national satellite R&D programmes.

13. These programmes, with clearly defined technology areas and problem statements, will enable companies to partner our public research performers more closely and lead to better

commercialisation outcomes. This approach is also in line with one of the CFE key recommendations to strengthen our innovation ecosystem by enabling the commercialisation of research findings and intellectual property from our research institutions and IHLs.

Closing

14. Let me conclude. We have made good progress in our space industry due to the concerted efforts from the industry, academia and government. If we continue to work closely together, I am confident that Singapore will be able to seize opportunities from the growing space industry. I wish all of you a fruitful convention. Thank you.

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