PLEASE CHECK AGAINST DELIVERY

SPEECH BY MR S ISWARAN, MINISTER FOR TRADE AND INDUSTRY (INDUSTRY), AT THE LAUNCH OF 3D METALFORGE'S 3D METAL ADDITIVE MANUFACTURING CENTRE ON 17 MAY 2017, 10.30AM, AT 3D METALFORGE HQ, SCIENCE PARK II

Mr Matthew Waterhouse, CEO 3D Metalforge
Distinguished Guests,
Ladies and Gentlemen,

Good morning.

Introduction

1. It gives me great pleasure to join you today at the launch of 3D Metalforge's 3D Metal Additive Manufacturing Centre (AMC).

Additive Manufacturing (AM) is a key enabler for our manufacturing sector

2. The Committee of Future Economy (CFE), in its report released earlier this year, recommended the building of a globally competitive manufacturing sector over the medium term. Singapore's manufacturing sector is a key anchor for our economy, contributing 20% of GDP and 14% of total employment in 2016. It is the source of complex, high-value jobs, which drive the growth of competitive capabilities in the economy, including technical and engineering skills that enable our companies and workforce to innovate and adapt to future economic trends. In today's world, where rapidly advancing technologies are disrupting traditional business models while creating new growth opportunities, the need to build such technological capabilities is more urgent than ever.

3. As part of our RIE2020 plan, the Government is committing S$3.2 billion over 2016-2020 to develop technological capabilities in the Advanced Manufacturing and Engineering domain. Additive Manufacturing (AM) is a key enabling technology that

will be supported as part of this plan. As a fast growing industry that has doubled its worldwide revenues from US$3 billion in 2013 to US$6 billion in 2016, AM offers significant opportunities for our precision engineering (PE) firms to move towards higher value-added activities and tap the opportunities from digital manufacturing.

4. Advances in AM technologies that enable the production of high-quality, complex components that are not possible with conventional manufacturing processes, have also disrupted other manufacturing verticals such as Aerospace, Marine & Offshore, Medical Technology and Electronics. Beyond its initial application as a prototyping technology, AM has increasingly entered production processes, with AM-manufactured end-use parts rising from almost nothing in 2003 to over 50% in 2015. In particular, the metal AM segment has risen rapidly. In a survey by Wohlers Associates, almost half of AM service providers are producing metal parts.

As recommended by the CFE and highlighted by the Industry Transformation Maps (ITMs), Government is committed to help our companies and people build deep capabilities through innovation and partnerships

5. To capitalize on the opportunities arising from AM, it is important that our companies continue to upgrade their innovation capabilities and forge collaborative partnerships with the other stakeholders in the ecosystem. 3D Metalforge is a good example of how a local SME has benefitted from innovation and collaboration. Last year at the Precision Engineering Centre of Innovation (PE COI) Annual Conference, I witnessed the MoU signing for the Collaborative Industry Project (CIP) on AM between A*STAR's Singapore Institute of Manufacturing Technology (SIMTech) and 5 companies, including 3D Matters, a local 3D printing service bureau. Through the CIP, 3D Matters acquired capabilities in the Selective Laser Melting (SLM) technology for 3D metal printing, and successfully expanded its capabilities beyond polymer printing to 3D metal printing. This led to the establishment of 3D Matters' sister company, 3D Metalforge, which provides 3D metal printing services.

6. I am pleased to see that 3D Metalforge is continuing to pursue innovation through the establishment of the AMC. Focusing on low-cost and fully-certified innovative metal AM technologies, the AMC will enable 3D Metalforge to make the

shift from prototyping to producing industrial-grade end-use parts targeting the Marine & Offshore, Oil & Gas and PE sectors. With the AMC's fully digitized workflow from design to testing, 3D Metalforge will be able to provide decentralized 3D metal printing and post-processing services. Core R&D, design optimization, and digital file creation activities will be retained in Singapore, while production will be performed overseas, thereby reducing production and operational costs, as well as supporting the company's overseas expansion plans.

7. The event today also marks the strengthening of the collaboration between 3D Matters and SIMTech. Both parties will be signing a project collaboration agreement on Laser Aided Additive Manufacturing (LAAM) technology to produce industrial-grade metal parts that are larger and cheaper than those possible with SLM technology, with shorter production times. This project, which will be co-funded by the National Additive Manufacturing Innovation Cluster (NAMIC), will allow 3D Metalforge to leverage LAAM technology to further unlock opportunities in the Marine & Offshore, Oil & Gas and PE sectors, where such industrial-sized metal parts are currently typically sourced from overseas vendors.

8. Beyond helping our companies to develop the requisite technological capabilities, it is also critical that we support them in equipping their workforce with the relevant skillsets. The PE Industry Transformation Map launched in Oct 2016 has set out the PE Skills Framework to guide employers, individuals and training providers in identifying the key competencies and skills for emerging areas such as AM. Under the PE Skills Framework, Workforce Singapore in partnership with research agencies such as SIMTech, has also launched master-classes in advanced manufacturing technologies, including AM. These initiatives will help to prepare our workers for new job opportunities, such as 3D design as well as process and materials engineering for AM, as we shift the PE industry towards higher value-added activities.

9. Mr. Maideenkunju Noushad, is a 3D Metalforge staff who has embarked on a reskilling journey to join in the AM industry. A 40-year old Singaporean, Mr Noushad was recently hired by 3D Metalforge to run the AMC's printing operations. With over 10 years of experience in the PE industry, Mr Noushad has developed deep expertise in metal fabrication and processing techniques. Mr Noushad had undergone the WSQ

specialist course in AM and, with support from 3D Metalforge, will also undergo training by SIMTech. We hope more Singaporeans will be inspired by Mr Noushad and others like him to acquire the requisite skills and benefit from the 3000 additional PE PMET jobs that EDB expects to be created by the end of this decade.

Conclusion

10. As the nature of manufacturing evolves rapidly, the Government will continue to invest in advanced manufacturing technologies and encourage collaborations between our research agencies and industry partners, so as to build the deep capabilities needed for our companies to innovate and tap new opportunities for competitiveness and growth.

11. My heartiest congratulations to the team at 3D Metalforge on the launch of your AMC, and I wish you every success in your innovation journey.

12. Thank you.