

Annex A – Industry Partners in NTU-JTC Industry Talent Development Programme

1. Agency for Science, Technology and Research (A*STAR)

The Agency for Science, Technology and Research (A*STAR) is Singapore's lead public sector agency that spearheads economic oriented research to advance scientific discovery and develop innovative technology. Through open innovation, A*STAR collaborates with partners in both the public and private sectors to benefit society.

As a Science and Technology Organisation, A*STAR bridges the gap between academia and industry. Their research creates economic growth and jobs for Singapore, and enhances lives by contributing to societal benefits such as improving outcomes in healthcare, urban living, and sustainability.

A*STAR plays a key role in nurturing and developing a diversity of talent and leaders in their Agency and research entities, the wider research community and industry. A*STAR's R&D activities span biomedical sciences and physical sciences and engineering, with research entities primarily located in Biopolis and Fusionopolis. For ongoing news, visit www.a-star.edu.sg.

2. Bosch Rexroth

As one of the world's leading suppliers of drive and control technologies, Bosch Rexroth ensures efficient, powerful and safe movement in machines and systems of any size. The company bundles global application experience in the market segments of Mobile Applications, Machinery Applications and Engineering, and Factory Automation. With its intelligent components, customised system solutions and services, Bosch Rexroth is creating the necessary environment for fully connected applications. Bosch Rexroth offers its customers hydraulics, electric drive and control technology, gear technology and linear motion and assembly technology, including software and interfaces to the Internet of Things. With locations in over 80 countries, more than 32,300 associates generated sales revenue of roughly 6.2 billion euros in 2018. To learn more, please visit www.boschrexroth.com

The Bosch Group is a leading global supplier of technology and services. It employs roughly 410,000 associates worldwide (as of December 31, 2018). The company generated sales of 78.5 billion euros in 2018. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT company, Bosch offers innovative solutions for smart homes, smart cities, connected mobility, and connected manufacturing. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to deliver innovations for a connected life. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 460 subsidiary and regional companies in over 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. The basis for the company's future growth is its innovative strength. At nearly 130

locations across the globe, Bosch employs some 68,700 associates in research and development.

Additional information is available online at www.bosch.com, www.iot.bosch.com, www.bosch-press.com, www.twitter.com/BoschPresse.

3. Delta Electronics

Delta, founded in 1971, is a global leader in power and thermal management solutions. Delta's business categories include Power Electronics, Automation, and Infrastructure.

Delta's telecom power supplies lead the industry with an energy conversion efficiency of up to 98%.

In 2012, Delta successfully developed the world's first titanium-grade server power supply with an efficiency rating reaching 96%. Headquartered in Taiwan, Delta invests 6% to 7% of the group's annual sales revenue in R&D and has worldwide R&D facilities in China, Japan, Singapore, Thailand, the U.S.A., and Europe. In 2018, Delta has over 9,000 R&D engineers throughout the world with R&D activities coordinated on a global scale.

Delta believes it is their obligation to place a greater emphasis on climate change while focusing on revenue and growth. Delta has taken the lead in establishing science-based targets by proposing to lower their carbon intensity by 56.6% by 2025 using 2014 as the base year. In December 2017, Delta passed the SBTi (Science Based Targets initiative) evaluation, becoming the first company in Taiwan, as well as one of the first 100 companies in the world, to pass the evaluation. This action also marks Delta's efforts to control the global temperature rise to within 2°C. In addition, Delta actively promised all future Delta plants and offices shall utilise green building concepts.

To date, Delta has built 27 green buildings and the first green data centre in the world. Delta's American Headquarters was awarded Honourable Mention at the Liveable Buildings Award from the Centre for the Built Environment (CBE) from UC Berkeley. Delta's American Headquarters is a certified LEED Platinum green building, and innovative energy-saving technology was implemented to achieve the target of net-zero consumption. In July 2017, besides achieving net-zero energy consumption, the solar power generated from the building had even exceeded its consumption level.

Delta's Certified Green Buildings saved 13.29 million kWh of Electricity and 8,414 tons of CO²

Delta actively strategises for smart production and low-carbon smart cities in response to climate change and rapid changes in industry. In terms of smart production, Delta has integrated industrial automation system software and hardware into their factories, shortening the production cycle and significantly enhancing daily productivity, while reducing labour needs.

Delta is a frequent recipient of international awards. Since 2011, Delta has been selected each year for the prestigious Dow Jones Sustainability™ World Index (DJSI World). In 2018, Delta was also included in the DJSI Emerging Markets Index for the 6th consecutive year. It was ranked by CDP (formerly the Climate Disclosure Project) at the Climate Change Leadership Level.

4. ISDN Software Business Pte Ltd

Unlocking the Value of Industry 4.0

ISDN Software is a wholly owned subsidiary of ISDN Holdings, focusing on providing professional, reliable solutions and technical services to local as well as regional customers. The solutions that they offer to the industries are:

- Integrated Command Centre for infrastructure industries to integrate all the disparate subsystems through IIOT or connectivity through open protocols into a common data platform to allow centralised operation and maintenance purposes
- Manufacturing solutions such as Machine Efficiency, Augmented Reality to provide instructional information for production and maintenance operation, Energy Efficiency Monitoring and Analysis, Machine Learning and Predictive Analysis
- Tools integration as well as MES solution for high value production industry such as wafer manufacturing or integrated circuit test and assembly

For more information, please follow them on Facebook and Instagram@isdn.software.

5. Konica Minolta Business Solutions Asia

Konica Minolta Business Solutions Asia is transforming the workplace of the future with its customer centric solutions and hardware for the digitally connected world. Konica Minolta is committed to create new values for the society with their expertise. From information management to technology enabling tools, the solutions help businesses improve time to information, support mobility, and optimise business processes with workflow automation. Konica Minolta, Inc. has also been named to the Dow Jones Sustainability World Index for six years in a row. For more information, please visit <http://www.konicaminolta.sg/business/>

6. PBA Group

PBA Group (PBA: Platform for Bots and Automation) is a regional robotics and automation company that allows businesses of every size to leverage Industry 4.0 technologies to optimise and scale up their operations. From building tech products; specialising in precision and general robotics; to offering turnkey automation solutions, PBA is a technology partner that never stops reinventing. PBA's core capabilities involve the development of technology which can be applied to businesses across all industries, including a full suite of solutions in Warehouse Automation and Factory Automation. PBA also designs and manufactures its own products, including made-in-Singapore Autonomous Mobile Robots (AMRs), Collaborative robot (cobot) arms – the first-of its kind manufactured in Southeast Asia – as well as Motion Control and Direct Drive Technology.

PBA Group has over 30 companies in 10 countries and over 500 employees regionally, with a strong focus on Southeast Asia. For more information on PBA and its robotics and automation capabilities, please visit www.pbarobotics.com.

7. Shimano (Singapore) Pte Ltd

Established in 1921 and incorporated in 1940 in Japan (Sakai City, Osaka), Shimano Inc. designs, conducts R&D, manufactures and sells high quality bicycle components, rowing and fishing equipment.

Shimano (Singapore) Pte Ltd, incorporated in 1973, started out as the first overseas bicycle component assembly centre for their parent company, Shimano Inc. By leveraging on the quality workforce, Shimano Singapore has grown into a full-fledged manufacturing plant with full design, engineering and manufacturing capabilities, focusing on high value-added activities.

Appointed as the Regional Headquarters, Shimano Singapore overseas 13 subsidiaries as well as develops knowledge intensive processes to ensure that consistent and quality products are being delivered. In response to the ongoing changes of digital technology, Shimano Singapore aims to establish its own digital manufacturing systems in their new facility at JID and continue to strengthen their presence as a Value Creating Company.

Mission Statement: To Promote Health And Happiness Through The Enjoyment of Nature and The World Around Us.

8. Sodick Singapore Techno Centre

Sodick Singapore Techno Centre (SSTC) is a centre that showcase Sodick's latest machine and technology, Metal 3D Printing applications and provides solutions for Advanced Manufacturing to develop core capabilities towards Industry 4.0.

With the collaboration with EDB and JTC, SSTC also provides project collaborations and services to the industry, workshop, training to accelerate the adoptions for the community.