

industrial
guide **ASIA**
industrialguideASIA.com

Your Industrial Media Partner



IFR PRESENTS WORLD ROBOTICS

THE BEST SOCIAL ROBOTS, HUMANOID ROBOTS & INDUSTRIAL ROBOTS IN THE WORLD NOW

How ROBOTS ARE MAKING WAVES IN THE F&B INDUSTRY

TOUGH LOVE ROBOTS

Industrial Guide Asia - Your Gateway to South East Asia

WANT TO SEIZE THE OPPORTUNITY?

sign up now

Watch on YouTube

VideoScribe



www.IndustrialGuideAsia.com

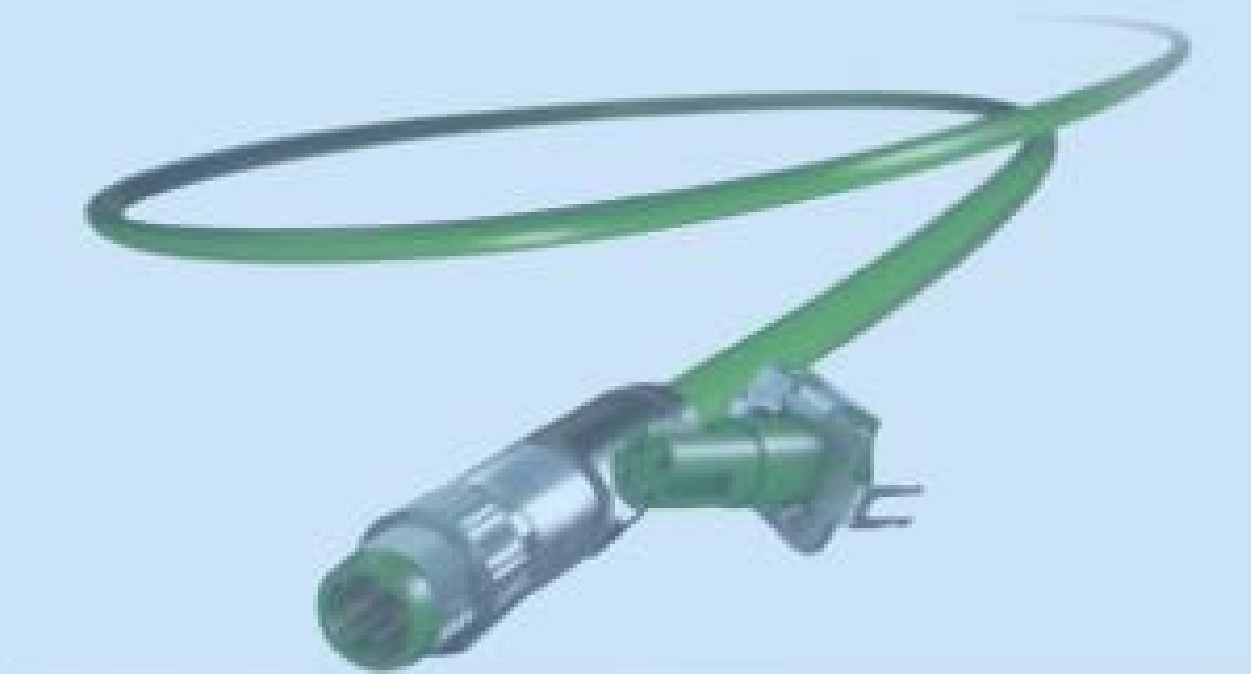
Automation



Pushing Performance



M8 D-coded



VarioBoot RJ45



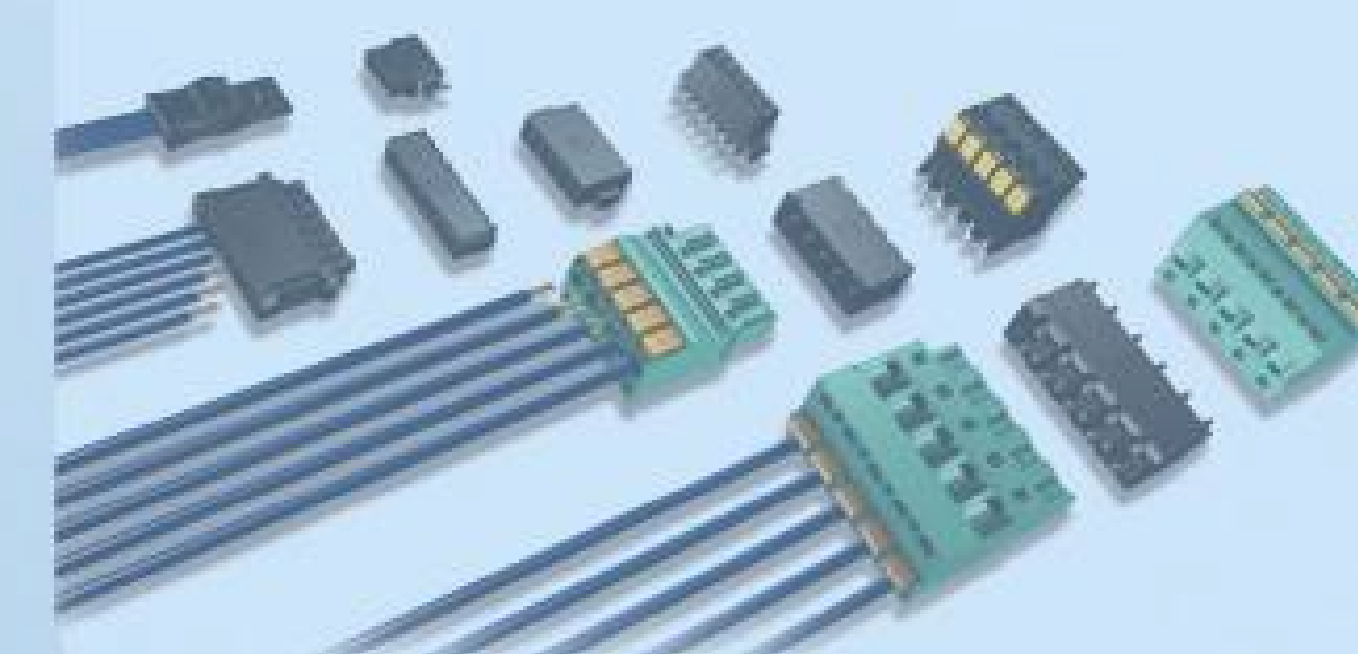
Han-Modular®



HARTING ix Industrial®



har-flex® / har-flexicon®



Han-Modular® Flexbox



Han® M23



HARTING PushPull



Flexible Solutions of the Future

HARTING offers connectivity solutions for device integration up to the flexible and modular world of automation technology. Connectors facilitate development, assembly, transport, production and maintenance processes. The product portfolio ranges from connectors for electrical signal and power transmission, interfaces for optical fibers and pneumatic lines as well as comprehensive solutions for Industrial Ethernet. HARTING products are designed to meet all required protection classes of industrial environments. Find more information, phone +65 6225 5285 or write to sg@HARTING.com



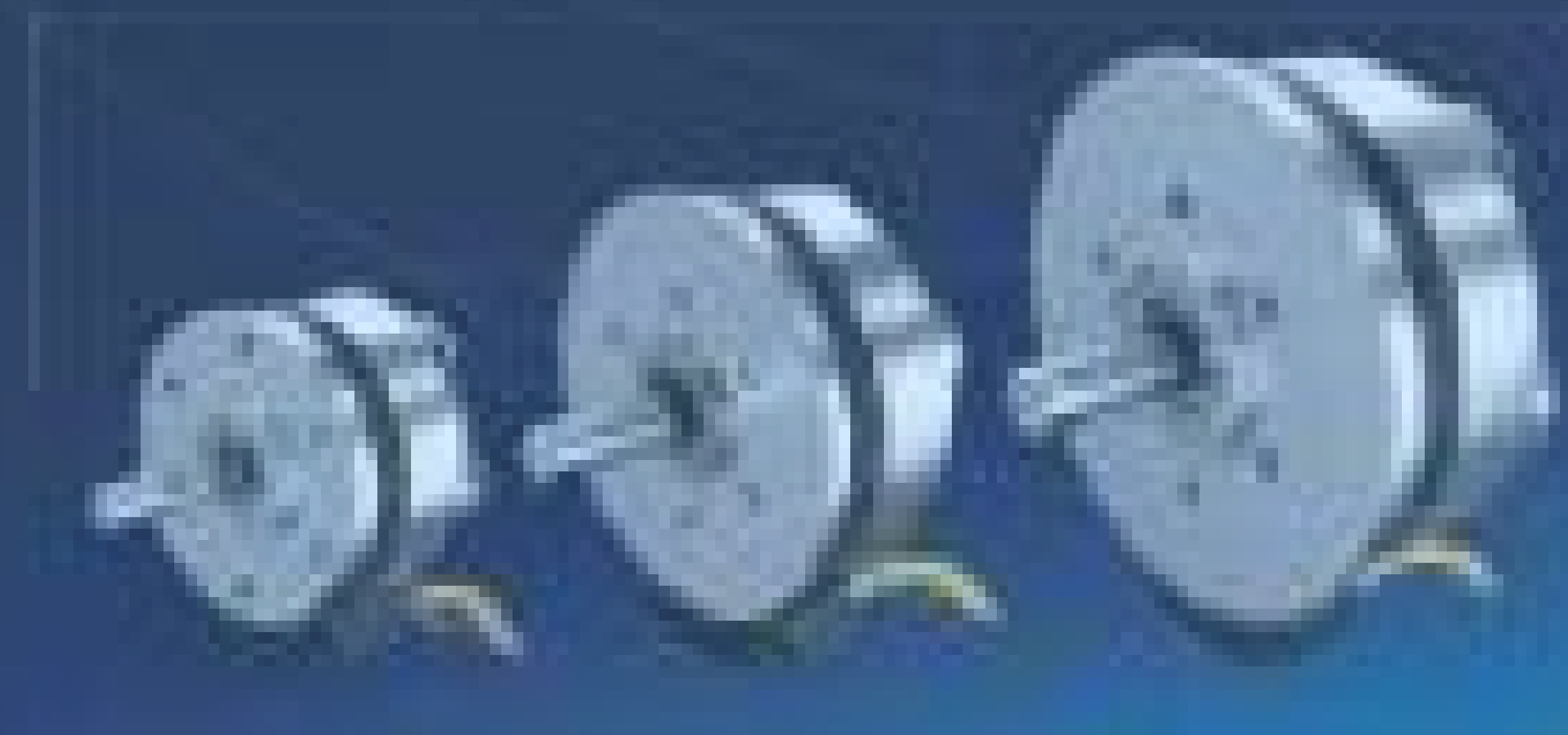
Scan to learn more

FAULHABER

FAULHABER BXT

Power in new dimensions

Brushless Flat
DC-Servomotors



WE CREATE MOTION



FAULHABER Singapore Pte Ltd
info@faulhaber.com.sg
www.faulhaber.com/p/bxt/en

IN THIS ISSUE



FEATURE STORY (Page 7 - 26)

INSIGHT OUT (Page 28 - 36)

SUCCESS STORY (Page 38 - 45)

PRODUCT COMMUNIQUE (Page 47 - 51)

GREAT OPPORTUNITY (Page 53 - 54)

TECHNOLOGY FLASH (Page 56 - 60)

**PROMOTION FROM USD2000
ONWARDS FOR 1 ISSUE**

PRESS & MEDIA COVERAGE

EMAIL US

wizard@industrialguideasia.com

ALL rights reserved. No part of this publication may be reproduced in any form or by means without prior written permission from the Publisher as the copyright owner. Whist every care is taken in compiling all data in this directory. The publisher should be notified in writing immediately by registered post of any omission, error or inaccuracy. All advertisement are acclaimed and accepted on the understanding that the Advertiser is authorized to publish the contents of the advertisements and in this respect, the Advertiser shall indemnify the publish against all or any claims or suits for libel, violation of right of privacy and copyrights infringements.

1 SPIN YOUR BRAND AROUND THIS REGION
TALK TO US

2 FOR EDITORIAL CONTRIBUTION
wizard@industrialguideasia.com



Articles Contribution Are Welcome !!!

**ONLINE AND PRINT
COVERAGE**

GET NOTICED !!!

**ADVERTISE YOUR NAME CARD
WITH US FOR USD100 PER
ISSUE**

**ORANGE MEDIA GROUP
PTE LTD**
22 Sin Ming Lane, #06-76
Midview City
Singapore 573969
Singapore
Tel: +65 6405 0110

**AALL CORPORATION
MYANMAR CO, LTD**
No(97/99), 5th Floor
Thiri Condo, 49th
Street(Middle Block)
Pazuntaung Tsp, Yangon,
Myanmar
Tel: +95 9431 23 965

**ORANGE MEDIA
MALAYSIA SDN BHD**
No 1 Jalan Bayu Puteri 2/1
Taman Bayu Puteri
#21-09, Bayu Marina
Resort
80150 Johor Bahru
Malaysia
Tel: 6016-2181218

Dear Friends

It is another year gone! It is the time of the year again for a lot of family, friends and associates catch up. To sum up our 2019, we here in **Industrial Guide Asia**, have a pretty big challenges to tackle, from updating hundreds of thousands of contacts to the hacking on our portal. The **www.industrialguideasia.com** has been around ever since 2002, with the old fashioned coding, very expensive server and constant third party updates. We came a long way to learn from our vendors on how to play this game in the cyber world. This bring us to this issue, Technology and Robotics.

This issue we learn a lot on how the Robotic has evolve, from industrial robotic arms to humanoid. It is a little sad to learn that we need to use robots to look after our elderly and keep our little one's company. On the positive notes, man kind can now focus on creativity and let these robots to manage the repeatable boring tasks. In years to come, we will live in a world full of service robotics and factory be manage by robots again with various smart technology.

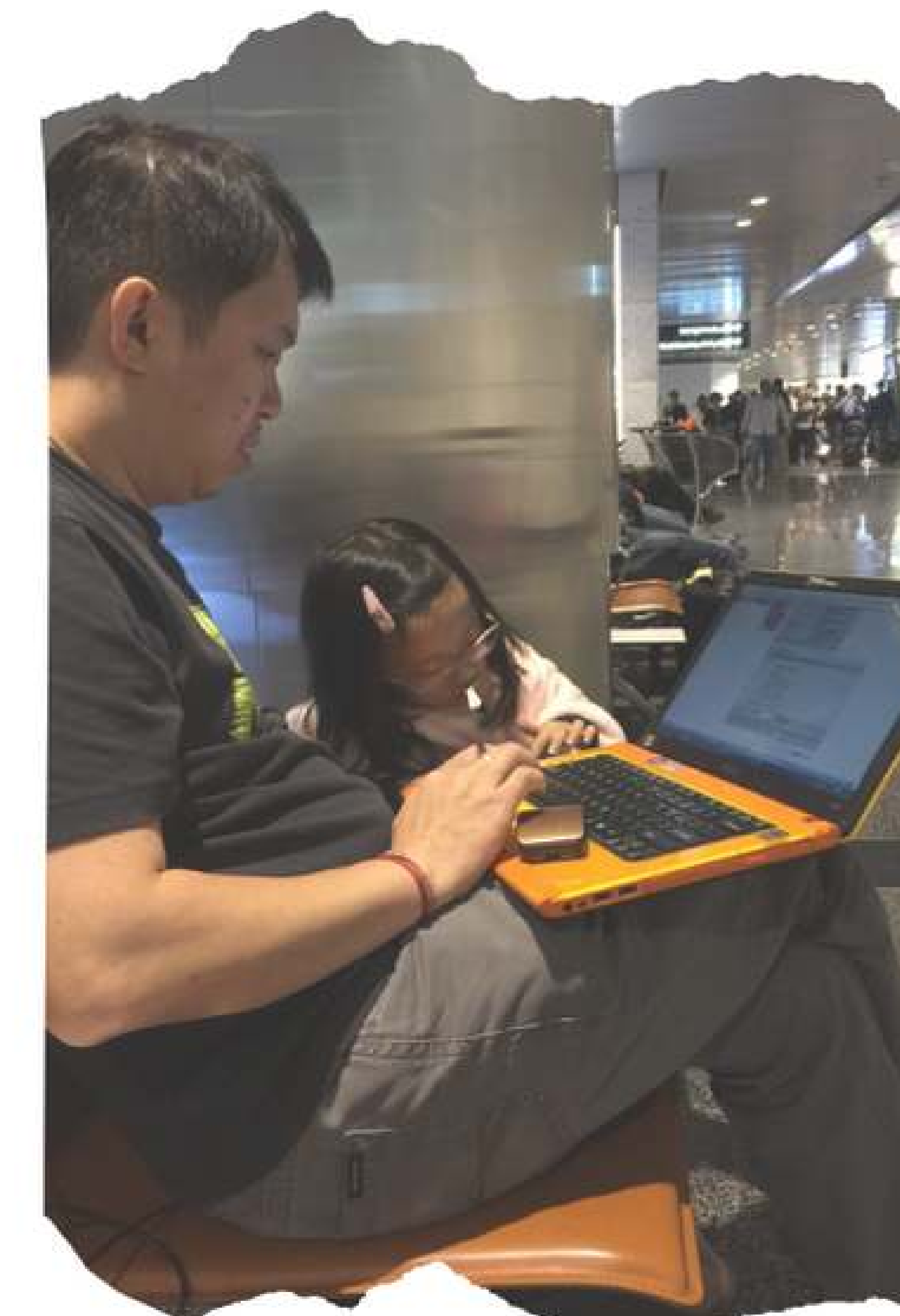
We made some big chances to the Magazine, now we will be able to play Video-on -Ad. Do check that out and let us know your comments.

December is also the time, where we will ponder how the project first kick off by our Founder, **Eric**, who left us in 2016. Ever since, it was a struggle to work on and re strategist all his vision and dreams. We are very thankful for all the support we have received and encouragements. His passion and strength live on, especially we found ourselves reading various articles at 2am. He used to stay up late in front of his laptop up till 4am, reading articles, checking online for industrial technology and with one of many can of beers. Often, I wonder what drives him, his was not just hard work, it was purely joy, passion and interest he had.

Whenever I speak to anyone who is so fondly explaining about their project, their work, their passion. It reminds me a lot how I was so privilege to work, to learn so much from this man. Christmas is still very difficult, but this year, we raise our glass and make a toast to him in heaven. May he too, be patient with our slow progress and continue to inspire many of us.

*Here, we wish you a Beautiful Christmas and a Happy and Joyous New Year.
From our home to yours, from our team to yours.*

Yours faithfully,
Team Industrial Guide Asia
Orange Media Group



4am ish-Doha Transit

APM is the premier exhibition and conference in Asia showcasing a complete overview of the vessel sectors – services and solutions, technology, vessel equipment, supplies, and many more. Gear up for the future at APM 2020!

NUMBER OF VISITORS



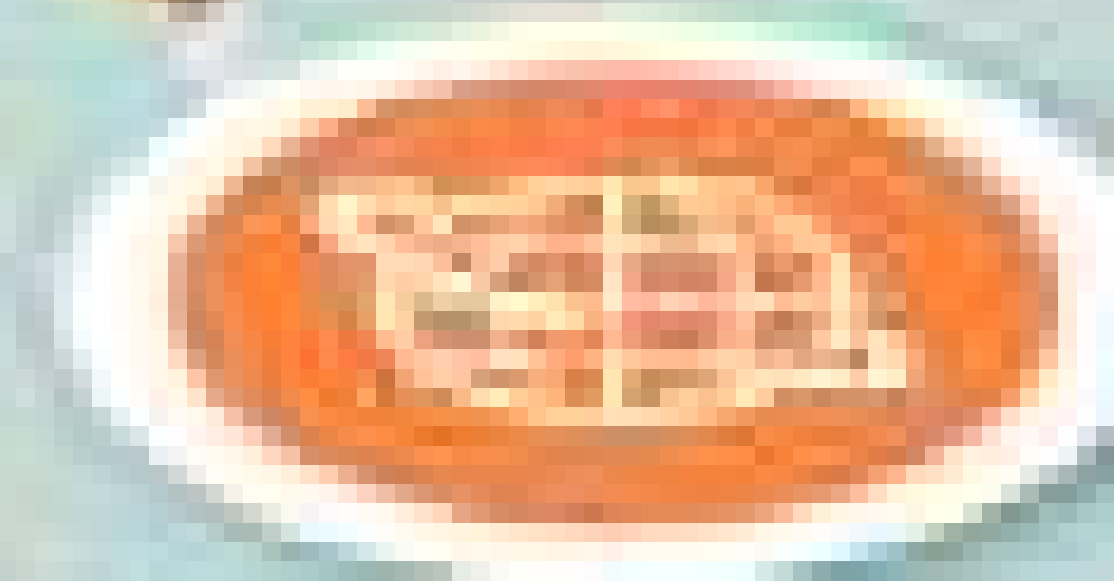
14,158
 trade visitors
 from Asia

NUMBER OF BRANDS



1,432
 brands with
69%
 international
 participation

NUMBER OF OFFICIAL PAVILIONS



18
 official
 pavilions

LEADS GENERATED



67%
 of exhibitors
 generated new
 sales leads

EXHIBITOR SATISFACTION



Over **84%**
 of exhibitors
 were very
 satisfied

NUMBER OF EDITIONS



A proven
 track
 record of
15 editions

Contact us to discuss your
 participation at **APM 2020**

E: apm.sales@readexpo.com.sg
 T: +65 6700 4585

Organised by:



Endorsed by:



Supported by:



Held in:



Gold Sponsor:



SPONSORSHIP OPPORTUNITY
AVAILABLE NOW!

DEWAN TAMAN MAWAR PASIR GUDANG, JOHOR

INDUSTRIAL AUTOMATION, PROCESS AND PACKAGING
ROBOTICS INDUSTRY, INDUSTRIAL 4.0, ENERGY SAVING
MECHANICAL EQUIPMENT, INSTRUMENT CONTROL

ABOUT INDUSTRIAL AUTOMATION FIESTA 2019

Industrial Automation Fiesta 2019 is the annual roadshow in Malaysia that will bring you practical insights into the latest strategies, tools, trends Industrial Automation, Robotics Automation, Logistics Automation, Material Handling, Pumps and Valves, Process and Packaging, Analytical and Laboratory, Test and Measurement to achieve and maximize productivity and operational efficiency in manufacturing, process industry and quality control and R&D.

Through expert led presentation and displays, we welcome leading industrial companies from around the world and all over Malaysia to exhibits and update technologies to the growing manufacturing, process industry and quality control and R&D at Johor, Malacca, Singapore, Batam (Indonesia) and its nearby industries.



Officially Supported By:



China's Robot Market is still No. 1

Nation's robot density, which is the number of robots per 10,000 persons used in the manufacturing industry, reached 140 last year



China's robot density, which is the number of robots per 10,000 persons used in the manufacturing industry, reached 140 last year, higher than the global average of 99, the reports said. "Ten years ago, the robot density in China was about 20, and today it is 140. We still see a lot of capacity potential in the Chinese market moving forward," said Wyatt, who suggested there is the huge potential in China as it continues to improve the level of its robot density in the future. Qu Daokui, president of China Robot Industry Alliance and CEO of Siasun Robot and Automation Co., agreed. "In the next decade, we expect the robot density in China will surge to a much higher rate," said Qu. He added it took China 40 years to reach its current robot density of 140 and before 2016, the rate in China was always below the global average.

It is estimated that sales of industrial robots will grow by 4% in the Chinese market in 2019, and domestic robot sales are forecast to rise by 15%

China retained its position as the world's largest industrial robot market for the sixth year in a row by selling 156,000 units in 2018, with the nation accounting for 36% of total installation globally, several industry reports said. The International Federation of Robotics published its annual report in Shanghai on Wednesday, where it said China, Japan, South Korea, the United States and Germany are the top five markets, representing 74% of global installation in 2018, China Daily reported. The report said China topped all markets by installing 154,000 units of industrial robots last year, making up 36% of global installation, and surpassing the combined amount of the American and European markets. The total value of installations in China surged 21% year-on-year to US\$5.4 billion, it added. China also held its top position by sales volume, despite seeing a 1.73% year-on-year drop. This resulted from a 7.2% decline in the sales of foreign robot makers to 113,000 units, the China Robot Industry Alliance report said. Chinese manufacturers, however, bucked the trend with a 16.2% growth from a year ago. The diverging trend was caused by China's policy to promote domestic manufacturers, along with weakness in the automobile industry here, said IFR Vice-President Steven Wyatt, who is also group vice-president of ABB.

Robots continue to be the highlight of the China International Industry Fair that will end on Sept 21 in Shanghai. Siasun Robot and Automation Co. published the first Chinese industrial software and control platform on Tuesday, and the system should be the foundation for Chinese industrial internet of things development. ABB showcased a range of digital products, solutions and services including a watch making factory featuring a model production line assembling customized wristwatches in real time, as well as an AI-enabled waste separation prototype, which is a neural network of robots, computers and sensors that can classify and sort waste into four categories as effectively as a person. "I see quite a few robots for the first time by our company during this year's event. Many of them are exhibited in China for the first time, tapping into the automotive manufacturing demand from China," said Cao Xi, a sales manager of the robot business management department in Yaskawa Electric (China) Co. Ltd. Cao said Yaskawa Electric showcased more than 30 types of robots during this year's CIIF, including a long arm robot tailored for the Chinese market. It is estimated that sales of industrial robots will grow by 4% in the Chinese market in 2019, and domestic robot sales are forecast to rise by 15%.

Source: AsiaTimes

SmartScope® Flash CNC 300



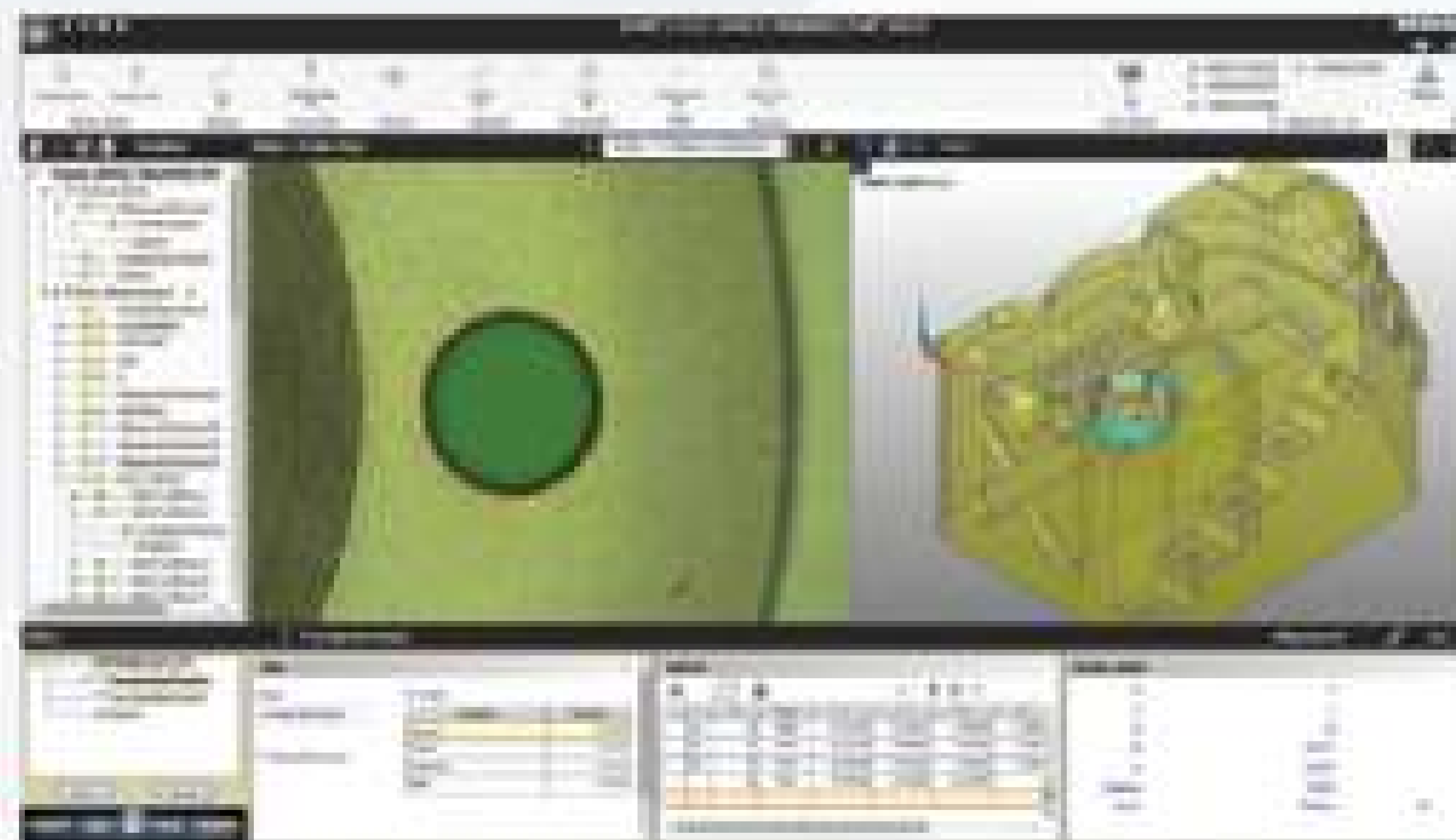
Unique High Capacity Benchtop Multisensor Measurement System

SmartScope® Flash™ CNC 300 is one of the most versatile benchtop systems OGP offers. With an expansive Z-axis of 250 mm to accommodate large parts, it combines state-of-the-art video and autofocus to deliver high productivity.

The World Most Comprehensive Metrology Software

ZONE3 Metrology Software represents a totally new way of working with multisensor measurement systems. Its interface clearly displays relationships between parts, sensors, datum alignments, and machine tooling. ZONE3 uses CAD models and other innovative features to automatically and effortlessly generate measurement routines.

ZONE3® Express/Pro



Optical Gaging (S) Pte Ltd
 21 Tannery Road, Singapore 347733
 Tel: +65 6741 8880 | Fax: +65 6741 8880
 Email: marketing@smartscope.com.sg
 Website: www.smartscope.com.sg





World's Top 10 Industrial Robot Manufacturers



Company	Head Quarter	About
	Zurich, Switzerland	ABB (ASEA Brown Boveri) is a Swiss-Swedish MNC based out in Zurich, Switzerland. ABB is a leading supplier of industrial robots and robot software, equipment and complete application solutions.
	Kitakyushu, Japan	The Yaskawa Electric Corporation is a Japanese manufacturer headquartered in (Kurosakishiroishi, Yahatanishi-ku, Kitakyushu) Japan. The company manufactures servos, motion controllers, AC motor drives, switches and industrial robots.
	Bavaria, Germany	KUKA (Keller und Knappich Augsburg) is a German manufacturer headquartered in Bavaria, Germany. The company manufactures industrial robots and solutions for factory automation.
	Yamanashi Prefecture, Japan	FANUC Corporation is headquartered in (Oshino-mura, Minamitsuru-gun, Yamanashi Prefecture) Japan. The company provides automation products and services such as robotics and wireless systems.
	Tokyo, Japan	Kawasaki Heavy Industries Ltd. (KHI) is a Japanese multinational corporation based in Tokyo, Japan. The company is a leading manufacturer of motorcycles, heavy equipment, aerospace and defense equipment, rolling stock and ships.
	Tokyo, Japan	Seiko Epson Corporation or EPSON , is a Japanese electronics company based in Tokyo, Japan. Company is a leading manufacturers of computer printers, and information and imaging related equipment. EPSON manufactures and design robots under EPSON Robots department.
	Pfäffikon, Switzerland	Stäubli is a Swiss mechatronics company, headquartered in Pfäffikon, Switzerland. The company manufactures textile machinery, connectors and robotics products.
	Toyama, Japan	Nachi-Fujikoshi Corp. or Nachi is a Japanese corporation headquartered in Toyama, Japan. The company manufactures industrial robots, machining tools and systems and machine components.
	Turin, Italy	Comau is a leading company in the industrial automation field headquartered in Turin, Italy. Company is a subsidiary of automaker Fiat Chrysler Automobiles.
	California, U.S.	Omron Adept Technology, Inc. is a multinational corporation with headquarters in Pleasanton, California. The company provides solution (product and services) for industrial automation and robotics, including software and vision guidance.



Design Concept by : Sudeep Chakravarty (MarketResearchReports.com)

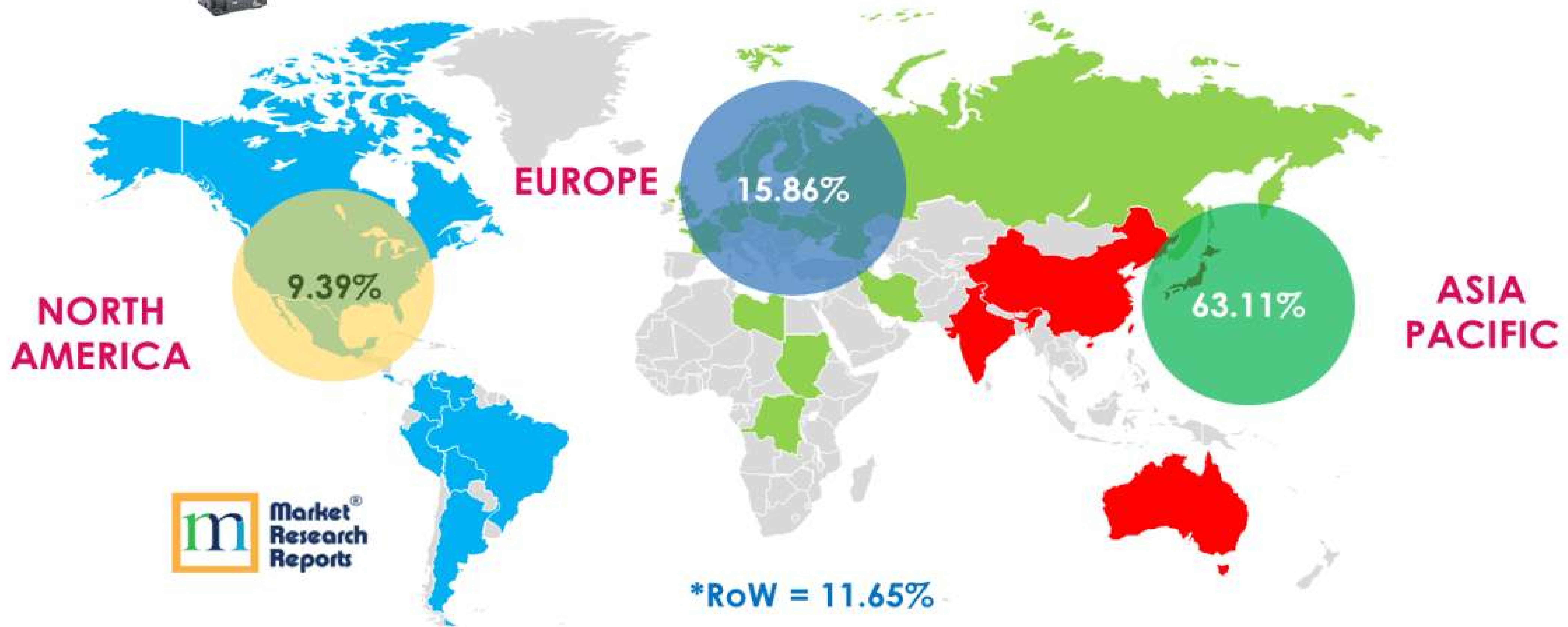
Disclaimer : All product names, logos, and brands are property of their respective owners. Infographic data is sourced from company's annual reports.

World's Top 10 Industrial Robot Manufacturers

Global industrial robotics market is expected to reach USD 42.29 billion in terms of robot machines and USD 138.03 billion in terms of robot systems by 2026, representing 2019-2026 CAGRs of 11.57% and 12.59% respectively. The annual shipment is expected to exhibit a CAGR of 17.09% during the same period, advancing to over 1.51 million units in 2026.

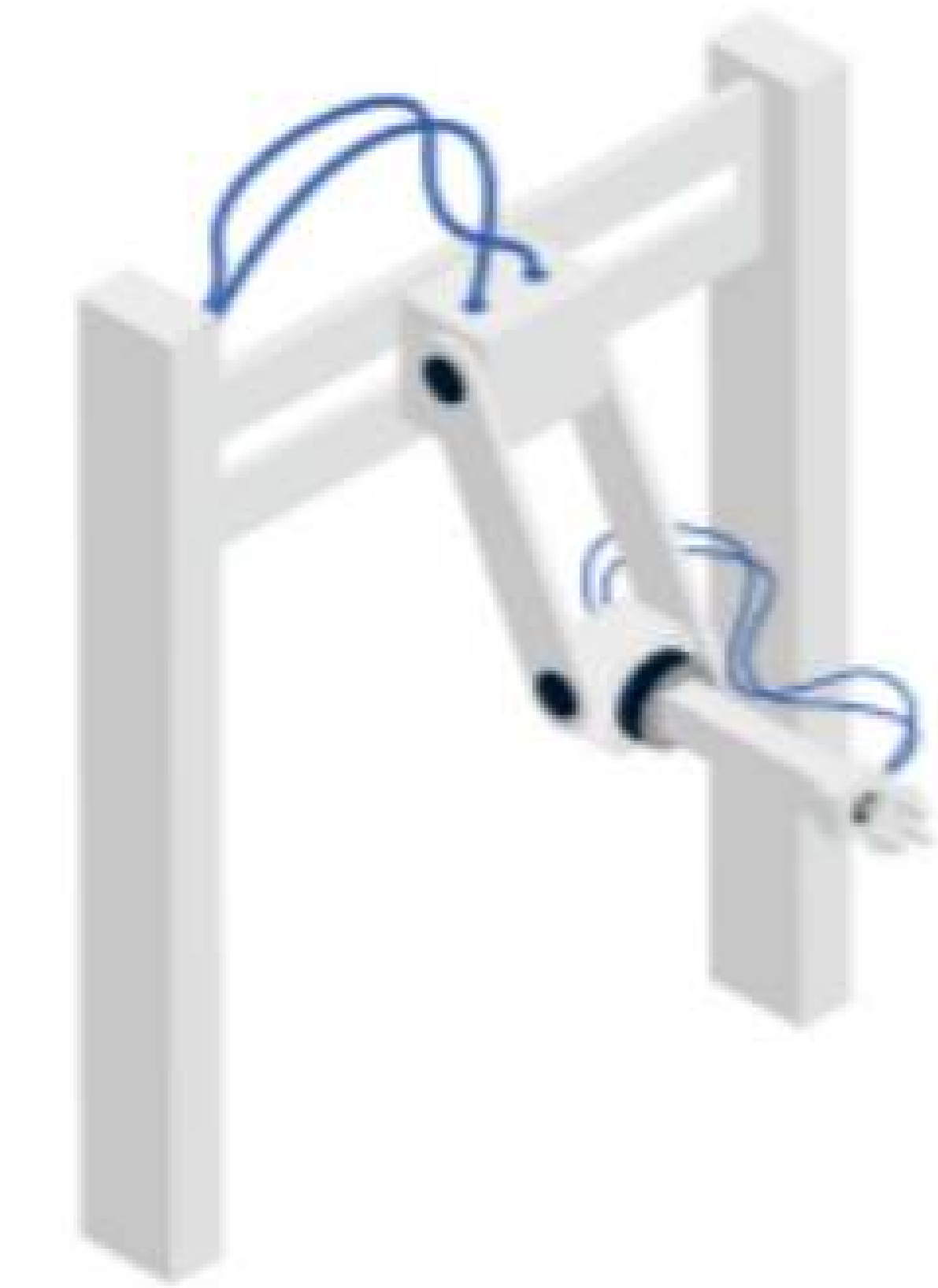


INDUSTRIAL ROBOTICS MARKET SHARE BY GEOGRAPHY



Note : The 2019 Market Shares are Estimated.
*Row = Rest of the World

Asia-Pacific industrial robotics market is expected to grow by 13.39% in terms of robot system revenue and reach \$97.0 billion by 2026, representing the largest regional market in the world. The annual shipment in this region will advance to 1.11 million units in 2026 with a 2019-2026 CAGR of 17.89%. (Source: .marketresearchreports)



OVERVIEW OF INDUSTRIAL ROBOT SEGMENTS

Stand-alone – articulated

Articulated robots have rotary joints and between three and six degrees of freedom enabling high flexibility (robot can bend back and forth).

Application

Articulated robots are used for a range of applications, e.g., assembly, painting, arc or spot welding, palletizing, and material handling.

Stand-alone – delta

Delta (also: parallel) robots have three arms that are connected to a base platform via universal joints. Their arms are arranged as parallelograms to restrict the movement of the end platform. Actuators are located at the base platform, so that passive arms can be lightweight and move with great speed.

Application

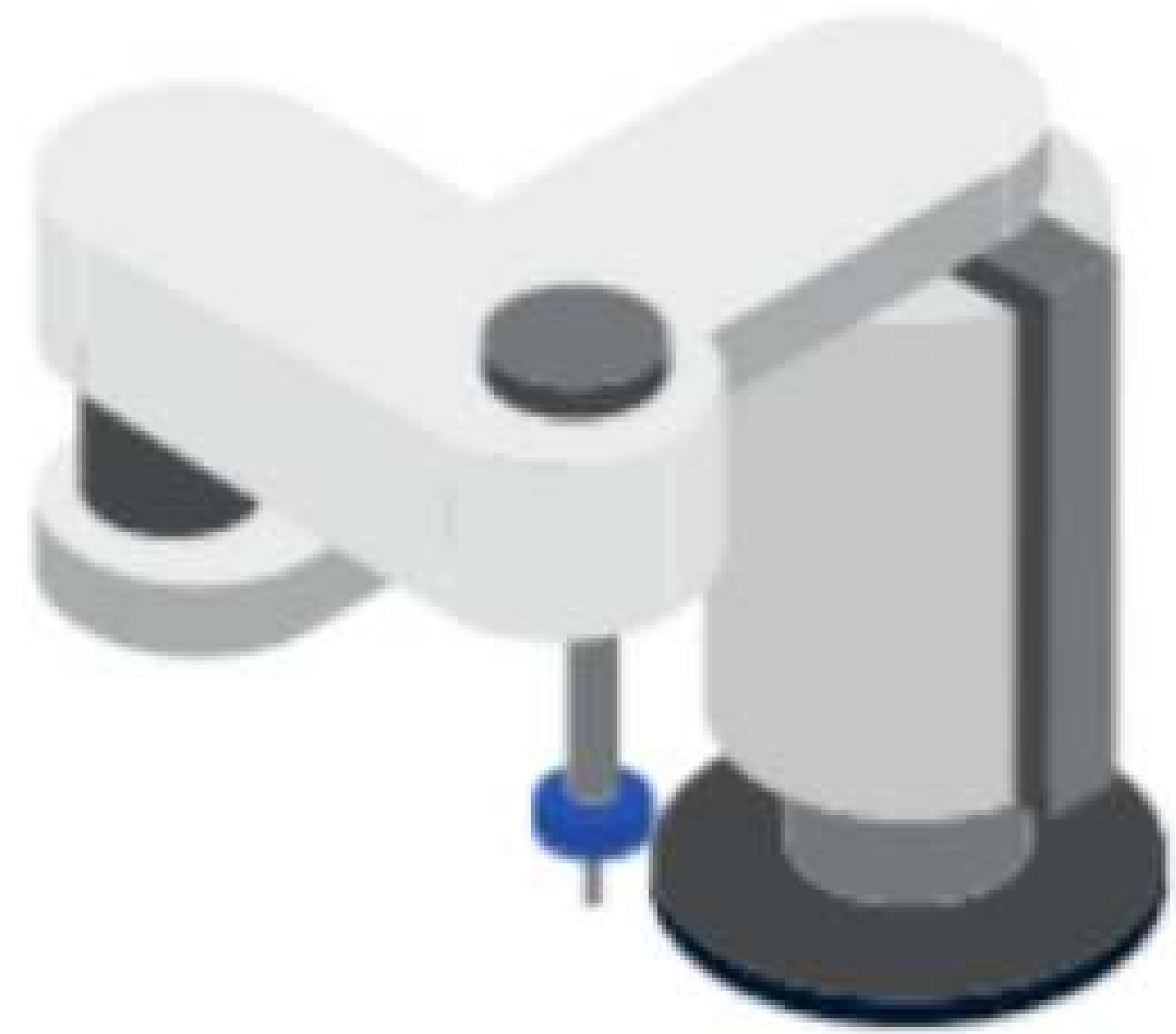
Applications that require great precision and speed: common applications include packaging, high-precision assembly, and material handling.

Stand-alone – gantry/ linear/Cartesian

Cartesian robots consist of three axes of control that are situated at 90 degree angles of each other. The axes do not rotate but move in straight lines, which simplifies robot control – linear robots are comparably simple.

Application

With no need for pedestals, Cartesian robots are useful where space is limited, as they can be mounted overhead.

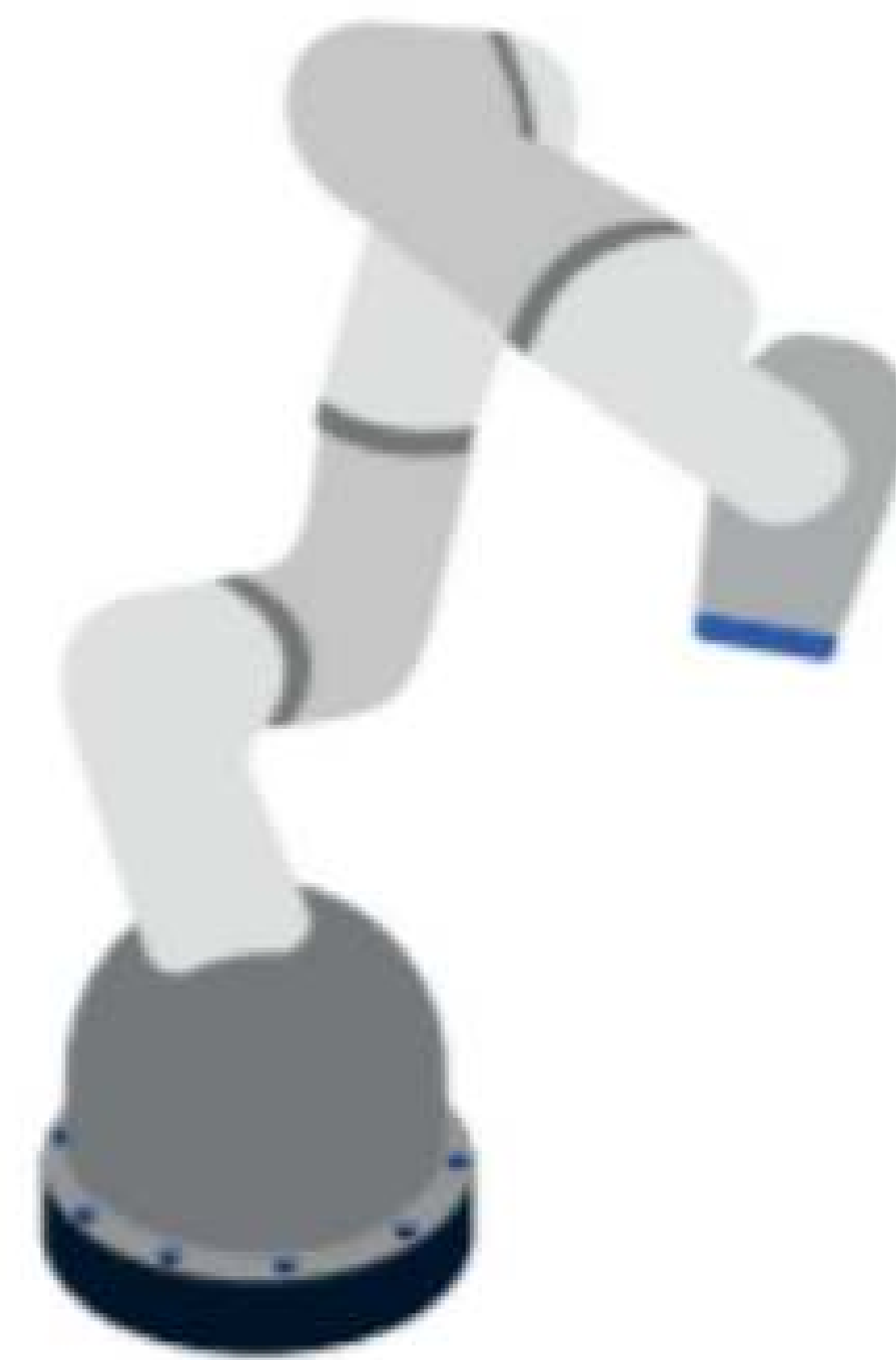


Stand-alone – SCARA

SCARA robots are modelled like human arms with an elbow, shoulder, and wrist. They have three axes for x, y, and z movement and an additional axis for movement of the end effector. The setup of the axes allows the robots to extend their arm and to retract it by folding up.

Application

They are used for fast, repetitive, and precise point-to-point movements, such as palletizing, machine loading, and assembly.

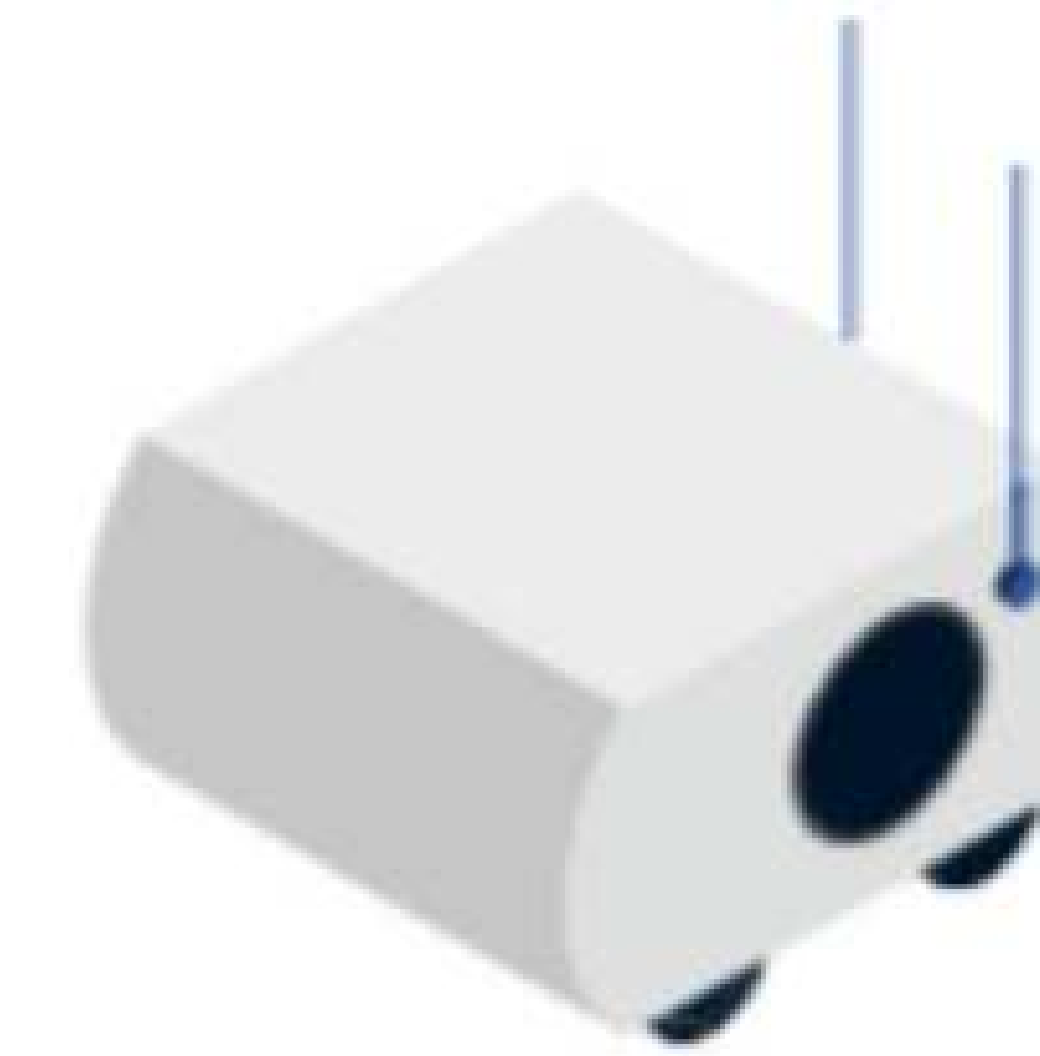


Collaborative

Collaborative robots directly interact with human workers without safety fences and are equipped with machine learning capabilities for easier programming.

Application

They are used to support human workers' strength and precision for certain movements, in processes that require flexibility and reprogramming, or where space is limited.



Autonomous guided vehicles (AGVs) and autonomous mobile robots (AMRs)⁵

AGVs and AMRs are not fixedly installed but mobile. Navigation is either onboard (e.g., camera or laser based) for most advanced types or external (e.g., path based using magnetic tape, wire, or rails on the ground).

Application

Mobile robots are used for logistics and delivery as well as for moving pieces, such as boxes, pallets, or tools, in industrial settings between machinery, transfer points, or storage areas.



Exoskeletons

Exoskeletons are connected to the human body for support during heavy-duty or ergonomically challenging process steps. They are designed to boost the strength of human workers, e.g., increasing humans' capacity to carry heavy weight.

Application

They can be used in industrial applications to support worker movements (e.g., lifting in warehouses).



INDOWATER 2019 EXPO & FORUM

**THE 15th INDONESIA'S NO.1
INTERNATIONAL WATER, WASTEWATER
AND RECYCLING TECHNOLOGY EVENT**

**THE BIGGEST AND MOST COMPREHENSIVE
TECHNOLOGY EVENT IN INDONESIA**

17 - 19 JULY 2019
Jakarta Convention Center, Jakarta - Indonesia

Incorporating with

INDO SANTECH
2019 EXPO & FORUM

INDO POOTECH
2019 EXPO & FORUM

INDO REENERGY
2019 EXPO & FORUM

INDO WASTE
2019 EXPO & FORUM



For further information, please contact

Samuel Delaviano Wajong
Project Manager
Mobile + 62 819 3838 5500

samu@onapindo.com

Ayuningtyas
Sales Administrator
Mobile + 62 817 0005 594

ayun@onapindo.com

ORGANISED BY



PT NAPIINDO MEDIA ASHATAMA

Address: Jl. Pahlawan 211, Blok D002, Bldg. 4 The Park
Fax: +62-21-960 1840
E-mail: info@napindo.com
Website: www.napindo.com

www.indowater.com | info@indowater.com
Indo Water Expo & Forum | [indowater](https://www.facebook.com/indowater) | [indowaterexpo](https://www.instagram.com/indowaterexpo)

OFFICIAL PUBLICATION

Water & Wastewater Asia

SUPPORTING PUBLICATIONS

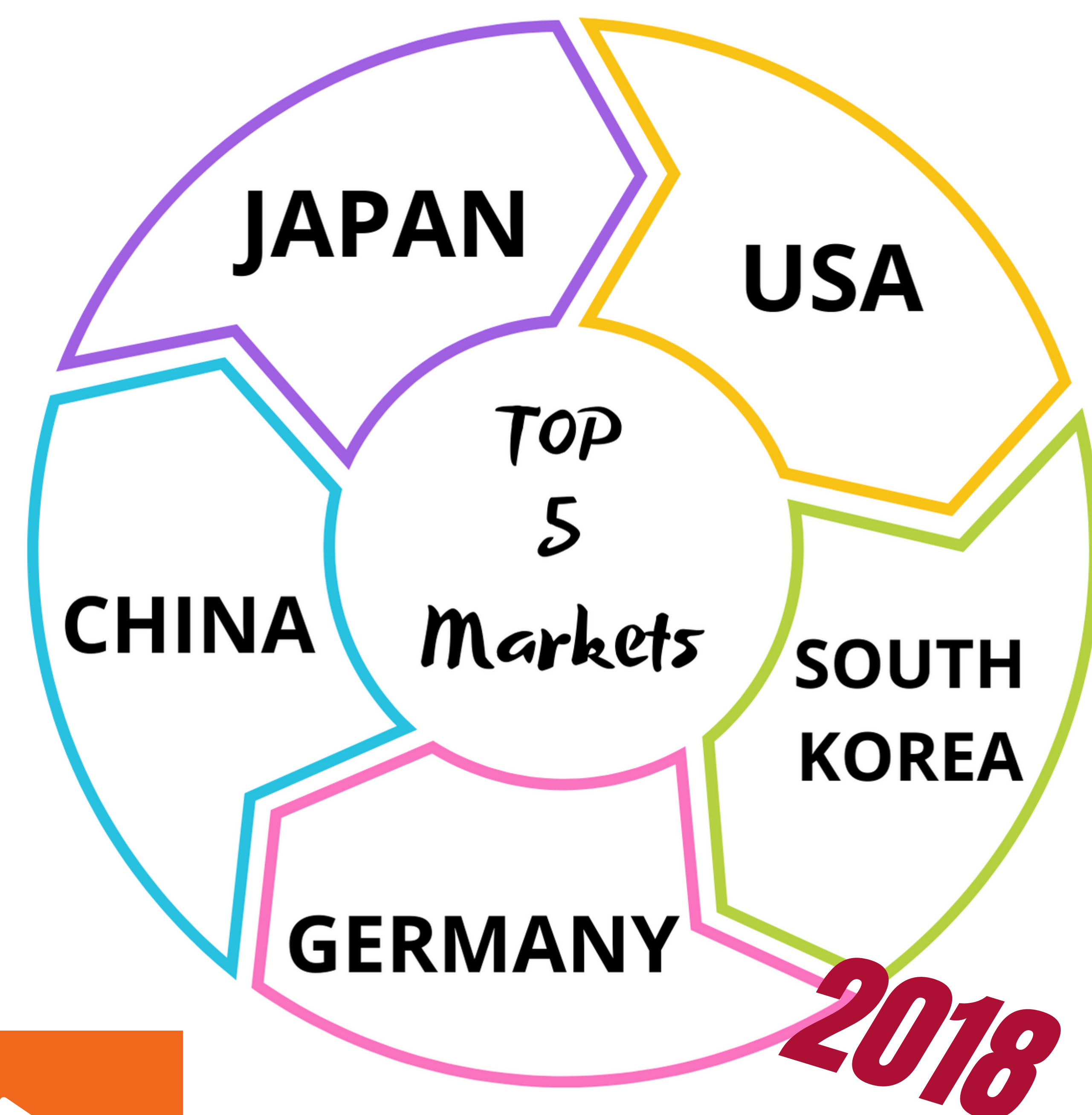


Robot Investment Reaches Record 16.5 billion USD – IFR presents World Robotics

- **Chinese manufacturers gain domestic market share**
- **US robot installations rose by 22 percent**
- **Europe’s robot installations rose by 14 percent**

- The new World Robotics report presented by the International Federation of Robotics (IFR) shows an annual global sales value of 16.5 billion USD in 2018
- A new record. 422,000 units were shipped globally in 2018
- An increase of 6 percent compared to the previous year. IFR forecasts shipments in 2019 will recede from the record level in 2018, but expects an average growth of 12 percent per year from 2020 to 2022.

“We saw a dynamic performance in 2018 with a new sales record, even as the main customers for robots – the automotive and electrical-electronics industry – had a difficult year,” says Junji Tsuda, President of the International Federation of Robotics. “The US-China trade conflict imposes uncertainty to the global economy – customers tend to postpone investments. But it is exciting, that the mark of 400,000 robot installations per year has been passed for the first time. The IFR’s longer term outlook shows that the ongoing automation trend and continued technical improvements will result in double digit growth - with an estimate of about 584,000 units in 2022.”



Asia, Europe and the Americas - overview

Asia is the world's largest industrial robot market. In 2018, there was a mixed picture for the three largest Asian markets: Installations in China and the Republic of Korea declined, while Japan increased considerably. In total, Asia grew by 1%. Robot installations in the second largest market, Europe, increased by 14% and reached a new peak for the sixth year in a row. In the Americas, the growth rate reached 20% more than the year before which also marks a new record level for the sixth year in a row.

Top five markets in the world

Five major industrial robot markets represent 74 percent of global installations in 2018: China, Japan, Republic of Korea, the United States and Germany.

China remains the world's largest industrial robot market with a share of 36% of total installations. In 2018, about 154,000 units were installed. This is 1% less compared to the previous year but more than the number of robots installed in Europe and the Americas together. The value of installations reached 5.4 billion USD – 21% higher than in 2017.

Chinese robot suppliers increased their share of total installations on the domestic market by 5 percentage points (2018: 27% vs. 2017: 22%). This result is in line with China's policy to promote domestic manufacturers. Installations of foreign robot suppliers on the other hand (including units produced in China by non-Chinese suppliers) decreased by 7% to about 113,000 units (2017: about 122,000 units). This reduction is also caused by a weakening automobile industry.

Japan's robot sales increased by 21% to about 55,000 units, representing the highest value ever for the country. The average annual growth rate of 17% since 2013 is remarkable for a market with an already highly automated industrial production. Japan is the world's number one industrial robot manufacturer and delivered 52% of the global supply in 2018.

Robot installations in the United States increased for the eighth year in a row to a new peak in 2018 and reached about 40,300 units. This is 22% higher than in 2017. Since 2010, the driver of the growth in all manufacturing industries in the U.S. has been the ongoing trend to automate

production in order to strengthen the U.S. industries in both domestic and global markets. Regarding annual installations, the country has taken third position from the Republic of Korea.

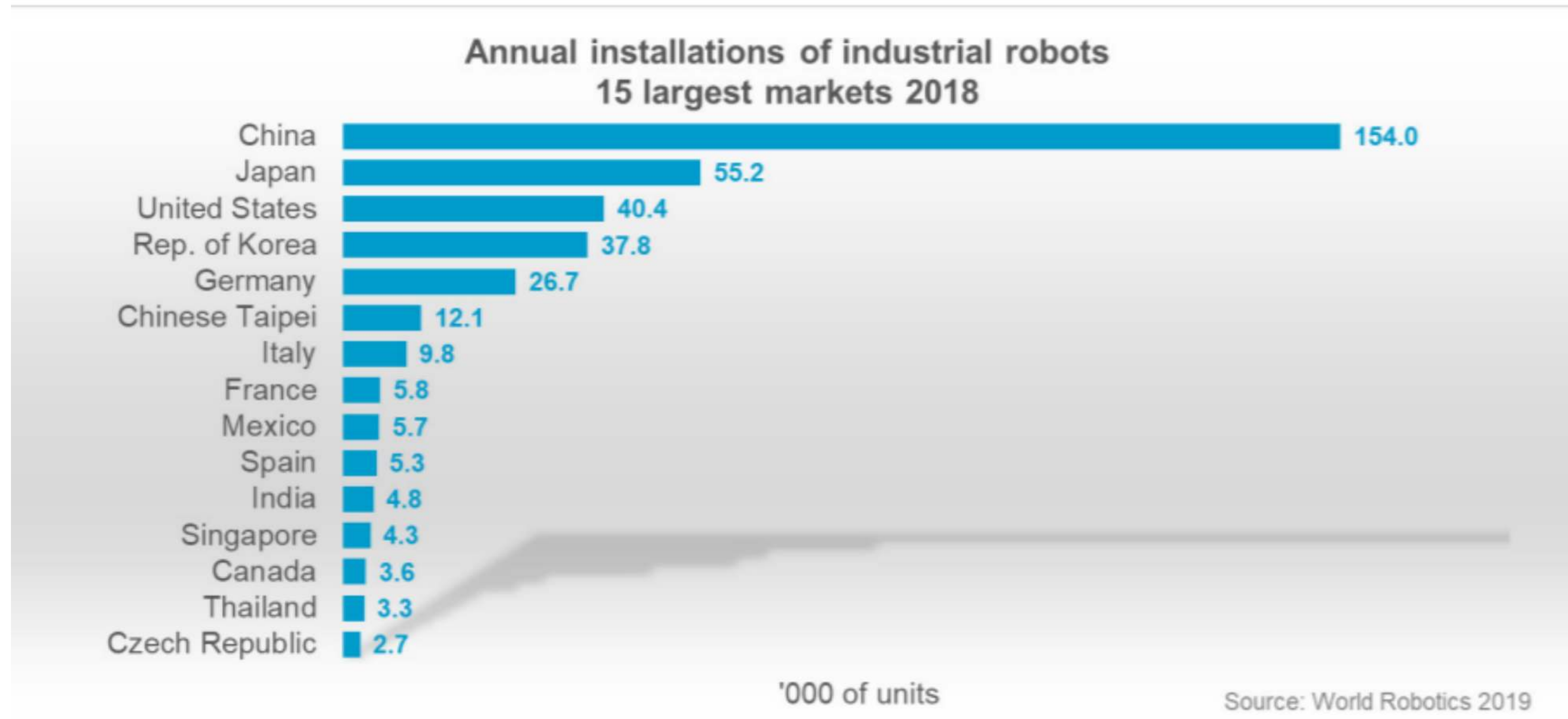
The annual robot installations in the Republic of Korea declined by 5% – about 38,000 units have been sold in 2018. The robot market strongly depends on the electronics industry that had a tough year. **Nevertheless, installations have increased by 12% on average per year since 2013.**

Germany is the fifth largest robot market in the world and number one in Europe, followed by Italy and France. In 2018, the number of robots sold increased by 26% to almost 27,000 units – a new all-time record. Installations are mainly driven by the automotive industry.

The automotive industry remains the largest adopter of robots globally with a share of almost 30% of the total supply (2018). **After a very strong year 2017 that saw a 21% increase of installations, this level was maintained and slightly increased by 2% in 2018.**

Investments in new car production capacities and in modernization have driven the demand for robots. Using new materials, developing energy efficient drive systems and high competition in all major car markets pushed for investments. 79% of industrial robot installations took place in 5 key markets: China (39,351 units), Japan (17,346 units), Germany (15,673 units), the United States (15,246 units) and the Republic of Korea (11,034 units). Interestingly, India, the world's fourth largest vehicle producer by OICA's production statistics, had just about 2,100 industrial robots installed in its automotive industry.

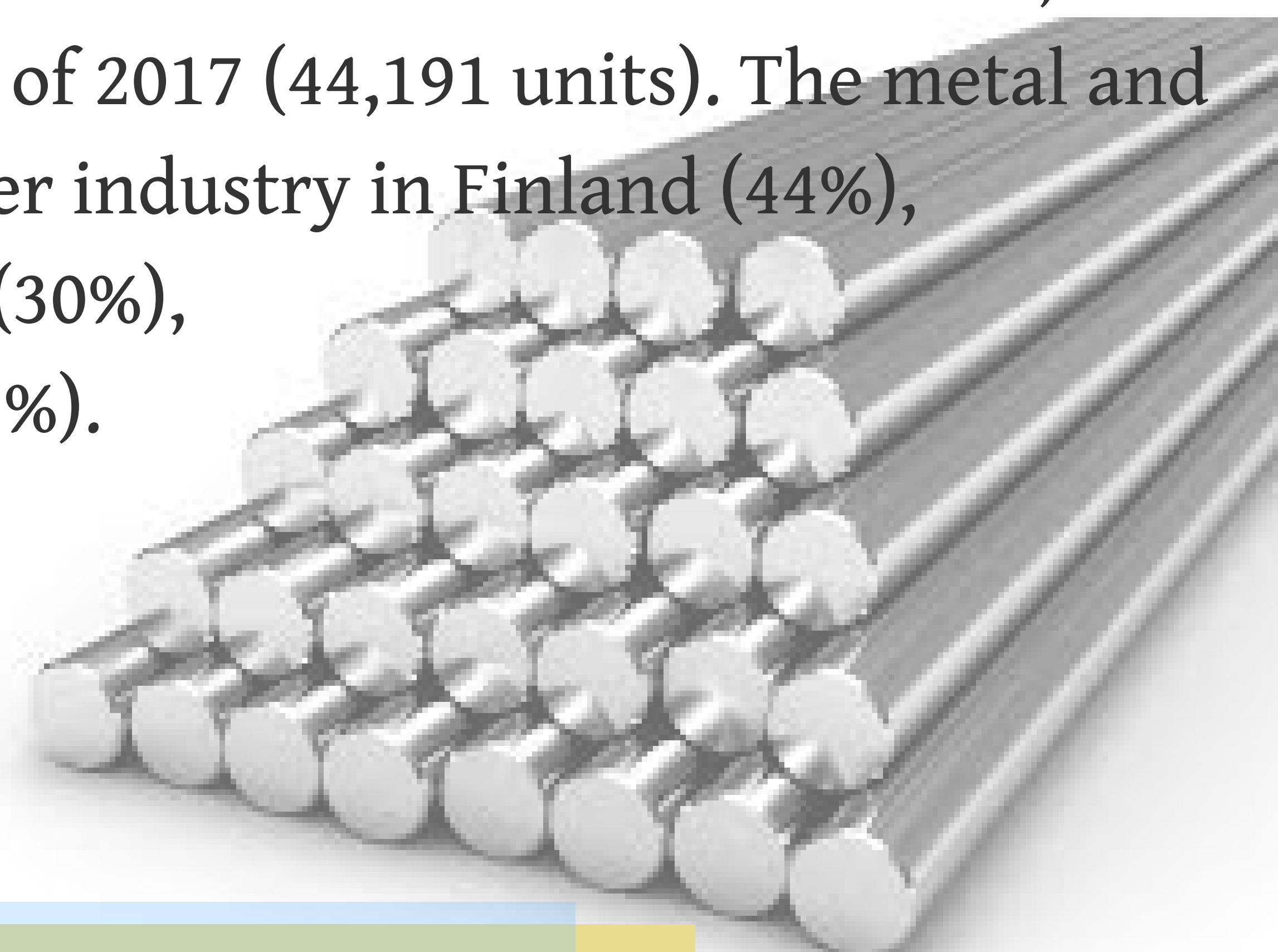
The electrical/electronics industry was about to replace the automotive industry as the most important customer for industrial robots in 2017. However, in 2018, global demand for electronic devices and components substantially decreased. This customer industry is probably the one most affected by the US-China trade crisis as Asian countries are leaders in manufacturing electronic products and components. Robot installations in this industry declined by 14% from their peak level of about 122,000 units in 2017 to 105,000 units in 2018. 79% of the total installations in the electrical/electronics industry were installed in three countries with major production sites: China (43%), Republic of Korea (19%), Japan (17%). Vietnam saw a one-off boost of installations in 2017 driven by a few major projects (7,080 units), but dropped back in 2018 (689 units).



Five major markets for industrial robots represent 74 percent of global installations.

The metal and machinery industry established itself as the third largest customer industry.

Installations accounted for 10% of total demand in 2018. Both producers of metal products (without automotive parts) and producers of industrial machinery, have bought substantial amounts of robots in recent years. Installations rose to about 43,500 units in 2018. This is 1% less than in the record year of 2017 (44,191 units). The metal and machinery industry was the largest customer industry in Finland (44%), Sweden (42%), Switzerland (40%), Belgium (30%), Austria (27%), Italy (26%) and Denmark (21%).



Robot use by industry worldwide

Robots designed for collaborative use (Cobots)

For the first time, World Robotics analyses the market for collaborative industrial robots (cobots). Cobots are designed to perform tasks in the same workspace as human workers. The IFR definition implies that a cobot is necessarily an industrial robot as defined in ISO 8372:2012. Despite a very strong media attention of cobots, the number of units installed is still very low with a share of 3.24% only. In 2018, less than 14,000 out of more than 422,000 industrial robots installed, were cobots. The year before that, roughly 11,100 units were cobots.

From 2017 to 2018, annual installations of cobots increased by 23%.

Appendix

The annual global sales value of 16.5 billion USD in 2018 is a projection based on market values reported by various national robotics associations. This encompasses only the robots. If software, peripherals, and systems engineering is included, the value is approximately 50 billion USD. Source:IFR



Industrial Transformation ASIA-PACIFIC 2019

Asia-Pacific's Leading Event for Industry 4.0

22-24 October 2019
Singapore EXPO

www.industrial-transformation.com

We help companies in Asia-Pacific start, scale & sustain their transformation journey.

CONNECT WITH US
CONNECT WITH ASIA-PACIFIC



Scan and pre-register your visit today.



Organised By



International Partner



Deutsche Messe

INDUSTRIAL
TRANSFORMATION
ASIA-PACIFIC

INDUSTRIAL
TRANSFORMATION
ASIA-PACIFIC

THE BEST SOCIAL ROBOTS, HUMANOID ROBOTS AND INDUSTRIAL ROBOTS IN THE WORLD RIGHT NOW



ASIMO is a humanoid robot created by Honda in 2000. Since then it has been continually developed and has become one of the worlds most advanced social robots. ASIMO has the ability to recognise moving objects, postures, gestures, understand its environment, and interact with humans.

Unique Features: ASIMO is currently the most physically capable social robot with the ability to walk, run and even use the stairs.

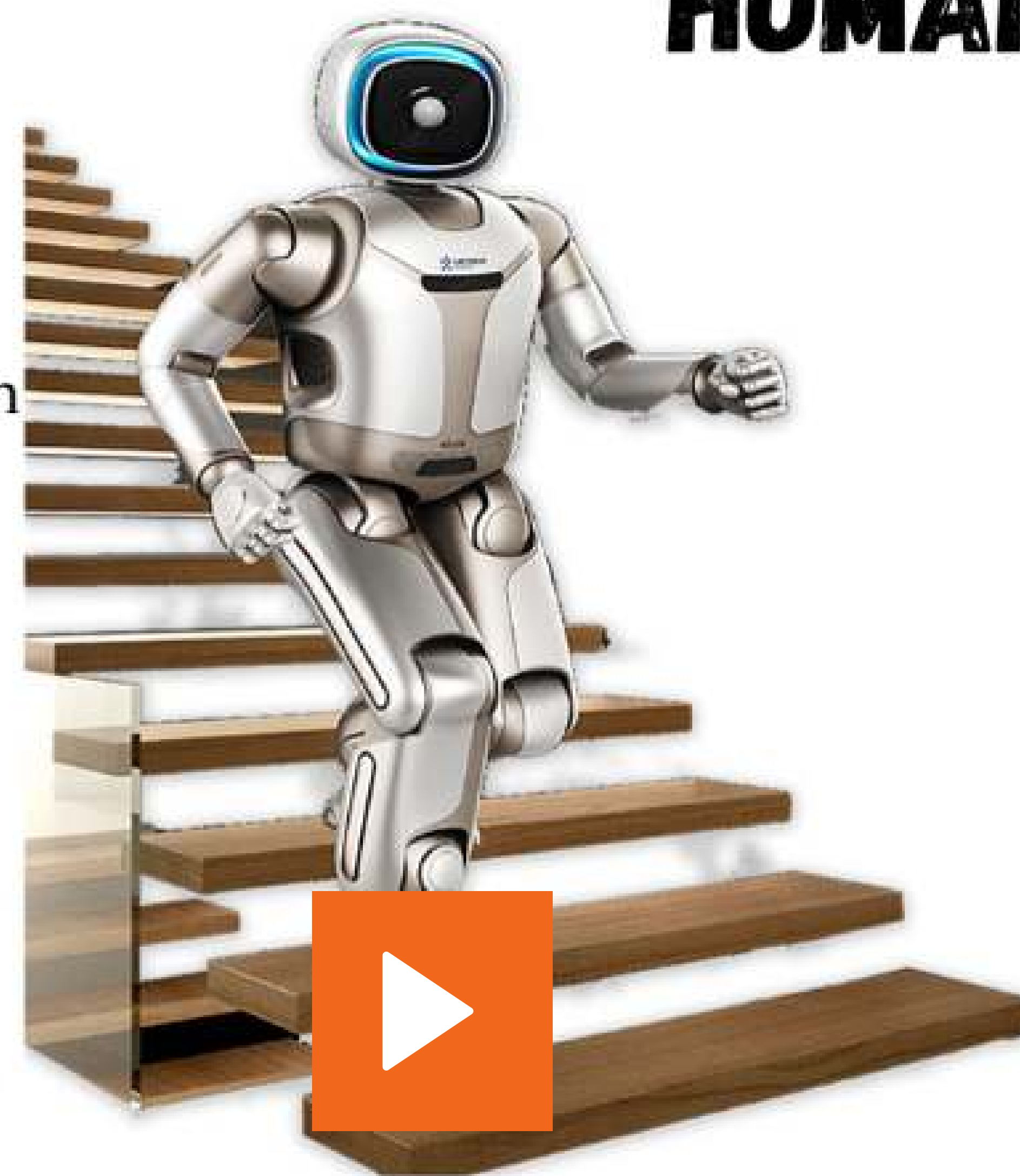


Introduced in 2014 PEPPER was showcased in Softbank's mobile stores in Japan and has become introduced in Renault dealerships across France.

Unique Features: Pepper is the world's first robot that is capable of recognising human emotions. Pepper is social, capable of having conversations with people, giving them directions and even dancing with them

UBTECH's Walker robot was revealed at CES 2019 and is due to be released in the next 18 months. Walker is an agile, intelligent, bipedal humanoid robot. Standing at 1.45m tall, the new version of walker is more advanced than ever, it is able to interact with people and even has the ability to walk smoothly and quickly and to grasp and manipulate objects.

Unique Features: Even though it has not been released yet, this robot has the potential to make history. Walker may be the first commercially viable, bipedal robot available to purchase.



THE BEST SOCIAL ROBOTS: HUMANOID



Samsung released three robots at CES 2019: Bot Retail, Bot Care and Bot Air. Bot retail is the biggest of the three with a large front display and basic shelving system at the back allowing it to deliver food or other items.

Unique Features: Samsung Bot Retail has the ability to interact with people, make payments using NFC technology and recognise objects using the front facing camera. Therefore, this robot looks like strong competition for SoftBank Robotics' Pepper and may be seen climbing the rankings very soon.



Originally released in 2008 and having been continually developed for over 10 years, Nao is one of the most iconic robots in the world right now. Used as the standard platform for the robo cup Nao has to be dynamic and agile.

Unique Features: Nao has the ability to interact with people but more significantly is able to work with Autistic children and run exercise sessions in care homes. Nao has a number of varied uses and undertakes valuable work in local communities.



Sanbot is an intelligent, cloud enabled service robot developed by Qihan technology.

Unique Features: Not only does Sanbot have the ability to interact with people, it can present using its front screen and even use its built-in projector to display graphics on a nearby wall, making Sanbot perfect for retail environments. Slightly smaller than Pepper, but under half the price, Sanbot is one of the leading social robots in the industry right now.



Romeo is another robot created by Softbank Robotics, launched in 2009. The Romeo robot was created as a robot companion with the ability to support the elderly and disabled.

Unique Features: Upon Romeo's release, he will have the ability to improve the wellbeing of people around him. He will be able to help with everyday tasks, assist when people have fallen over, make conversations and play games.



Attending Countries :

- Canada
- Australia
- Thailand
- Japan
- South Korea
- Singapore
- Nigeria
- Venezuela
- Philippines
- Indonesia
- New Zealand
- Vietnam
- United Kingdom
- Holland
- Myanmar
- Taiwan
- German
- Brunei

Attendance Includes :

Oil & Gas Executives / Manufacturers / Chairman / Director / Managing Director / Projector / General Manager / Head of Unit / Chief of Unit / Manager / etc.

Manufacturers / Project / Production / Operations / Field / Service / Program / Technology / etc.

Marketing Manager / Sales / etc.

Engineering / Design / etc.

Construction / etc.

Logistics / etc.

Introduction :

Oil & Gas Roadshow (OGRS) is introduced to working with you and other heavy industry companies to meet with oil & gas deal team, engineering companies, O&G, construction and rigging. We are looking for the oil & gas industry professionals to share their knowledge, experience and expertise. The OGRS is designed to help you expand your business, establish new relationships, and create new opportunities. The OGRS is a great platform for you to showcase your products and services, and to meet with other industry professionals. The OGRS is a great platform for you to showcase your products and services, and to meet with other industry professionals.

OGRS is organized by ALL CORP. SINGAPORE. The OGRS is organized by ALL CORP. SINGAPORE. The OGRS is organized by ALL CORP. SINGAPORE.

OGRS is organized by ALL CORP. SINGAPORE. The OGRS is organized by ALL CORP. SINGAPORE. The OGRS is organized by ALL CORP. SINGAPORE.

Visitor Profile Of Oil & Gas Roadshow :

- International energy industry
- Energy executives
- Executives & Owners
- Engineers / Field workers
- Engineering, construction & contracting services
- Environmental protection / safety experts
- Geologists / geophysical services & services
- Insurance / construction equipment
- Logistics & Field Services
- Manufacturing representatives / suppliers
- Marine services & construction
- Offshore platforms / suppliers / services
- Oil & gas equipment / contractors
- Marine support & construction
- Offshore platforms / suppliers / services
- Petroleum of plant
- Industrial operations / contractors
- Field operations & construction
- Power & Energy
- Project construction
- Rigging services (including rigging services)
- Safety & Environmental
- Rig / Fabrication / services
- Supply
- Field operations
- Transportation, storage & handling
- Marine & Logistics
- Offshore operations

Oil & Gas Roadshow Pre-Promotional Activities :

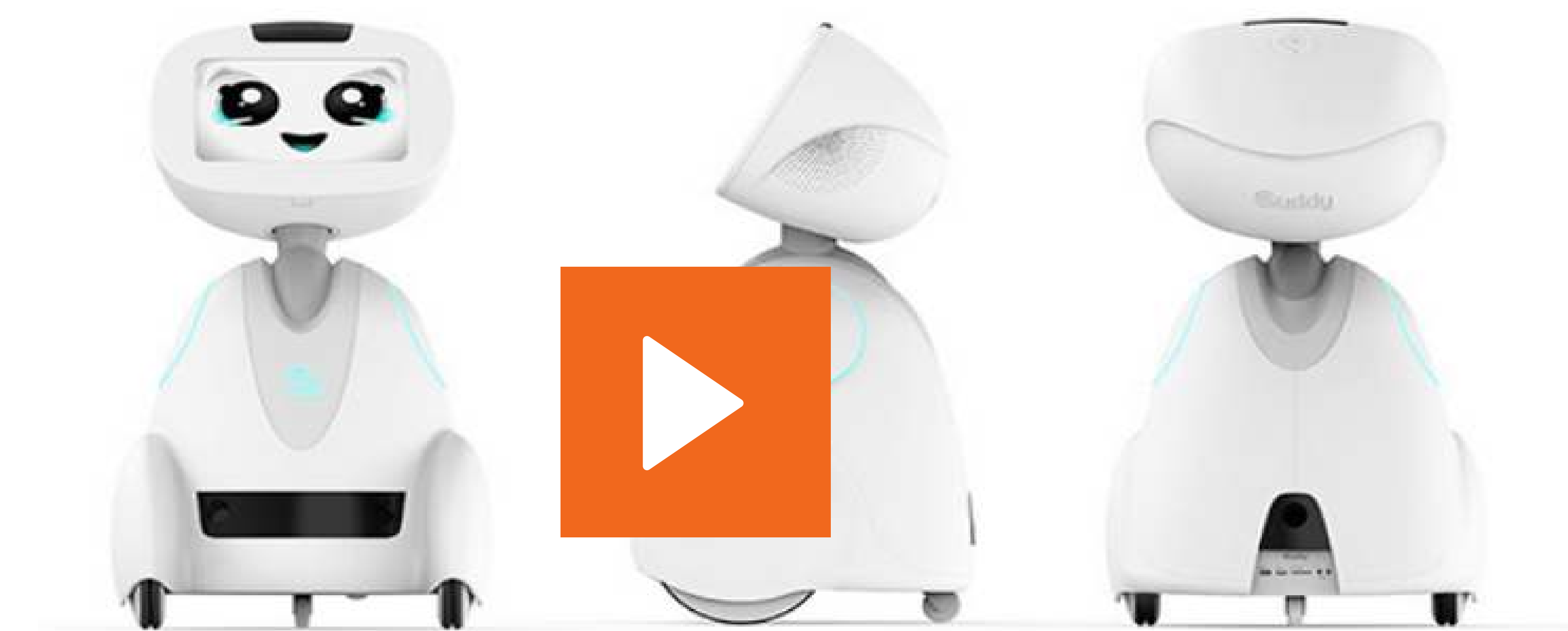
- Online advertising & social media promotion
- Invitations sent to local industry associations
- Email updates to targeted local industries
- Telemarketing to invite attendees
- Direct mailings to targeted local industries
- Direct mail will be provided to the industries of interest
- Direct mailings to the industries of interest
- Direct mailings to the industries of interest
- Direct mailings to the industries of interest

Paro is a therapeutic baby seal robot, intended to be cute in order to have a calming effect on patients in hospitals and nursing homes. Paro works in a similar way to animal-assisted therapy and has been found to calm people, especially with diseases such as dementia. But without the difficulties or risks associated with live animals!

Unique Features: Paro responds to petting and interaction by moving its tail and opening and closing its eyes. It can even actively seek out eye contact, respond to touch and cuddle with people.



NON-HUMANOID SOCIAL ROBOTS



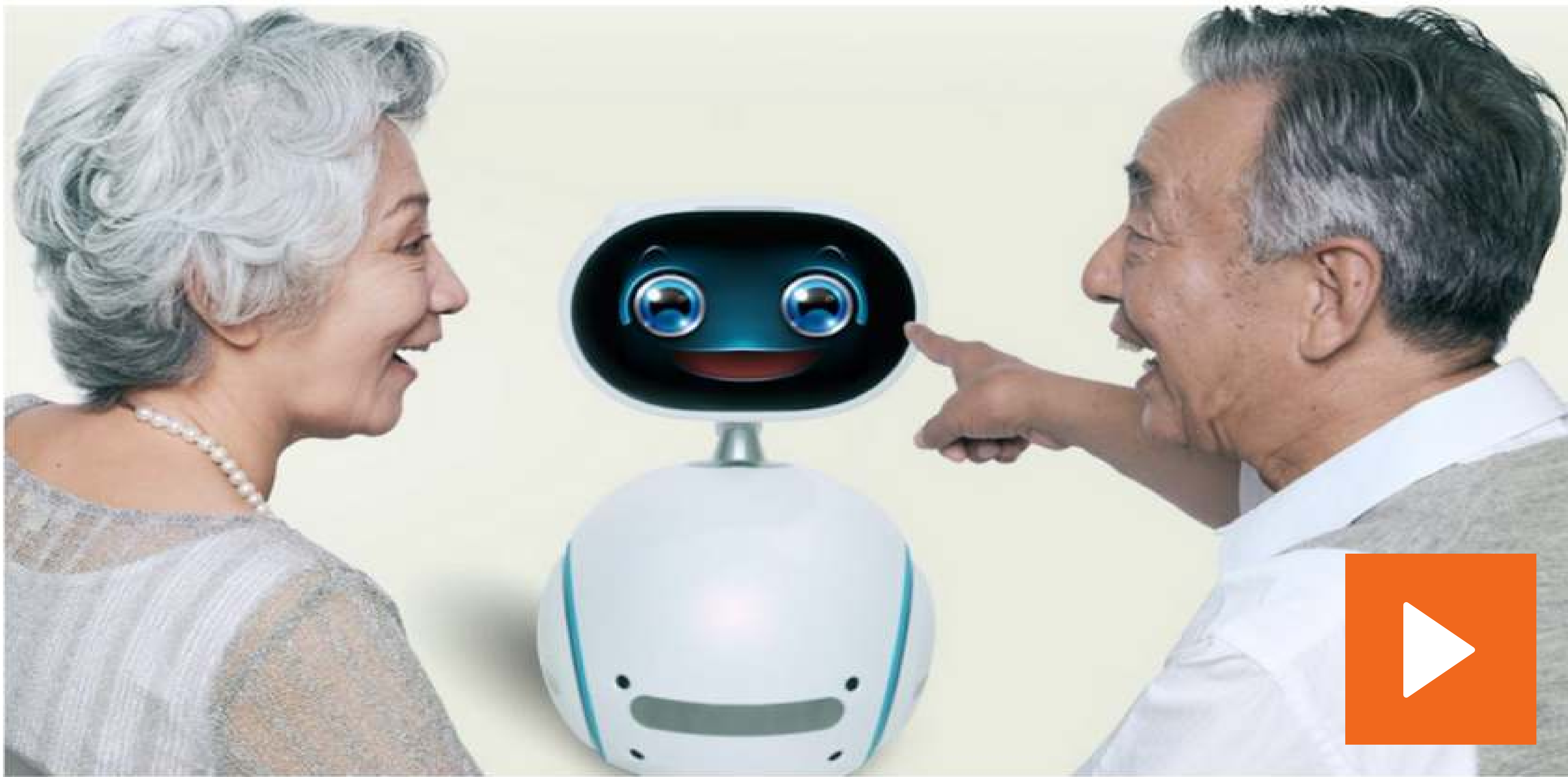
Buddy has been developed by Blue Frog Robotics and is designed as an emotional companion robot to be used in the home. Buddy connects, interacts and even protects people in the home.

Unique Features: Buddy is designed to be your personal assistant, watch over your home while you're away and even entertain children with games and other interactivities.



Miro is based on the simple premise that animals have qualities that are desirable in today's social robots. As a consequence, this robot is robust, adaptable and good at communicating its feelings.

Unique Features: Miro represents history in the making because it is one of the world's first robots that runs a brain-inspired biomimetic operating system. This means that Miro will act more like a pet than a robot.



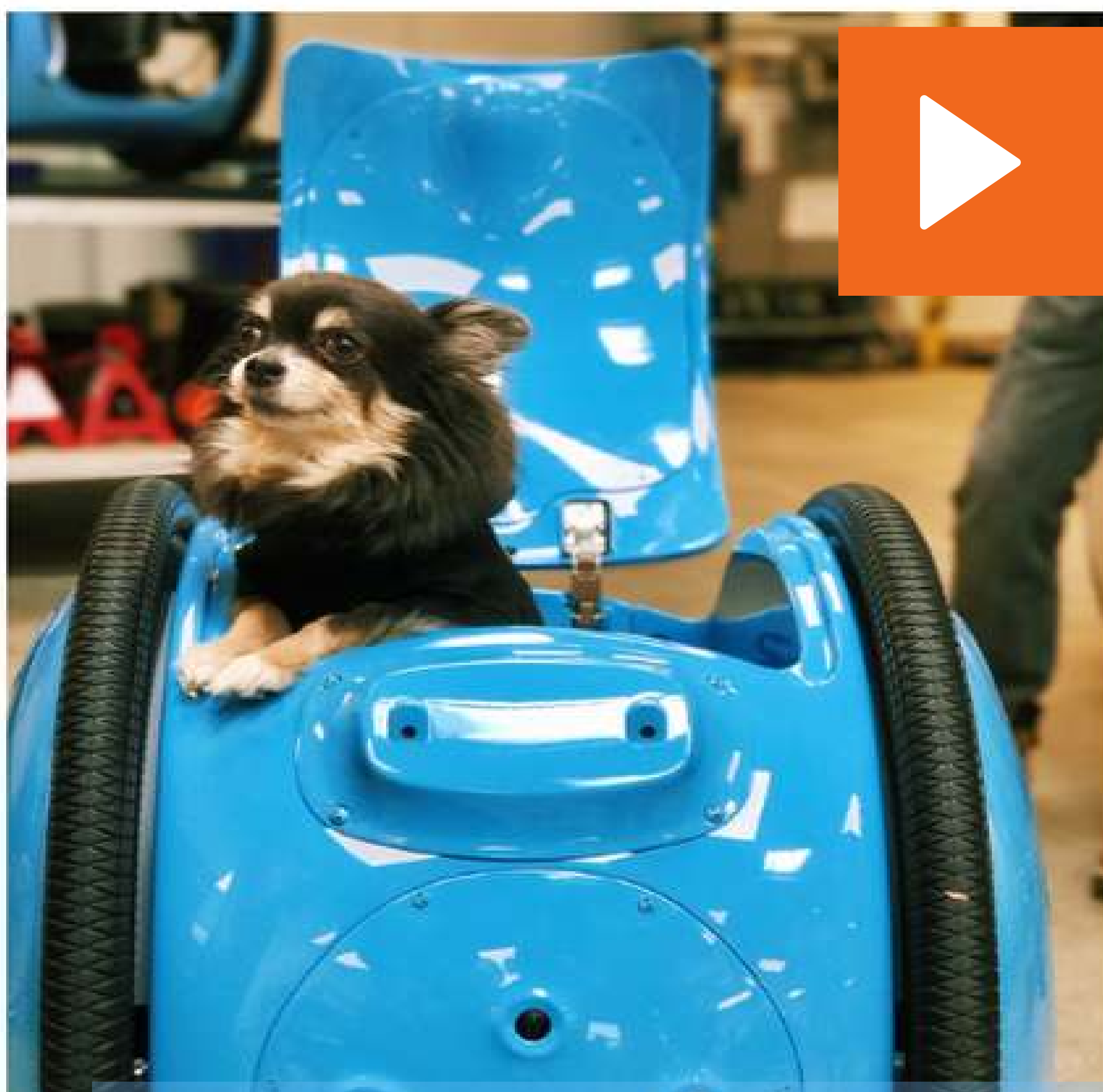
Developed by Asus, Zenbo is designed as a home healthcare assistant. Zenbo will be priced at \$600 however Asus did not announce when it would be available to consumers.

Unique Features: Zenbo is undoubtedly going to compete directly with Buddy. With the ability to control connected devices in the home, monitor security, perform various online tasks and interact with people, Zenbo may be more health care focused, but these two will certainly fight for market share.



Originally developed in 1998 Aibo is Sony's own robot dog. However, it has been recently redeveloped to be more advanced than ever!

Unique Features: Aibo has lifelike expressions and a dynamic array of movements. Its loveable behaviour brings warmth and delight to the everyday lives of its owners, with no fur to vacuum up!



Piaggio's 'Gita' cargo bot is designed to be the helping hand that everyone needs. Gita is designed to help you carry your things, helping free up your hands in order to get on with what's important.

Unique Features: It's designed to match human levels of mobility so it should be able to go almost anywhere. As well as the ability to follow your movements Gita also has the ability to navigate autonomously in a mapped environment. This is certainly a robot worth keeping an eye on, it could one day revolutionise the humble shopping trolley.



UNI-DRIVE TECHNOLOGIES SDN BHD (299932-X)

23, Jln Utama 2/18, Tmn Perindustrian Puchong Utama, 47140 Puchong, Selangor, Malaysia.

Tel : 603-80616733 Fax : 603-80619733 E-mail : unidrive@tm.net.my Website : www.uni-drive.com



Narrow V Belt



Cog Narrow V Belt



Banded V Belt



Cog Banded V Belt



Double V Belt



Poly Rib Belt



VS Belt



Agriculture VS belt



Rubber Timing Belt



HTD / RPP Belt



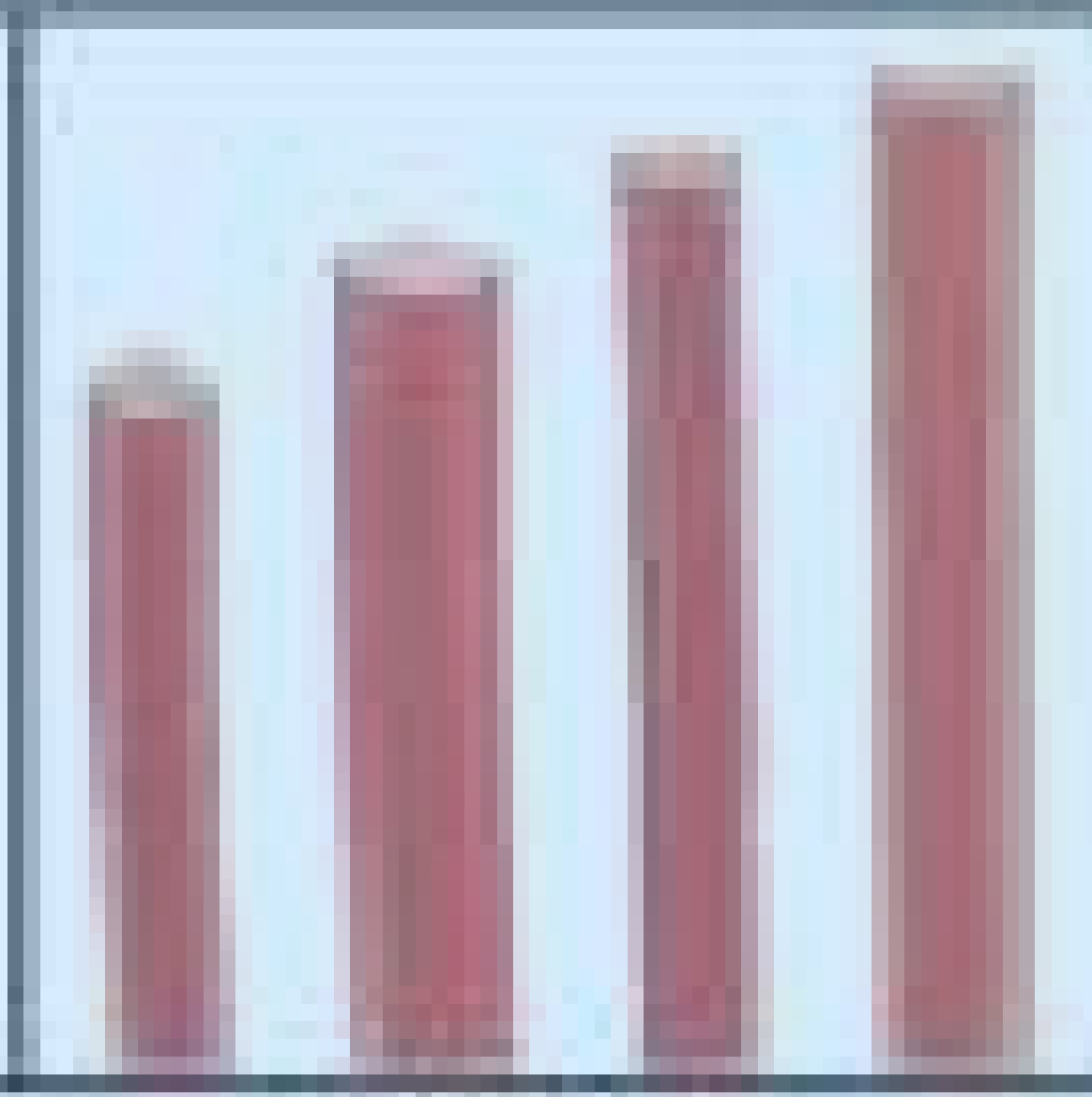
PU Timing Belt



Open End Timing Belt



Rubber Conveyor Belt



PU V Belt



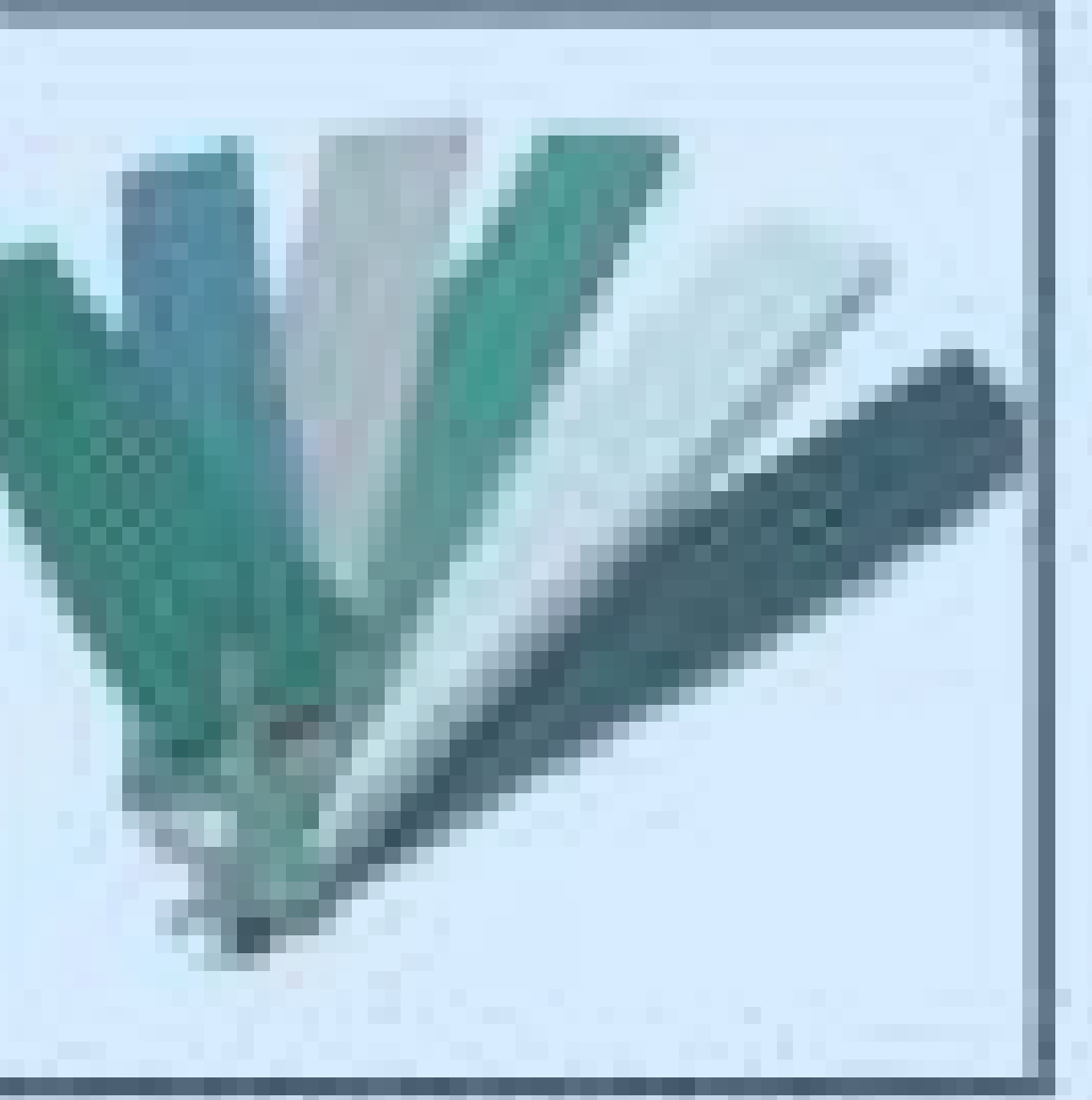
Polycord



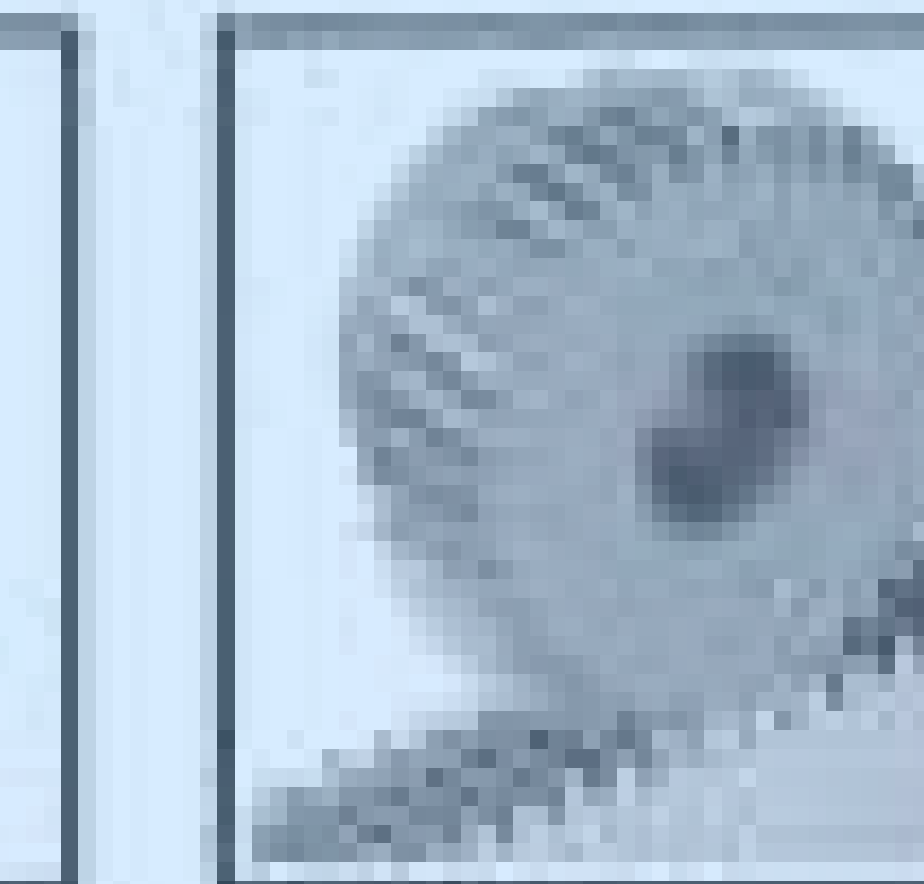
Link Belt



Profile Timing Belt



PU / PVC Flat Belt

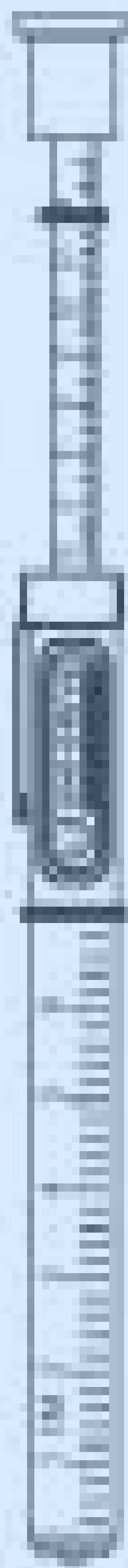


OLD METHOD (10% ACCURATE)



NEW METHOD (80% ACCURATE)

Get a belt tensiometer gauge to prolong your belts life.



Branch :

Ipoh : 05-5473200 Johor : 07-3536657

Penang : 04-5076778 Klang : 03-32906316

24 hrs hotline service : 012-3535595

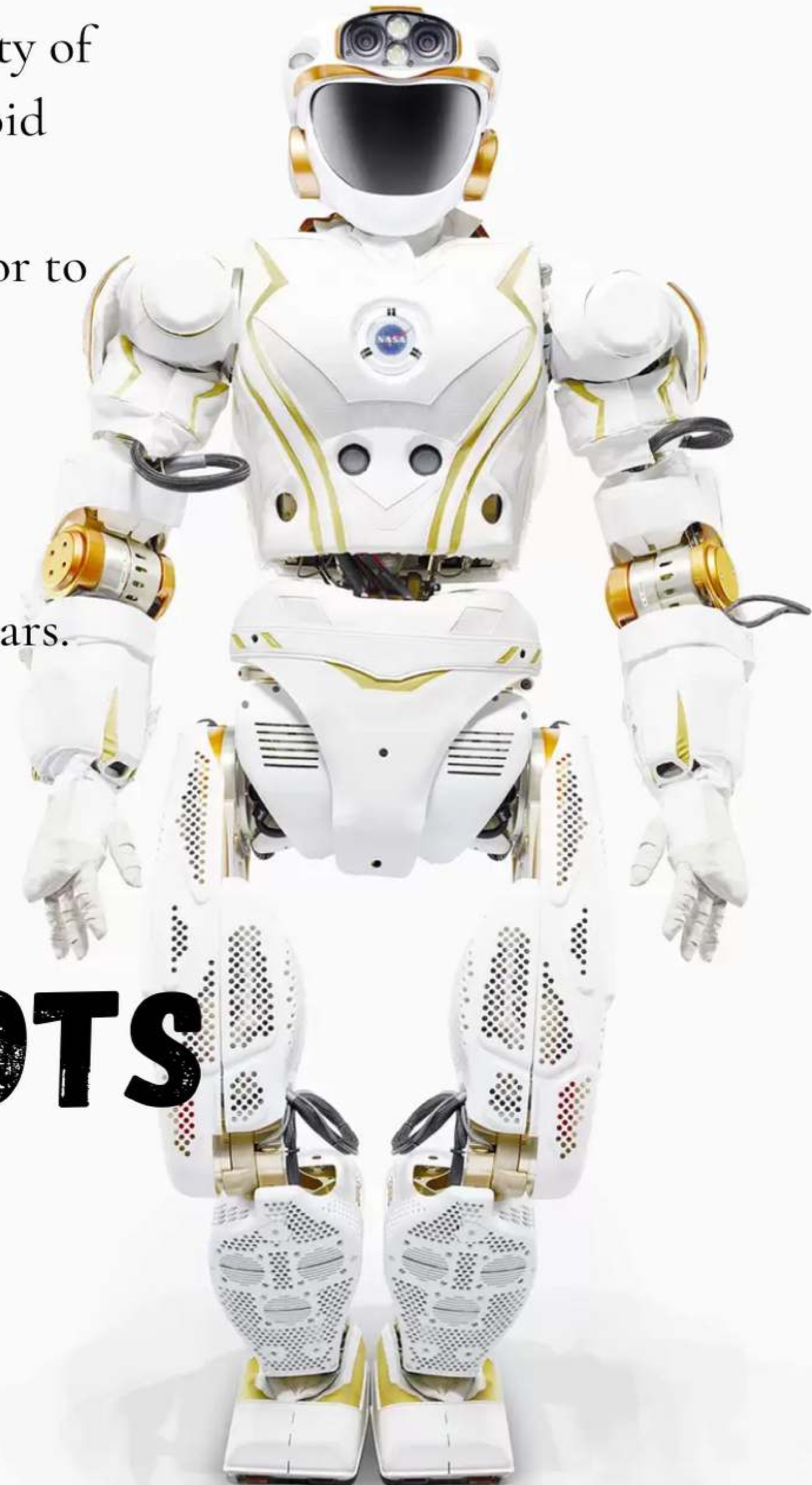
Refer to our advertisement under "CHAIN", "COUPLING" & "PULLEY". Location Map refer to "CHAIN"

Developed in collaboration with NASA and the University of Edinburgh, **Valkyrie** is one of the most advanced humanoid robots in the world. Valkyrie has been designed with the ability to one day assist the setup of habitats on mars prior to human arrival.

Unique Features: Valkyrie is designed to work in environments too hazardous for astronauts which would allow for the building of safer habitats and colonies on mars.



INDUSTRIAL ROBOTS



Spot Mini is the first robot from Boston Dynamics that is becoming commercially available. This robot is designed to be used in a variety of functions including security, manufacturing and delivery.

Unique Features: Spot Mini is remarkable for its ability to manage on uneven terrain in both internal and external environments, an impressive and useful quality for a robot of today.



Atlas, developed by Boston Dynamics is the latest in the line of advanced humanoid robots that they're developing.

Unique Features: Atlas is extremely mobile and has the ability to balance while performing tasks such as carrying items even when it is pushed. Atlas's hardware takes advantage of 3D printing. This is significant not only because it saves weight and space but because this results in a remarkably compact robot with high strength to weight ratio.

HRP-5P is an advanced humanoid. Created by AIST, HRP-5P is a research robot designed to be able to assist with building and manufacturing processes.

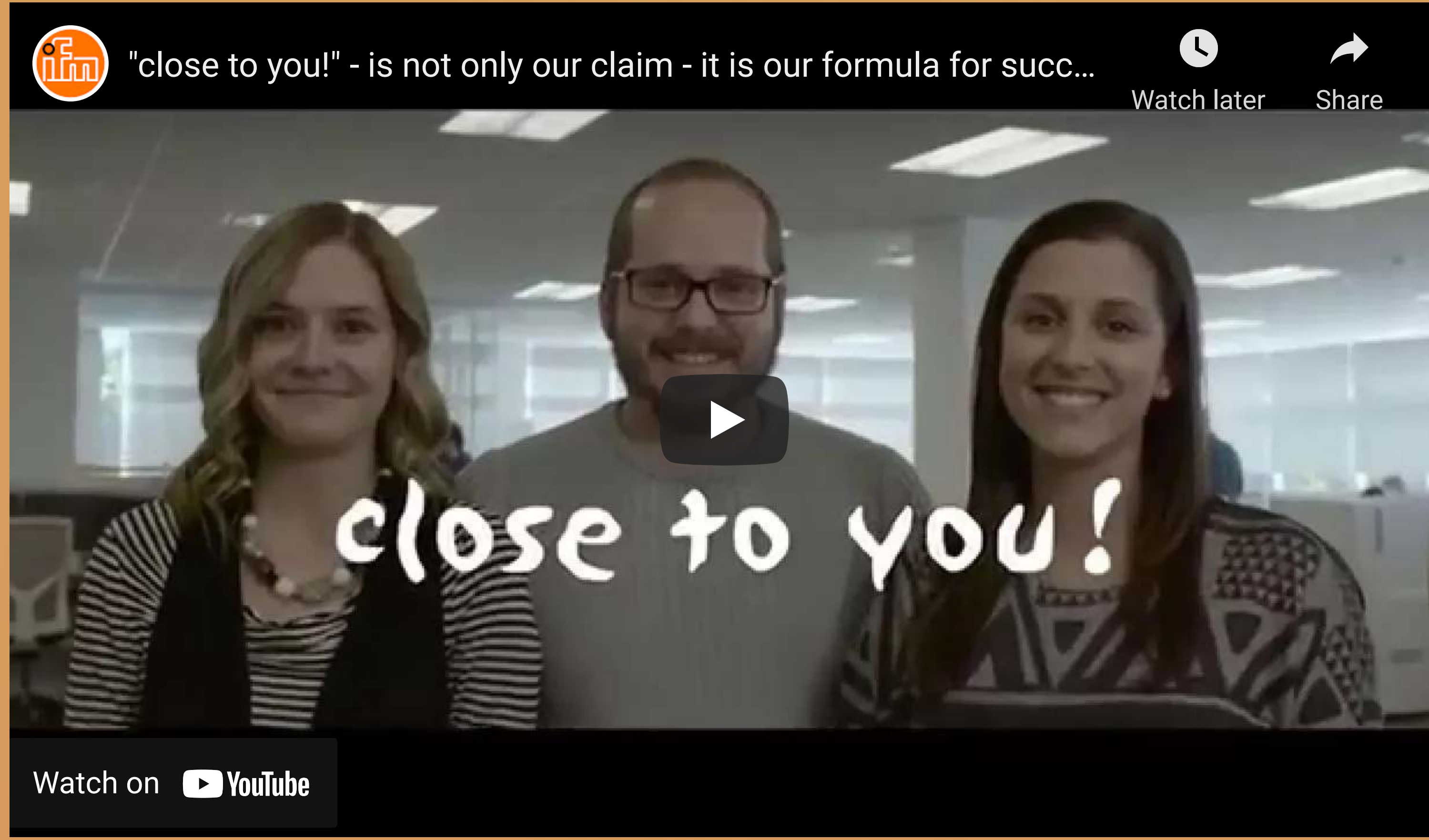
Unique Features: It is capable of using power tools and handling large objects like drywall sheets. With the construction sector contributing 7% of the UK's overall GDP, this could be a game changer for large and small businesses alike.



Baxter, built by Rethink Robotics, was introduced in September 2011 and is one of the first collaborative robots. Baxter has a screen 'face' that allows it to display dynamic facial expressions to show its mood.

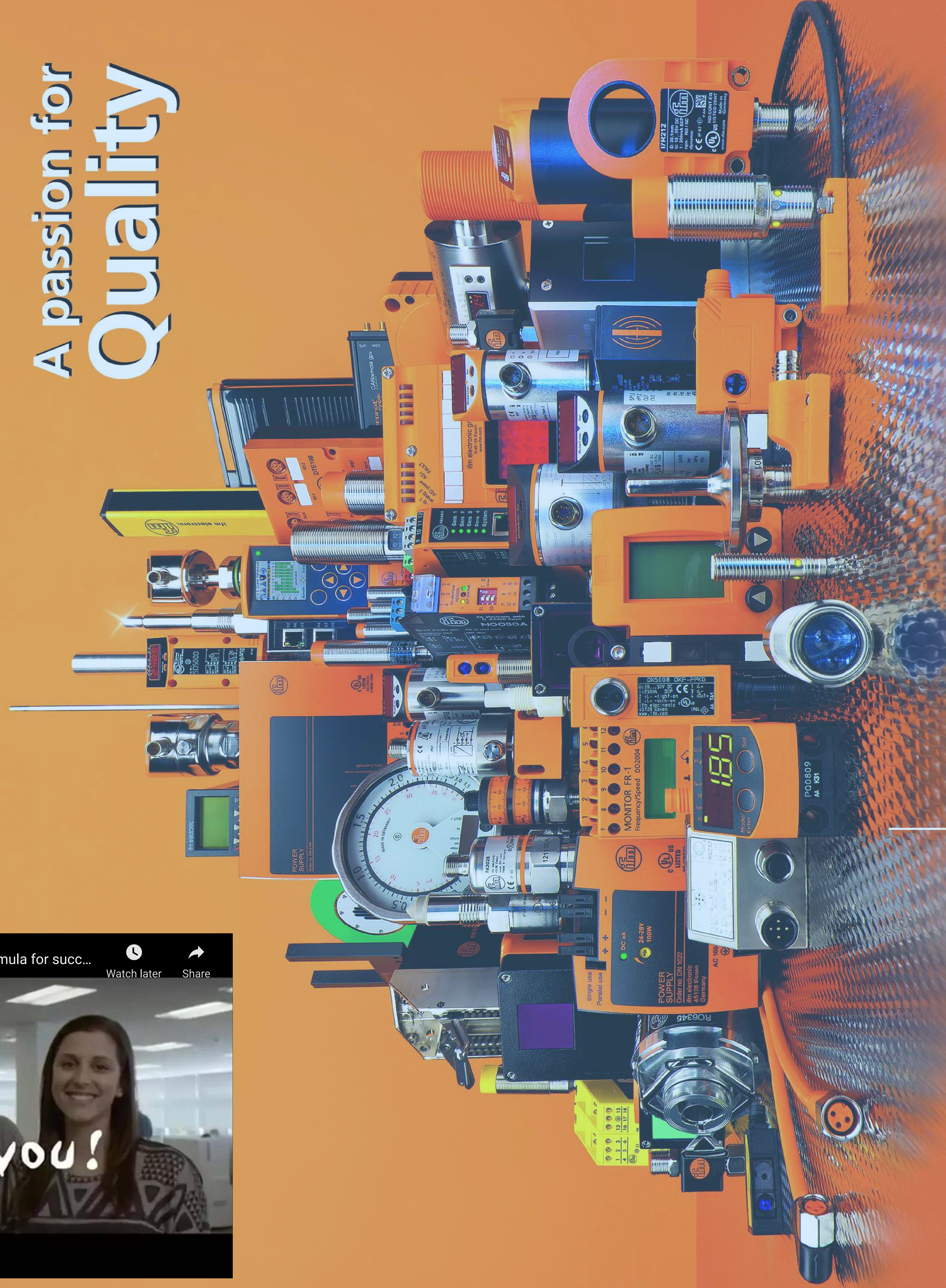
Unique Features: As opposed to traditional robots that require specific programming, Baxter can be taught a task physically, for instance, by moving its hands to perform the task, then the computer can memorise and be able to repeat the task autonomously.

(Source: Luca Robotics)



ifm electronic

A passion for Quality



ifm electronic stands for an incredibly wide range of industrial quality sensors & systems, for factory automation & process control applications. Launched in 1969, as man set foot on the moon, the company has continued to research, develop & manufacture innovative products to optimise advanced technical processes. With incredible industry & application know-how, ifm provide successful solutions that are innovative, yet economical. We have the product range & flexibility required to meet our customer's expectations. From an individual sensor, through to a complete system. Present in more than 70 countries, 5,000 direct employees service & support installations with over 100,000 customers, in every industry. Your satisfaction is our goal!

ifm – close to you!

sales.my@ifm.com

Tel: +603 8063 9522

New QVI India Office



A Division of Quality Vision International

QVI has opened a new office in Pune, India. The formal opening ceremony was held Friday, 1 February 2019, and was attended by customers, guests, and media. The new office was inaugurated by Mr. Fred Mason, Senior Vice President of Marketing, in presence of Ms. Therese Corrigan-Bastuk, Product & Brand Marketing Director, from QVI headquarters in the USA, and Mr. Shreyansh B Hippargi, Managing Director of QVI India Pvt. Ltd. The Pune office joins the existing headquarter office in Bengaluru. These two offices will act as bases of operations for sales and service of the company's products in southern India.



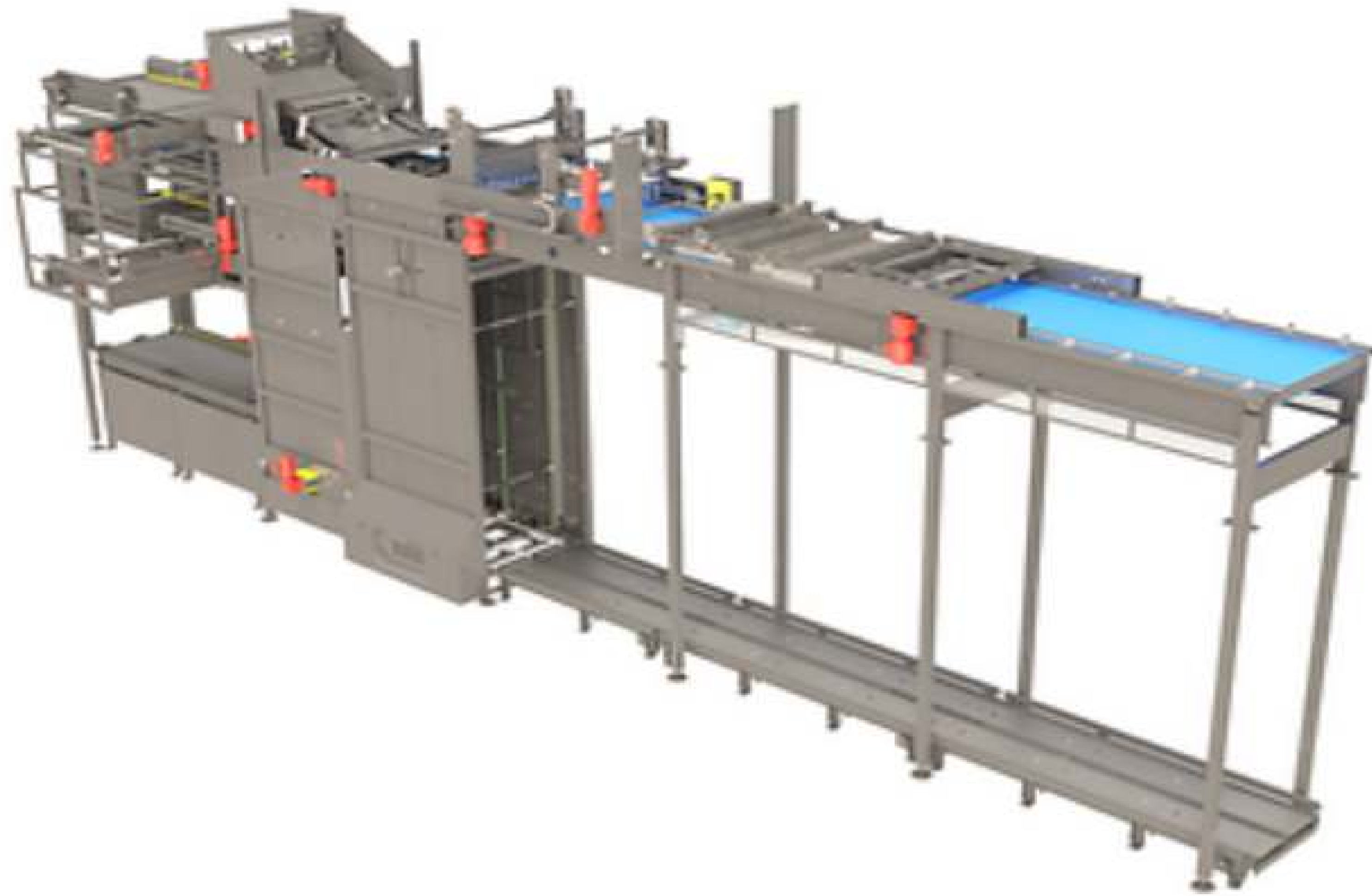
Robot-controlled friction stir welding for e-mobility: KUKA receives order from automotive manufacturer SAIC Volkswagen

KUKA received a major order from the Chinese automotive manufacturer SAIC Volkswagen Automotive Co., Ltd. The joint venture based in Anting near Shanghai relies on KUKA.ServoGun software for controlling spot weld guns.

The first Volkswagen production plant specifically geared to the construction of MEB vehicles (Modular Electrification Toolkit) is currently being built in Anting. The modular toolkit allows the production of numerous different electric car models at moderate prices. Cars and battery systems are to be manufactured at the plant starting in 2020. The order has a value in the lower double-digit million euro range and was booked in the second quarter of 2019. "With this order, we are continuing to expand our leading position at Volkswagen in China," says Peter Mohnen, CEO of KUKA Group. "As a result, we are increasing the market share of KUKA robots in electric car production."



Emerson and Arrowhead Systems Partner on Next-Gen, Edge-based Machine Health Monitoring Solution



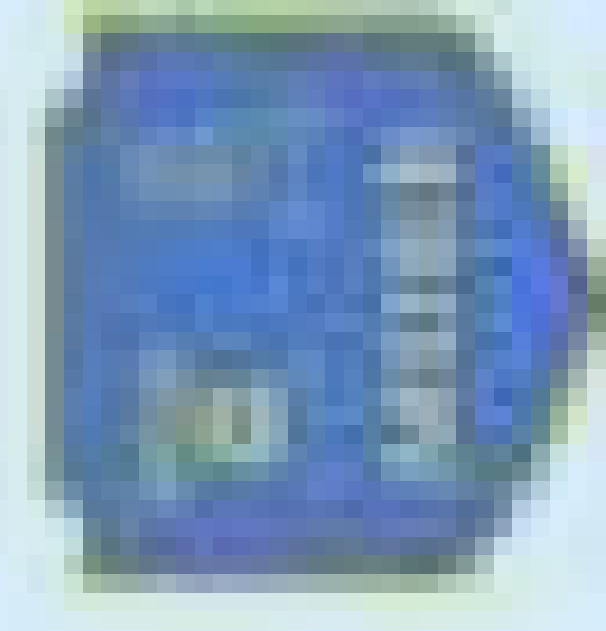
Emerson and Arrowhead Systems, Inc. announced today they have partnered to produce a next-generation, machine health monitoring solution which will increase uptime for high-speed palletizer production used in container stacking but is also adaptable for use with other primary products. The Busse SJI Viper™ High Speed Bulk Palletizer and Alpha Turbo™ High Speed Depalletizer are paired with Emerson's machine health monitoring to give customers a solution for greater overall equipment effectiveness (OEE) by monitoring, in real-time, critical motion and pneumatic system parameters including air flow, pressure, vacuum, mechanical actuation speeds and motor vibration. System analytics and health information is processed at the edge via a local data historian with both local display or remote monitoring on a tablet or smartphone giving operators an easily accessible tool to monitor health. "This solution offers the quickest and most scalable way to increase OEE and ultimately increase the overall production efficiency of your plant operations," said Dana Greenly, director of business development for food and beverage packaging with Emerson's Automation Solutions business.

SAP and UNICEF partner to give young people in Viet Nam job skills training

SAP and UNICEF announced a new partnership to provide quality education, life skills and digital skills training to adolescents in disadvantaged communities in Viet Nam, preparing them for decent work and active citizenship. The three-year partnership, joining hands with the Government of Viet Nam, will focus on enhancing digital and transferable skills for 11,000 secondary school and TVET students in Viet Nam in the first year, to allow them to develop to their full potential and support employability. Special attention will be given on the inclusion of girls, including those from ethnic minorities as well as adolescents with a disability.



Endorsed By:

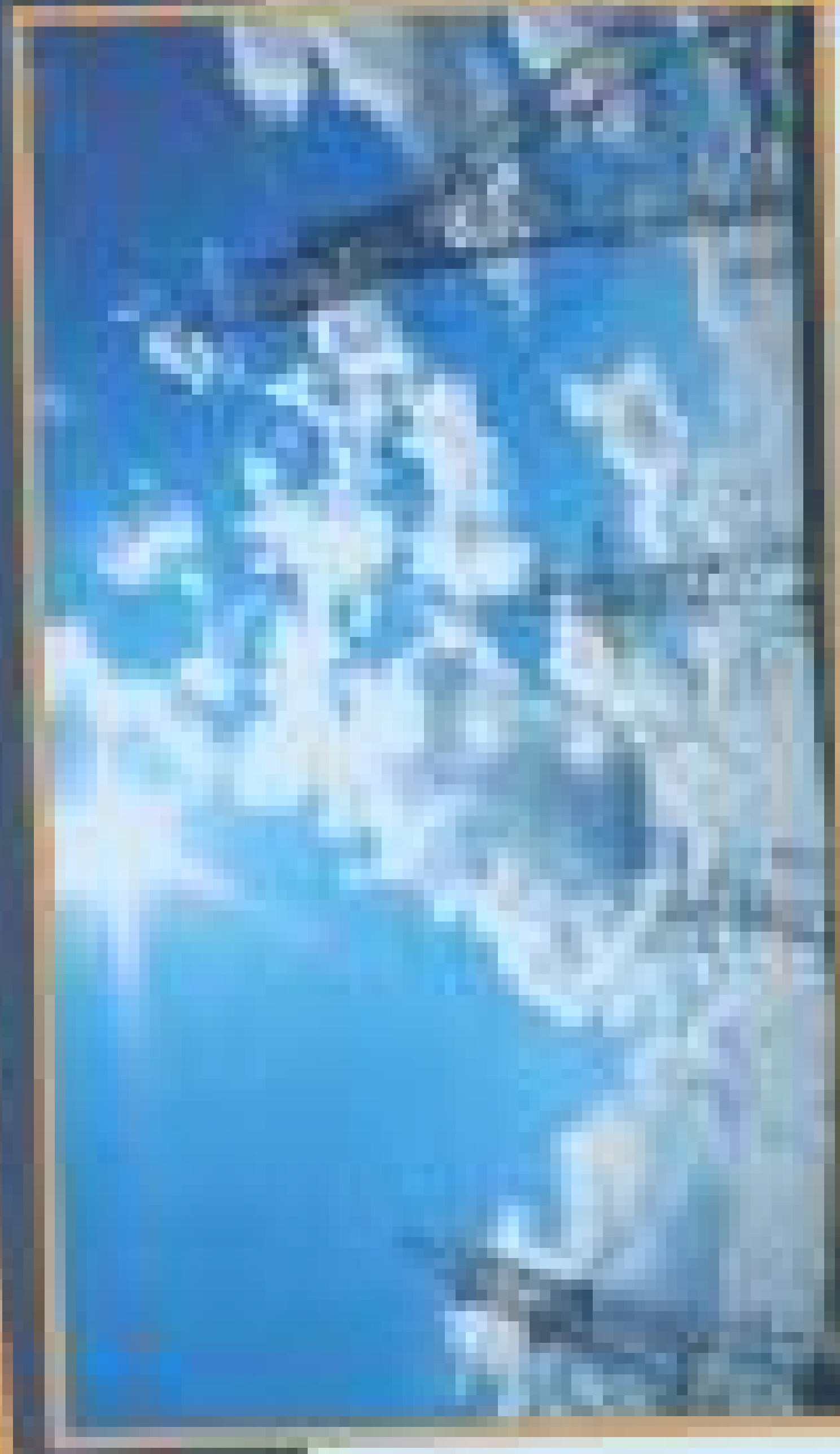


Organize By:



ALL CORP

Electricity & Energy
Expo 2019



Tatmadaw Hall, Yangon, Myanmar
29 November - 1 December 2019
9 am - 5 pm

Contact Us:

+959 3033 1405

+607-336 5039 / +6016-218 12185

 dagonexhibitions@gmail.com

 info@IndustrialRoadshow.com

NUSANED™ SIGNS THREE MOUS AT FII TO ATTRACT INVESTMENTS



SABIC leaders joined international partners and Saudi business leaders at the third annual Future Investment Initiative (FII) in Riyadh on October 30 and signed three MOUs with international partners through the company's national initiative, Nusaned™. The foundation for the MoUs were laid through SABIC's Local Content and Business Development Unit, and could generate nearly SR 495 million for the Saudi economy. The MOUs cover a range of projects and companies leveraging SABIC's products and solutions – from construction to water infrastructure, energy and industrial machinery. This diversity of offerings from SABIC demonstrates the value of the company as a key enabler of Saudi Arabia's economic diversification under Vision 2030. Most importantly, the investments will help generate jobs for Saudis in the Kingdom. The MoUs include agreements with: Taqnia Energy for energy-related industries and services, smart and innovative technologies in sorption cooling, waste water treatment, smart pole (ICORE), and smart grid solutions; Baker Hughes to enable several projects in the water treatment and chemical products required in the oil field; Aurora Motors and AlKhorayef Group to support localizing high efficiency electric motors.

PETRONAS Floating LNG Satu Achieves Its First LNG Drop Post Relocation

PETRONAS achieved its first liquefied natural gas (LNG) drop by its floating LNG facility, PETRONAS Floating LNG Satu (PFLNG Satu) at the Kebabangan cluster field, 90 kilometres offshore Sabah, recently. Operated by Kebabangan Petroleum Operating Company Sdn Bhd (KPOC), Kebabangan field is the second location for PFLNG Satu after its successful operation in Kanowit field, Sarawak. The introduction of first gas into the PFLNG Satu, achieved on 4th May 2019, was from Kebabangan field to the PFLNG Satu's turret system via a 5-km flexible pipeline. The commencement of a series of start-up activities included the cooling down of natural gas until the production of the first LNG drop on 7th May 2019, just 3 days after. PETRONAS Vice President of LNG Asset Zakaria Kasah said: "This achievement showcases our focused execution and close collaboration efforts, within PETRONAS as well as externally with the State government and regulatory bodies. We not only prove our concept of relocatable floating LNG facility, but we have also seamlessly achieved the first LNG drop in just 3 days after first gas in. This is indeed another proud moment and a great milestone for PETRONAS and the floating LNG industry." Designed for water-depth of between 70 metres and 200 metres and a processing capacity of 1.2 million tonnes per annum (MTPA) with 155 crew onboard, PFLNG Satu will support PETRONAS' global LNG portfolio and enhance its reputation as a preferred and reliable LNG supplier. The first LNG cargo delivery at the new field is expected in June, 2019.



ABB to strengthen e-mobility portfolio with acquisition of Chinese EV charging provider Chargedot



ABB is to acquire a majority stake of 67 percent in Shanghai Chargedot New Energy Technology Co., Ltd. (“Chargedot”), a leading Chinese e-mobility solution provider. The transaction is expected to be completed in the coming months and ABB has the possibility to increase its stake further in the next three years. Chargedot is a natural fit for ABB, which as a global leader in sustainable transportation infrastructure, already offers solutions from grid distribution to charging points for cars and trucks, as well as for the electrification of ships, railways, trams, buses and cable cars. The acquisition will strengthen ABB’s relationship with leading Chinese electric vehicle manufacturers and broaden the company’s e-mobility portfolio with hardware and software developed specifically for local requirements. ABB Robotics is the leading supplier of robot units and software to the assembly lines of Chinese EV manufacturers.

Rockwell Automation Joins Forces with Accenture, Microsoft, PTC, ANSYS, and EPLAN to Help Businesses Simplify Digital Transformation

Businesses that are digitally transforming their operations need an ecosystem of partners that can help them simplify technology deployments and quickly achieve goals like higher productivity. The new Rockwell Automation Digital Partner Program connects companies to expertise and solutions from market leaders like Accenture, Microsoft, PTC, ANSYS, and EPLAN to streamline the implementation and enhance the quality of digital initiatives. Through the Digital Partner Program, businesses can consult with industry advisors to create roadmaps for their digital initiatives and learn how industrial IoT concepts like digital twin, the factory of the future and a connected workforce can improve their uptime and efficiency. During implementation, businesses will have access to integrated hardware, software and turnkey systems from industry leaders that improve business performance leveraging their existing assets.



MURR ELEKTRONIK

PAN-M PTE LTD

Blk 1004 Toa Payoh Ind Pk #03-1489, S(319076)

Tel: +65 62524864 Fax: +65 62529884

Email: alm@pan-m.com.sg



ELECTRONICS IN THE
CONTROL CABINET

INTERFACES

CONNECTION
TECHNOLOGY

I/O SYSTEMS

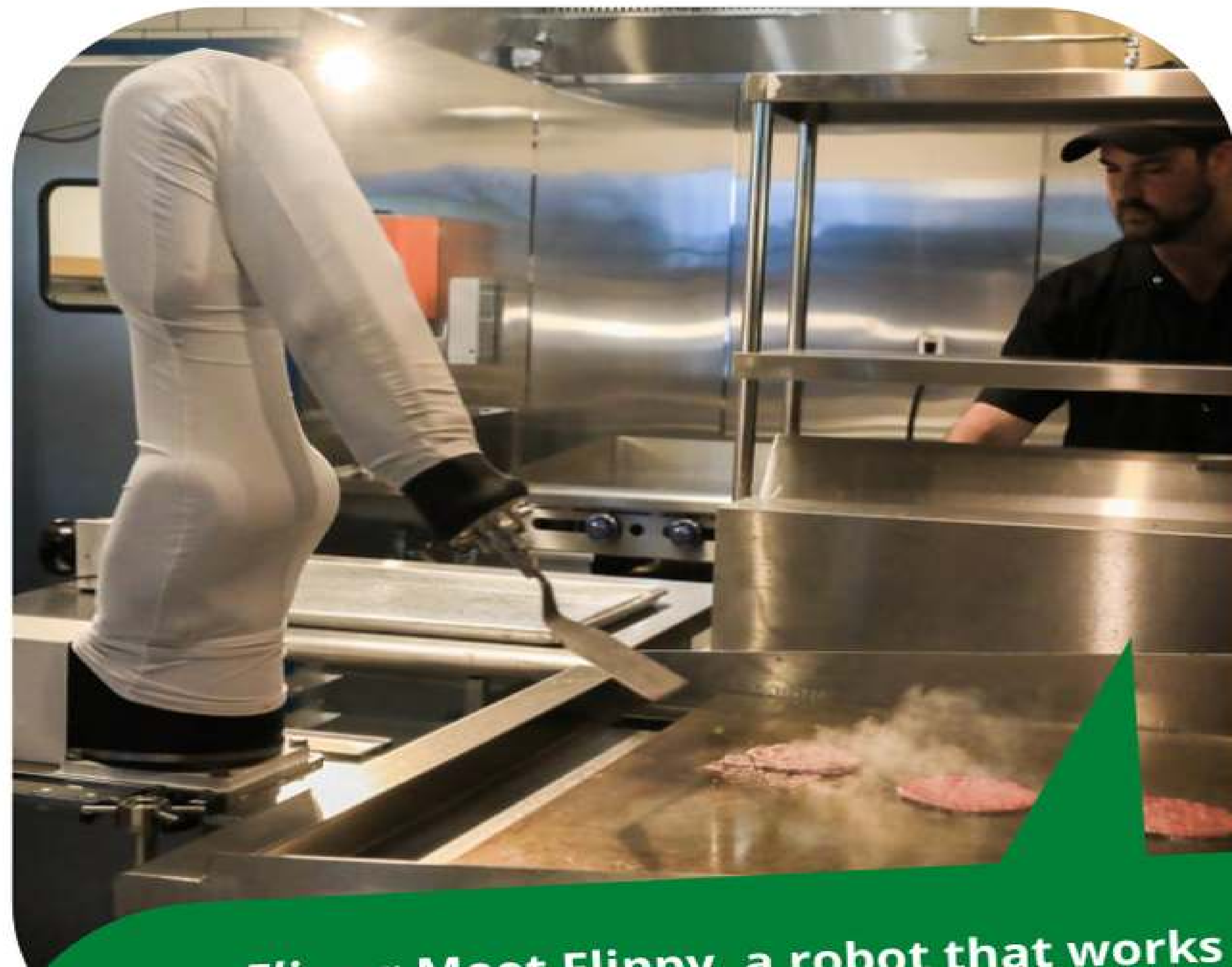
LVTZ

SYSTEMATIC TECHNOLOGY



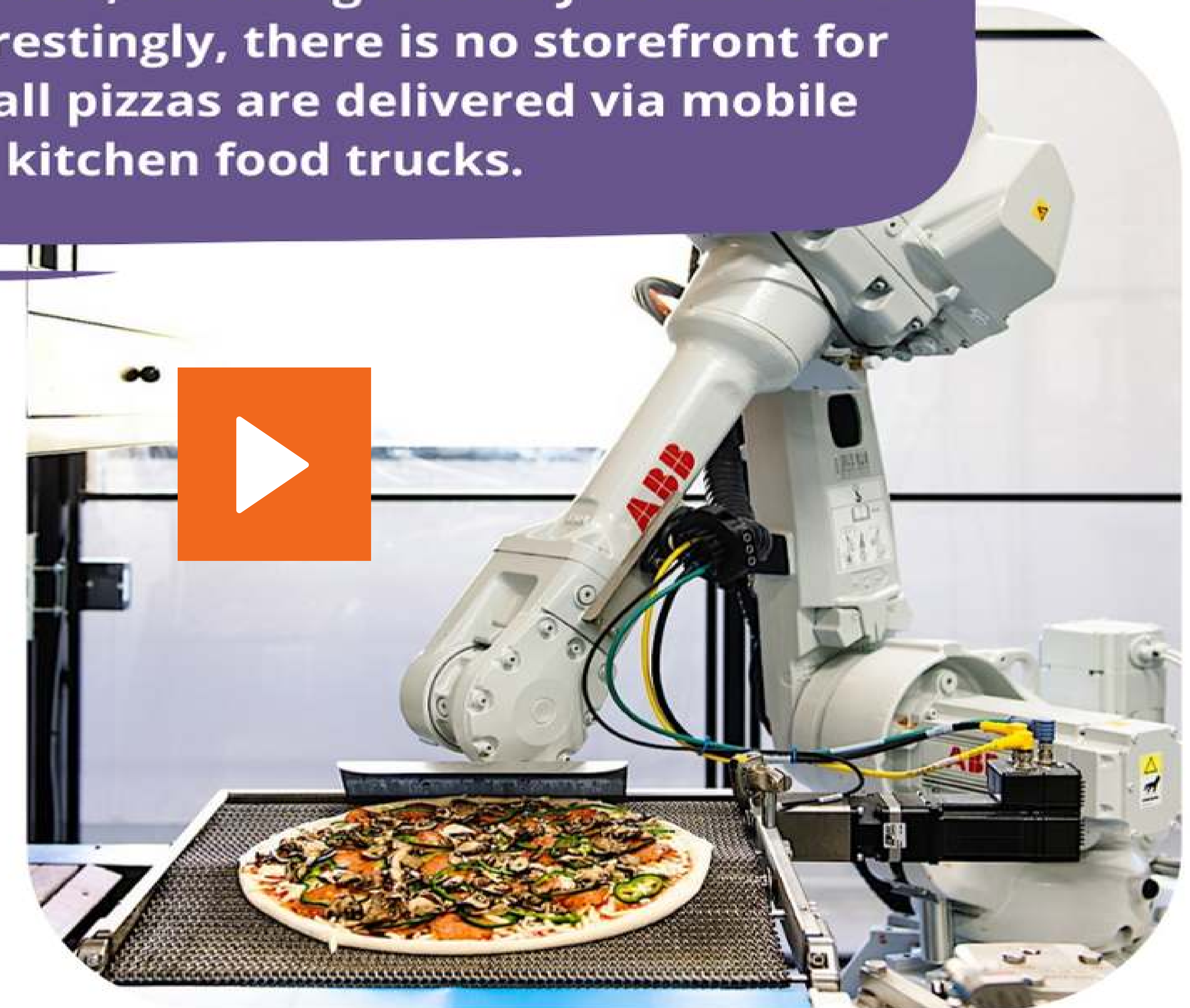
How Robots are Making Waves in the Restaurant Industry

Food robots might sound futuristic, but believe it or not, they're already showing up in restaurants across the world- Using Industrial Grade Robotic Arms. Offering both front- and back-of-house services, food robots work in a variety of roles, from cooking and cleaning up to bartending and bussing tables.



Flippy: Meet Flippy, a robot that works at Caliburger in Pasadena, California. Flippy is capable of (impressively) frying 80 baskets of food per hour and serving 300 burgers a day. And Flippy can do more than just cook – it can even monitor food and clean up. Flippy helps the burger joint minimize headcount costs, as many short-order cooks were leaving the kitchen due to high temperatures (it's worth noting that not one Caliburger employee has lost their job due to Flippy; in fact, Flippy requires humans to operate).

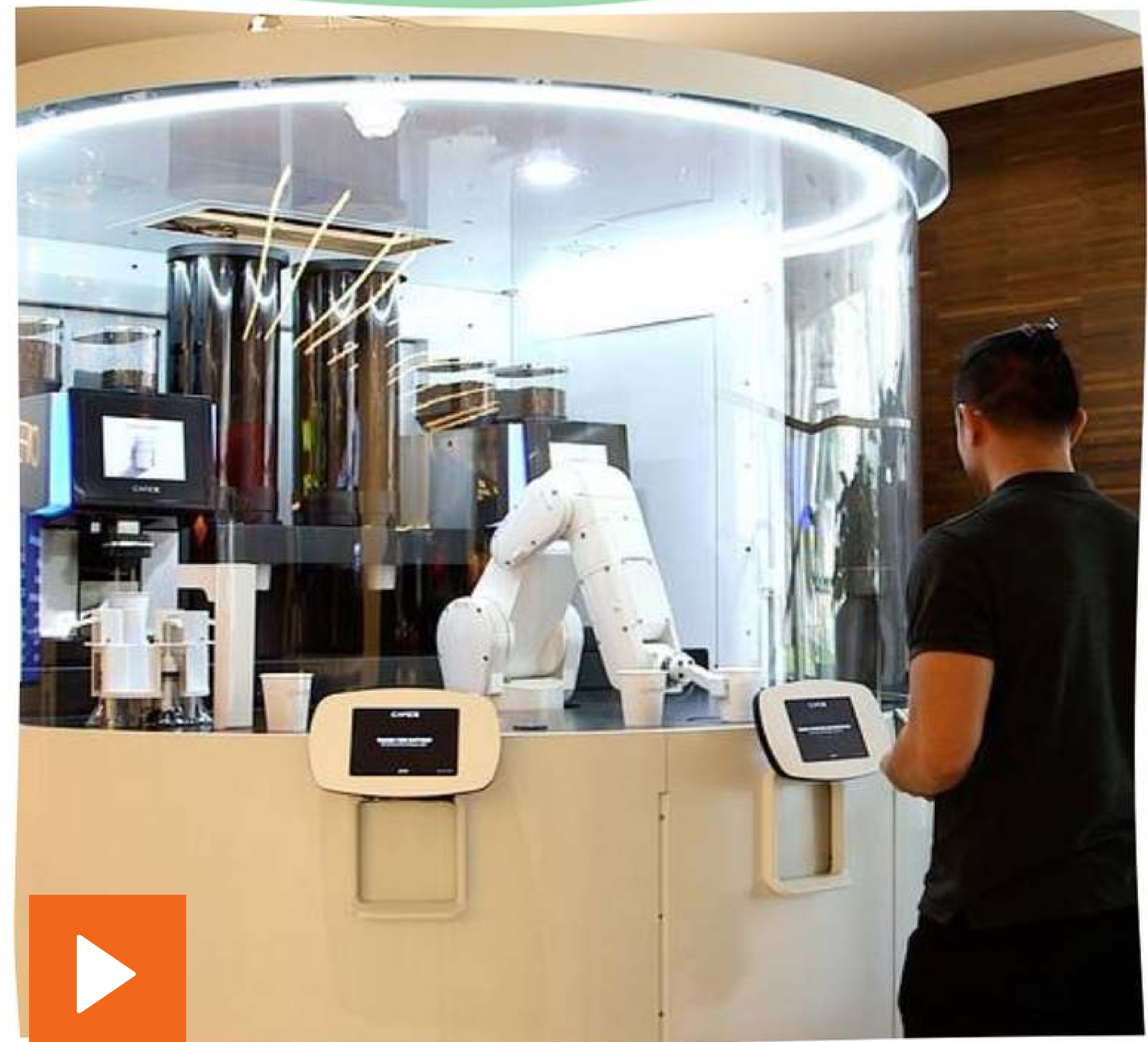
Vincenzo: Vincenzo is a pizza-making robot at Zume Pizza in Mountain View, California. Capable of creating 370 pizzas an hour, Vincenzo can press dough, dispense and spread sauce, and lift pizzas in and out of the oven, reducing delivery times to 5-20 minutes. Interestingly, there is no storefront for Zume Pizza; all pizzas are delivered via mobile kitchen food trucks.





Café X Barista Bot: Café X, a San Francisco coffeeshop, utilizes a one-armed assembly line-style robot that can create two drinks in under a minute. The café's robot helps ensure complicated orders come out correctly, and apparently the drinks even taste good, too; according to Wired, "This robot barista makes a dang good latte."

Cyberdog Bartender Bot: When you step inside Prague's Cyberdog, a two-level futuristic wine bar, you'll soon realize it's home to a robotic bartender that serves up drinks ordered via a smartphone app. The red robotic arm can pour up to four drinks simultaneously before they are placed on a tray and delivered via a mechanical system housed in the ceiling. Humorously, the robot can put on a show, too; if business is slow and the robot doesn't have any orders to make, it gets "bored" and performs dances.





Penny: Created by Bear Robotics, Penny is a robot created to help complete tedious restaurant tasks. Penny serves food to diners tables in a fun and futuristic way, and can even bus the tables. Bear Robotics CEO Jon Ha said that waitstaff appreciate not having to lift heavy trays, and have experience higher tips because they now have more time and energy to dedicate to customer service.

Source:Starmicronics

Starship: In addition to serving customers in restaurants, fleets of delivery robots are hitting the streets to also deliver food (and other items) to consumers' homes and offices. In 2018, the delivery robot market was worth \$11.9 billion, and it's predicted to be worth a whopping \$34 billion by 2024. It makes sense, when you realize that more than 60% of a merchant's customers live within three miles of one of their stores!



CIMIF | CTG

The 8th Cambodia International
Machinery Industry Fair

The 8th Cambodia International
Textile & Garment Industry Exhibition

Your Reliable Source for High-Grade Industrial Machinery

22–25 August 2019

Diamond Island Convention & Exhibition Center
Phnom Penh, Cambodia

www.chanchao.com.tw/Cambodia-expo

Contacts

International:

Tel: +886-2-26598000

Fax: +886-2-26597000

Mr. Akai Lin, Ext. 1761

E-Mail: akai@chanchao.com.tw

Cambodia:

Tel: +855 10 780257

Mr. Sambath Sorn

E-mail:

sambathsorn010@gmail.com



Robot Colleagues: Industrial Intelligence With Finesse and Sensitivity

Collaborative robots, or "Cobots", have until now been responsible for rough work; but in the future, they will take over more and more activities – working side by side with humans. In cooperation with customers and partners, HARTING will be presenting various scenarios and technologies "with sensitivity" at the HANNOVER MESSE.

HARTING's "HAI4You" Smart Factory demonstrates the full vertical integration of a toy car from the customer to the versatile product manufacturing, divided into self-sufficient yet fully networked production cells. The activities in each production cell are carried out by a collaborative Kuka lightweight robot. Goods are transported between the cells by a mobile Kuka iiwa robot.



PerFact Innovation, a partner company in the MICA.network, has additionally created digital twins of the facility and the robots. This generates a digital image of production processes that can be used to visualise and simplify remote maintenance and condition

monitoring. The company Expleo reads out the torque forces on the robot grippers in order to detect signs of wear. For this, the data stored in the Microsoft Azure cloud is evaluated and compared with historical data.

Swedish start-up builds the next-generation of assembly workplace

MTEK's business model is software-as-a-service for executing and controlling processes. "MICA and RFID turn the assembly workplace and the process sequence into an integrated unit with complete traceability," Olaf Wilmsmeier, Business Development Manager of RFID at HARTING, explains his satisfaction in cooperating with the Swedes. Wilmsmeier has provided support for MTEK as they implement HARTING's UHF RFID technology. He already knows the company from NOKIA's joint "Factory in a Box" project, which was one of the highlights at the 2018 HANNOVER MESSE.



The 6th International Processing & Packaging Exhibition for Myanmar

PROPAK MYANMAR

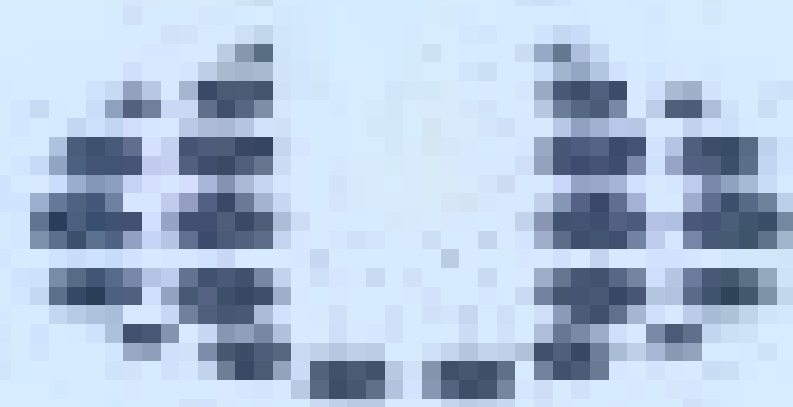
12 - 14 September 2019 | Yangon



Myanmar Expo (ME), Yangon, Myanmar

The Premier
Processing & Packaging
Event for Myanmar

Organized by



UBM



www.propakmyanmar.com

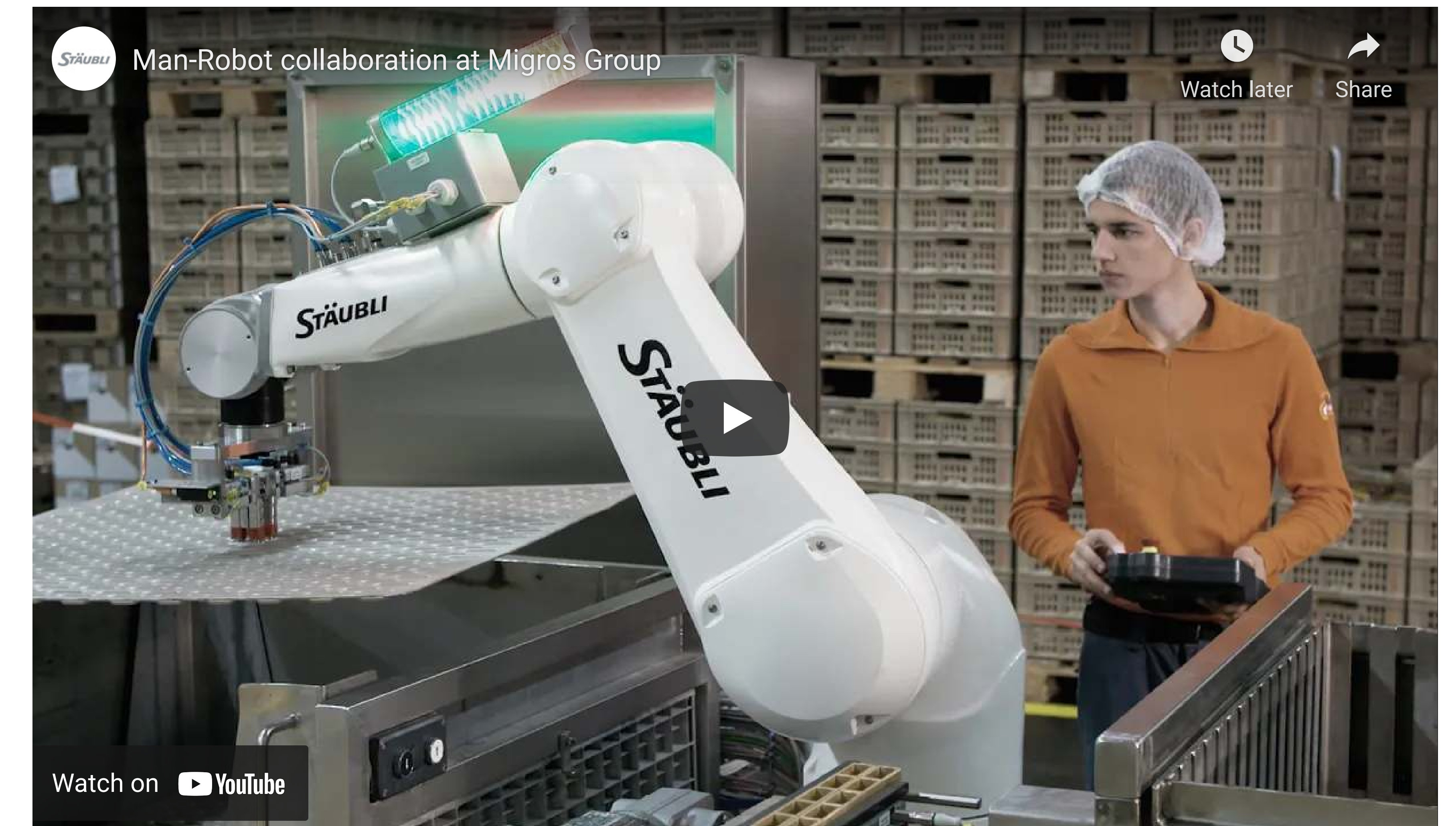
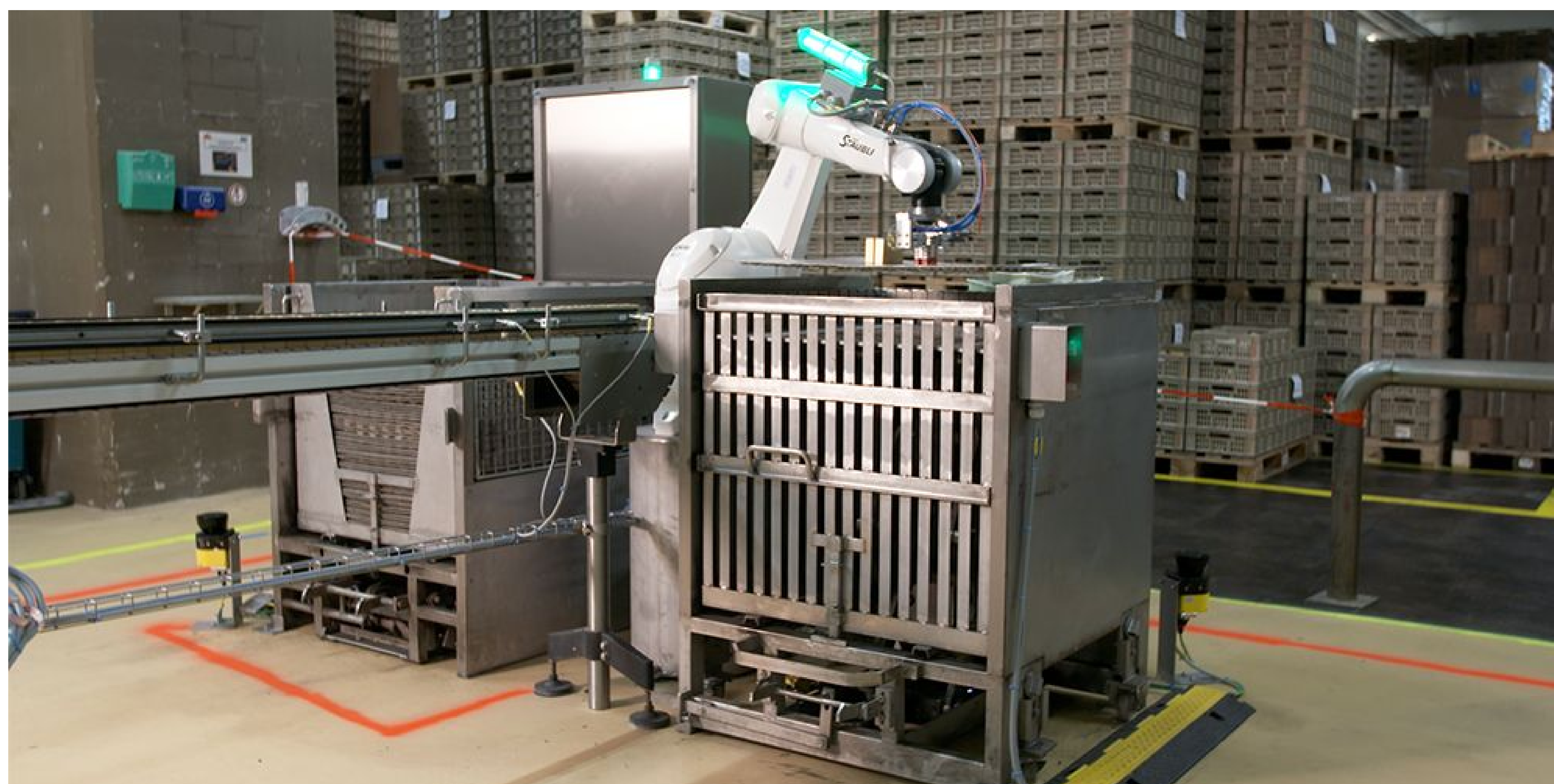


@ OES_ProPak

MRC OUT OF THE STARTING BLOCKS

Bischofszell Nahrungsmittel AG, a company based in the town of the same name near St. Gallen, specializes in the production of convenience foods. The factory works around the clock making delicious ready-made meals that would not be out of place in a haute cuisine setting. Customer demand for these products, with their quality and convenience of preparation, continues to grow.

Steffen Knoll, Technology Project Manager at Bischofszell Nahrungsmittel AG and dedicated automation expert, is a major advocate of the MRC (Man-Robot Collaboration) concept, and not merely for reasons of increased capacity: *“MRC offers a completely new range of possibilities. It obviously gives us the opportunity to expand our capacity relatively easily, but it also enables us to provide targeted support by means of robotics to the strengths of our employees in terms of flexibility and intelligence, thereby minimizing health hazards and the risk of injury to humans arising from stressful activities.”*



MAXIMIZING WORK SAFETY – MINIMIZING THE RISK OF INJURY

While the distribution of the ready meals on the aluminum trays and the placing of spacers between the individual layers are among the more agreeable jobs on the packing line, stacking the large metal trays on the trolleys is by no means a popular activity. Manhandling the trays, which measure 900 by 900 millimeters and weigh in at a hefty five kilos, over a full eight-hour shift is heavy work. The trays have to be slotted accurately into the trolley, which brings with it the risk of crushed fingers.

INTELLIGENT SOLUTION DEVELOPED INHOUSE

However, implementing the proposed scenario turned out to be more difficult than expected. After thorough analysis, the system integrators initially consulted expressed doubts about the viability of the application. Risk assessment, interface definitions, zonal sensory protection, selection of a suitable robot – there were a number of concerns that persuaded the cautious plant engineers to withdraw from the pioneering project.

THE PERFECT ROBOT FOR MAN-MACHINE INTERACTION

Contact was immediately established with the Swiss offices of Stäubli at Horgen, and from that point onwards, matters proceeded apace. In consultation with Stäubli, the right robot for this particular instance of man-machine interaction was identified: a TX2-90L with CS9 controller. In contrast to classic cobots (co-robots), this collaborative six-axis machine has the necessary payload for the application in question. What was missing was a suitable universal gripper to handle both the aluminum trays and the spacers. In order not to lose any more time, the Swiss company designed and built the gripper as well as the complete system from its own resources.



APPRENTICE PROGRAMS COMPLEX MRC APPLICATION

Visitors who come to see the pioneering MRC concept in Bischofszell can hardly believe that the entire system – including risk assessment, zonal sensory protection, programming, etc. – was developed in just four months without any input from external specialists. Intensive training quickly enabled the Migros team to draw up risk assessments from their own experience and to acquire the relevant expertise to program a complex MRC process. Visitors are also impressed that Raphael Merz, a fourth-year Migros trainee with a passion for automation, was able to program the complete MRC application within a few weeks of completing a four-day VAL3 programming course at Stäubli in Horgen and two days of safety training.

Change your bearing now



Moving energy made easy



No corrosion, no additional lubrication, light weight. This is what makes our high-performance plastics special. Less cost and higher service life for moving applications. All motion plastics® can be configured and calculated online.

igus-asean.com/dry-tech



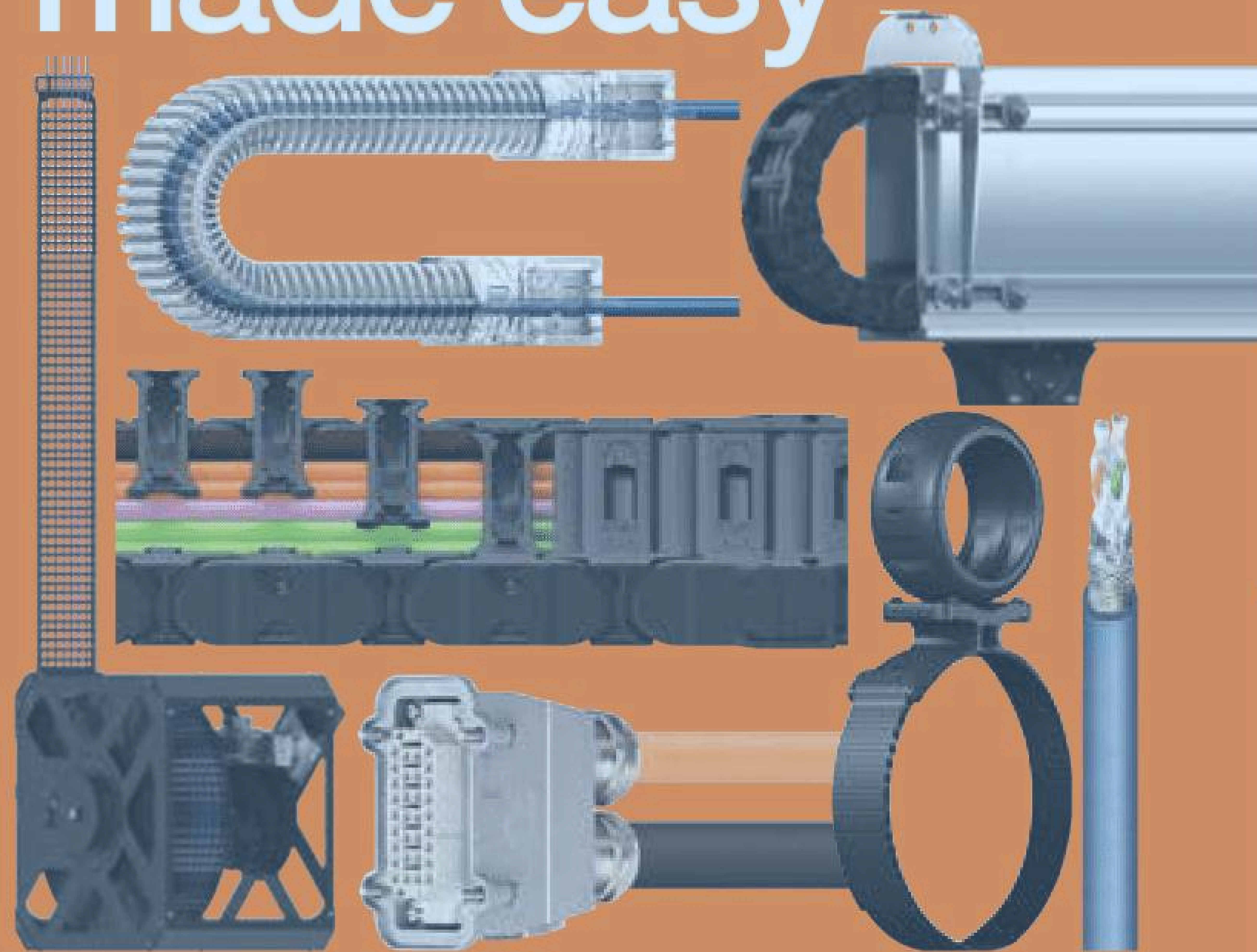
21st - 22nd April
Booth D12

MBS, Singapore



12th - 14th May
Booth 1125

MITEC, KL, Malaysia



Our comprehensive range matches energy chains and cables to the movement on your machine. From individual components with no minimum order quantity to harnessed, ready-to-install systems. All motion plastics® can be configured and calculated online.

igus-asean.com/the-chain

igus® Malaysia Sdn Bhd, Suite 1601-1, Level 16, Tower 2, Wisma Amfirst, Jalan SS7/15 (Jalan Stadium), 47301 Kelana Jaya Selangor, Malaysia

Tel. +603 7803 0618 info@igus.my

igus.my
plastics for longer life®

Showing robots 'tough love' helps them succeed, finds new study

In a computer-simulated manipulation task, the researchers found that training a robot with a human adversary significantly improved its grasp of objects. "This is the first robot learning effort using adversarial human users," said study co-author Stefanos Nikolaidis, an assistant professor of computer science. "Picture it like playing a sport: if you're playing tennis with someone who always lets you win, you won't get better. Same with robots. If we want them to learn a manipulation task, such as grasping, so they can help people, we need to challenge them." The study, "Robot Learning via Human Adversarial Games," was presented Nov. 4 at the International Conference on Intelligent Robots and Systems. USC Ph.D. students Jiali Duan and Qian Wang are lead authors, advised by Professor C. C. Jay Kuo, with additional co-author Lerrel Pinto from Carnegie Mellon University.

Learning from practice

Nikolaidis, who joined the USC Viterbi School of Engineering in 2018, and his team use reinforcement learning, a technique in which artificial intelligence programs "learn" from repeated experimentation. Instead of being limited to completing a small range of repetitive tasks, such as industrial robots, the robotic system "learns" based on previous examples, in theory increasing the range of tasks it can perform. But creating general-purpose robots is notoriously challenging, due in part to the amount of training required. Robotic systems need to see a huge number of examples to learn how to manipulate an object in a human-like manner. For instance, OpenAI's impressive robotic system learned to solve a Rubik's cube with a humanoid hand, but required the equivalent of 10,000 years of simulated training to learn to manipulate the cube. More importantly, the robot's dexterity is very specific. Without extensive training, it can't pick up an object, manipulate it with another grip, or grasp and handle a different object. "As a human, even if I know the object's location, I don't know exactly how much it weighs or how it will move or behave when I pick it up, yet we do this successfully almost all of the time," said Nikolaidis.

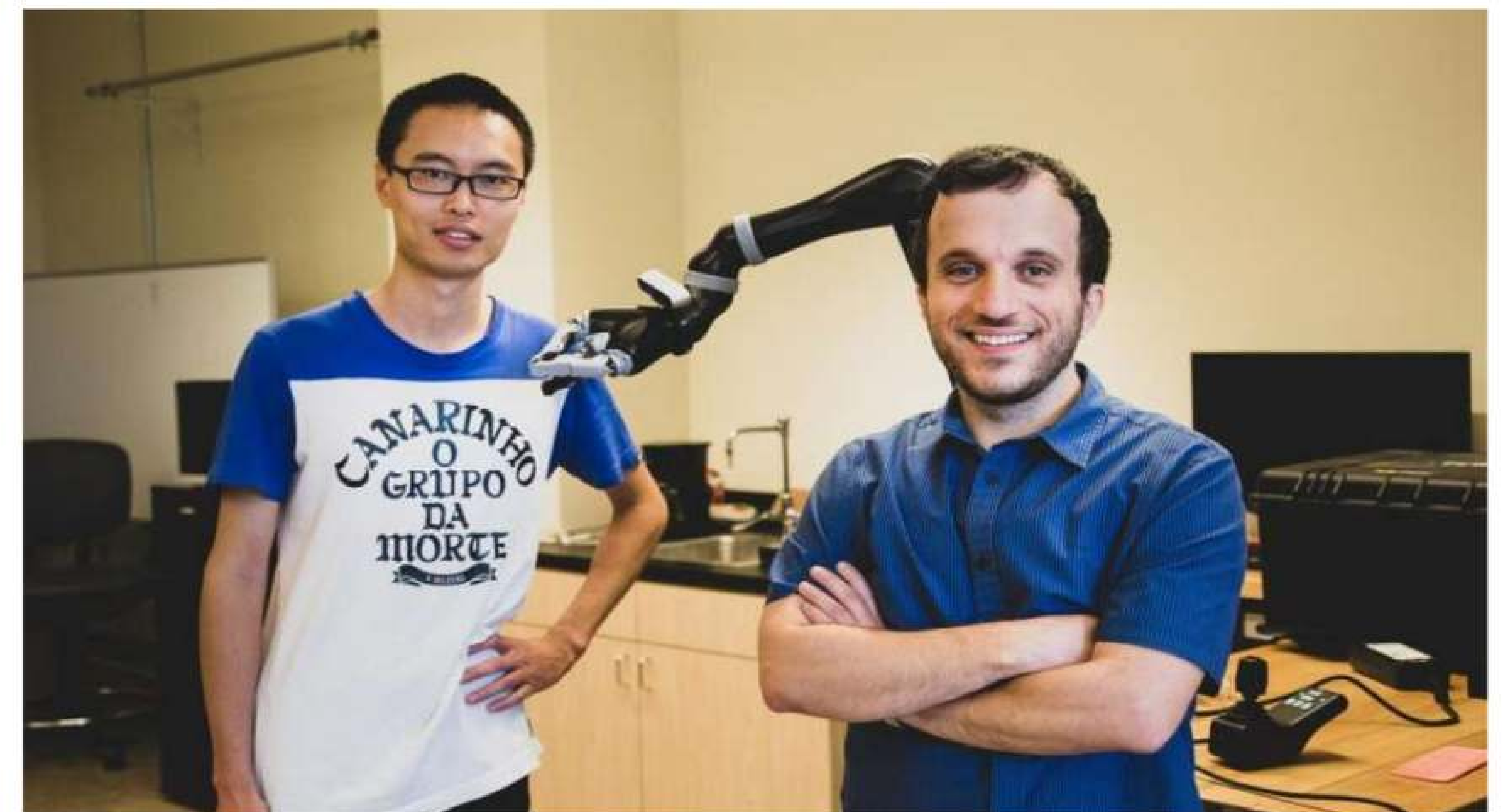
According to a new study by USC computer scientists, to help a robot succeed, you might need to show it some tough love. In a computer-simulated manipulation task, the researchers found that training a robot with a human adversary significantly improved its grasp of objects. Credit: USC Viterbi School of Engineering "That's because people are very intuitive about how the world behaves, but the robot is like a newborn baby." In other words, robotic systems find it hard to generalize, a skill which humans take for granted. This may seem trivial, but it can have serious consequences. If assistive robotic devices, such as grasping robots, are to fulfill their promise of helping people with disabilities, robotic systems must be able to operate reliably in real-world environments.

Human in the loop

One line of research that's been quite successful in overcoming this issue is having a "human in the loop." In other words, the human provides feedback to the robotic system by demonstrating the ability to complete the task. But, until now, these algorithms have made a strong assumption of a cooperating human supervisor assisting the robot. "I've always worked on human-robot collaboration, but in reality, people won't always be collaborators with robots in the wild," said Nikolaidis. As an example, he points to a study by Japanese researchers, who set a robot loose in a public shopping complex and observed children "acting violently" towards it on several occasions. So, thought Nikolaidis, what if we leveraged our human inclination to make things harder for the robot instead? Rather than showing it how to better grasp an object, what if we tried to pull it away? By adding challenge, the thinking goes, the system would learn to be more robust to real world complexity.

Element of challenge

The experiment went something like this: in a computer simulation, the robot attempts to grasp an object. The human, at the computer, observes the simulated robot's grasp. If the grasp is successful, the human tries to snatch the object from the robot's grasp, using the keyboard to signal direction. Adding this element of challenge helps the robot learn the difference between a weak grasp (say, holding a bottle at the top), versus a firm grasp (holding it in the middle), which makes it much harder for the human adversary to snatch away. It was a bit of a crazy idea, admits Nikolaidis, but it worked.



USC PhD student Jiali Duan (left) and Stefanos Nikolaidis, an assistant professor in computer science, use reinforcement learning, a technique in which artificial intelligence programs 'learn' from repeated experimentation

After training with the human adversary, the robot has a stronger grasp and it is harder to snatch the object away. Credit: Stefanos Nikolaidis .The researchers found the system trained with the human adversary rejected unstable grasps, and quickly learned robust grasps for these objects. In an experiment, the model achieved a 52 percent grasping success rate with a human adversary versus a 26.5 percent grasping success rate with a human collaborator."The robot learned not only how to grasp objects more robustly, but also to succeed more often in with new objects in a different orientation, because it has learned a more stable grasp," said Nikolaidis. They also found that the model trained with a human adversary performed better than a simulated adversary, which had 28 percent grasping success rate. So, robotic systems learn best from flesh-and-blood adversaries. **"That's because humans can understand stability and robustness better than learned adversaries,"** explained Nikolaidis. "The robot tries to pick up stuff and, if the human tries to disrupt, it leads to more stable grasps. And because it has learned a more stable grasp, it will succeed more often, even if the object is in a different position. In other words, it's learned to generalize. That's a big deal."

Finding a balance

Nikolaidis hopes to have the system working on a real robot arm within a year. This will present a new challenge—in the real world, the slightest bit of friction or noise in a robot's joints can throw things off. But Nikolaidis is hopeful about the future of adversarial learning for robotics. **"I think we've just scratched the surface of potential applications of learning via adversarial human games,"** said Nikolaidis. **"We are excited to explore human-in-the-loop adversarial learning in other tasks as well, such as obstacle avoidance for robotic arms and mobile robots, such as self-driving cars."This begs the question: how far are we willing to take adversarial learning? Would we be willing to kick and beat robots into submission?** The answer, said Nikolaidis, lies in finding a balance of tough love and encouragement with our robotics counterparts."I feel that tough love—in the context of the algorithm that we propose—is again like a sport: it falls within specific rules and constraints," said Nikolaidis."If the human just breaks the robot's gripper, the robot will continuously fail and never learn. In other words, the robot needs to be challenged but still be allowed to succeed in order to learn."

Source: University of Southern California

MIMF

30TH MALAYSIA
INTERNATIONAL
MACHINERY
FAIR (MIMF)



M'SIA - PLAS

马来西亚橡塑展

MALAYSIA INTERNATIONAL
PLASTIC, MOULD & TOOLS EXHIBITION

Special Feature

马来西亚3P工业4.0论坛

Malaysia 3P Industry 4.0 Forum

18-21 JULY 2019

PWTC Putra World Trade Centre
Kuala Lumpur, Malaysia

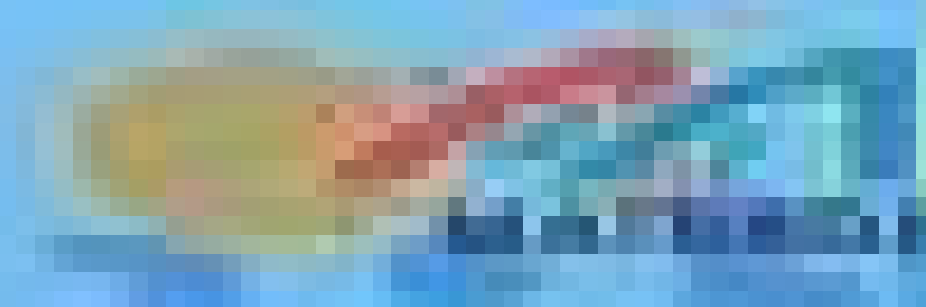


Organized by



ES EVENT MANAGEMENT Sdn Bhd
INTERNATIONAL EVENT
MANAGEMENT Sdn Bhd

Endorsed by



Malaysia Trade Development
Corporation



The Specialized Exhibition for Your Industry

+603 9132 1922

www.malaysiaplas.com.my
info@malaysiaplas.com.my

Yaskawa Launches Collaborative Robot MOTOMAN-HC10DTF with a Payload Capacity of 10kg Equipped with Food Specifications

Collaborative robot MOTOMAN-HC10DTF (payload capacity: 10kg, maximum reach: 1200 mm), which can be installed in food production lines, as a new lineup of collaborative robots.



▼ Safe operations in a mode for collaborating with humans

A safe design that prevents your hands from getting stuck or pinched



▼ Easy operations on the touch panel screen of the programming pendant

▼ Instruction is possible by moving the arm manually



Equipped with a dedicated screen for direct teaching

Manipulate the arms by hand as desired to instruct to perform selected actions.

Bosch provides solutions through advancement in electrical powertrain components and braking technology



Bosch's 48-Volt hybrid battery designed to reduce fuel consumption, achieving a reduction in CO₂iBooster with ESP[®]hev generates 95 percent less brake dust, helping to alleviate particulate-emission concerns in cities. Acquisition of EM-motive positions Bosch as market leader in electromobility.

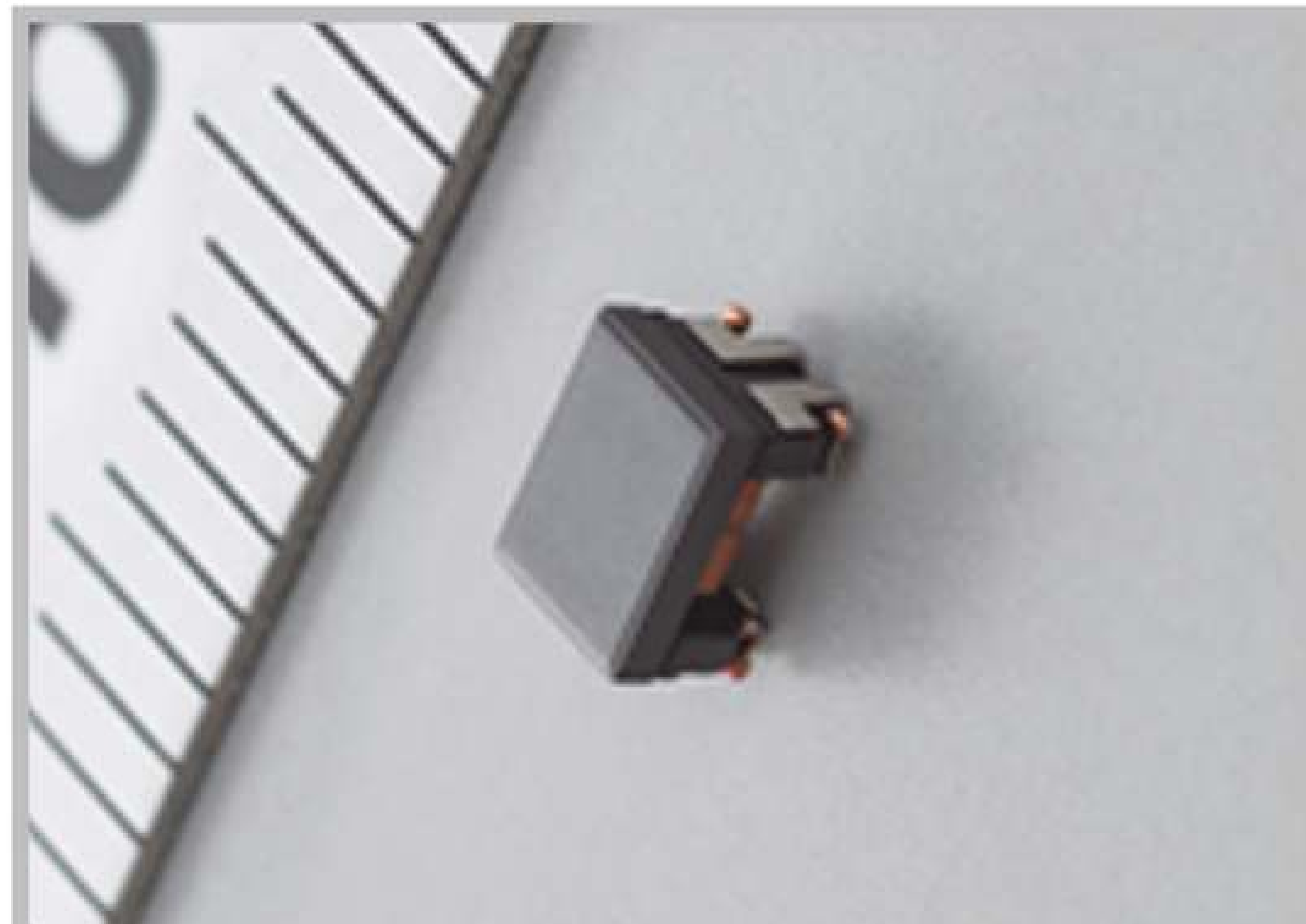
Future of mobility. Energy-efficient powertrain systems are a key solution for challenges in energy and climate change. Bosch believes that optimized internal combustion engines and electric drive systems also have a major role to play in the future of urban mobility, and continues to develop and improve both types of powertrain. Earlier this year, Bosch acquired full stake in EM-motive, one of Europe's electric motors manufacturers. Set up by Bosch and Daimler in 2011 as a fifty-fifty joint venture, EM-motive has since manufactured some 450,000 electric motors. This acquisition is a logical step forward for Bosch as a leader in electromobility, to continue pushing the boundaries of what is technically feasible.

The world's first common mode choke coil for Automotive Ethernet that can withstand temperatures up to 150 degrees Celsius

the DLW32MH201YK2, a common mode choke coil (CMCC) for Automotive Ethernet*1 (100BASE-T1*2). Withstanding extreme temperatures ranging from -55 to +150°C, makes this product a world first for its type*3. Mass production of this product will start in December 2019.

Highlights

- Suitable for Automotive Ethernet (100BASE-T1)
- Operating temperature range -55 ~ +150°C
- 1210 inch size (3.2 mm x 2.5 mm)
- Compliant to AEC-Q200*7
- Rated voltage 80V



Optical analysis of combustion processes in engines

HIS high-speed camera system with optical probes for visualization of combustion processes in engines. The system comprises a control unit, a high-speed camera and a borescope with integrated LED illumination. HIS helps engine developers to optimize combustion processes, with the focus on emissions and consumption.



- High-resolution images of combustion processes
- User-friendly integration of pressure sensor and light conductor

MIMF

30th MALAYSIA
INTERNATIONAL
MACHINERY
FAIR (MIMF)



M'SIA - PACK & FOODPRO

马来西亚包装与食品加工展

MALAYSIA INTERNATIONAL PACKAGING
& FOOD PROCESSING EXHIBITION

18-21 JULY 2019

PWTC Putra World Trade Centre
Kuala Lumpur, Malaysia

+603 9132 1922 www.malaysiapack.com.my info@malaysiapack.com.my

ifm vision system for Universal Robots



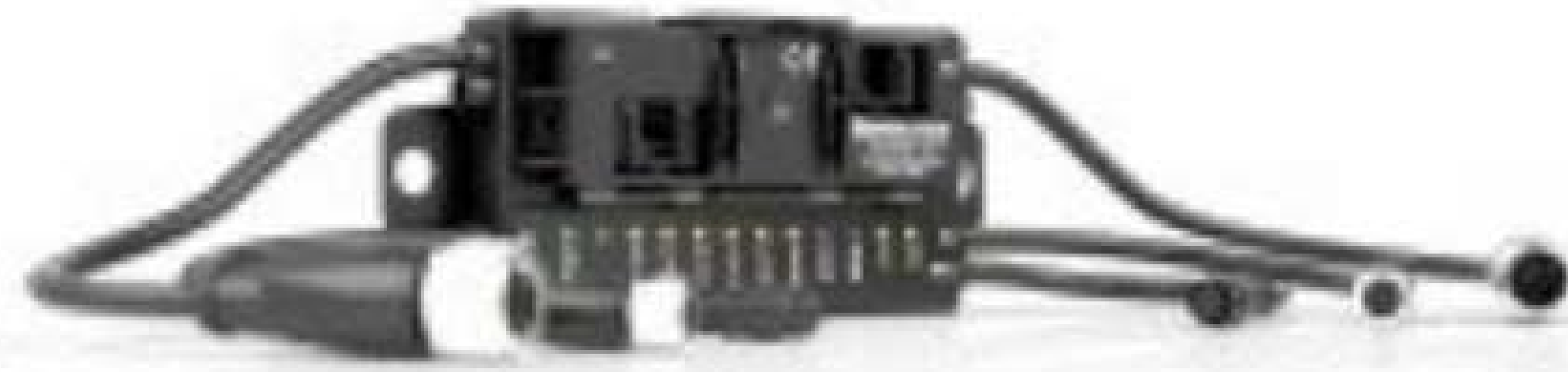
3D vision sensor from ifm as UR+ solution The robot "modular system" is complemented by components from other manufacturers which were tested for their compatibility and certified by Universal Robots. These are, for example, grippers, sensors, actuators or vision systems. ifm as one of the worldwide leading suppliers of automation solutions provides its O3D 3D vision sensor as system component in the UR modular system. The core element of the sensor is a 3D camera chip. It creates a 3D image using PMD technology (= photonic mixer device) and time of flight measurement. The resolution of the PMD image sensor is 176 by 132 pixels. For each of the 23,232 pixels the sensor calculates a precise distance value - up to 25 times per second.

igubal polymer spherical bearings with new metal housings are self-lubricating and maintenance-free



New igubal spherical balls made of the high-performance plastic iglide J, specifically for cost-effective sheet metal housings. The balls can be mounted in seconds and are available directly from stock. The igubal spherical balls come directly from injection molding and are therefore cost-effective. Within a few seconds, they can be mounted in place of ball bearings in existing classic metallic pillow blocks and flange bearing housings and now also in low-cost sheet metal housings. The bearing system consisting of sheet metal housing and igubal spherical ball is available directly from stock. The plastic spherical ball has a high durability and its service life can be easily calculated online. The igubal spherical balls are currently available in three dimensions for low-cost sheet metal housings (\varnothing 20mm, 25mm and 30 mm) as well as for cast housings (UC204-210).

New G20 ZPA Roller Module—Intelligent Buffer System for Conveyor Technology



Highlights of the Intelligent G20 ZPA Module

- ***G20 ZPA module for zero pressure accumulation in material handling***
- ***Integrated logic enables plug-and-play commissioning with no need for additional devices, control system, or programming***
- ***Fieldbus-independent integration via piercing technology***
- ***Flexible positioning and repositioning***
- ***ZPA analyzer available for additional monitoring***

ABB i-bus® KNX Combi Switch Actuators offer flexibility with compact design

Ideal for applications in residential projects, ABB i-bus® Combi Switch Actuators respond to dynamic requirements enabling subsequent changes in functionality at any time. They also deliver additional levels of safety, with the option to disable manual operation, which protects against unauthorized access.

With a large selection of currents, from 6A to 16A, the range offers the highest flexibility on the market. Developed and manufactured in Germany to the highest quality standards, ABB's new i-bus® Combi Switch Actuators fulfill diverse project requirements in today's buildings. The flexibility to subsequently change the functionality of switching and shading makes them particularly suitable for projects in individual homes or small commercial applications





Advance Canvas Industries Pte Ltd

Fabric bellows provide maximum protection in rugged industrial environments and prevent foreign particles from entering the hydraulic or pneumatic systems of the precision equipment inside.

Special Advantages:

- Safety
- Flexibility
- Durability
- Dust-proof
- Heat and Cold Resistant
- Oil and Chemical Resistant
- Custom designed for your specific needs
- Completely manufactured in Singapore

Applications:

- Rods, shafts, screws and other cylindrical-shaped components.
- Industrial robots, automated machines, scissors lift table
- Linear guide machines
- Precision equipment and custom-built machines



35 Kallang Place, Singapore 339163

Tel: (65) 6294 5192

Fax: (65) 6291 9392

Email: adcanvas@adcanvas.com.sg

Website: www.adcanvas.com.sg



The OneWorld Robotics Competition offers students the opportunity to develop and apply critical survival skills in pursuit of solving real-world challenges we are facing right now. The inaugural OneWorld Robotics Competition category for 2019 is NAVIGATING SMART CITIES

<https://oneworldrobotics.com.sg/competition/>

5K USD
GLOBAL CHAMPION

1K USD
FUTURE SKILLS WINNERS

PRACTICE KIT INCLUDES

- FLIPROBOT E310 STARTER KIT
- LITHIUM-ION BATTERY PACK
- BLUETOOTH & WIFI CONNECTIVITY
- ROBUST ALUMINIUM CHASSIS
- AI CAMERA MODULE
- ULTRASONIC SENSOR
- INFRARED SENSOR
- RANGE OF MECHANICAL PARTS



The ICI Innovation Award Competition is one of the world's most significant and prestigious awards for Medical Interventions Startups
****Abstract Submission Deadline for the Innovation Award Competition- October 15, 2019**

<https://icimeeting.com/innovation-award/>

\$100000 First Prize Award
Sponsored By



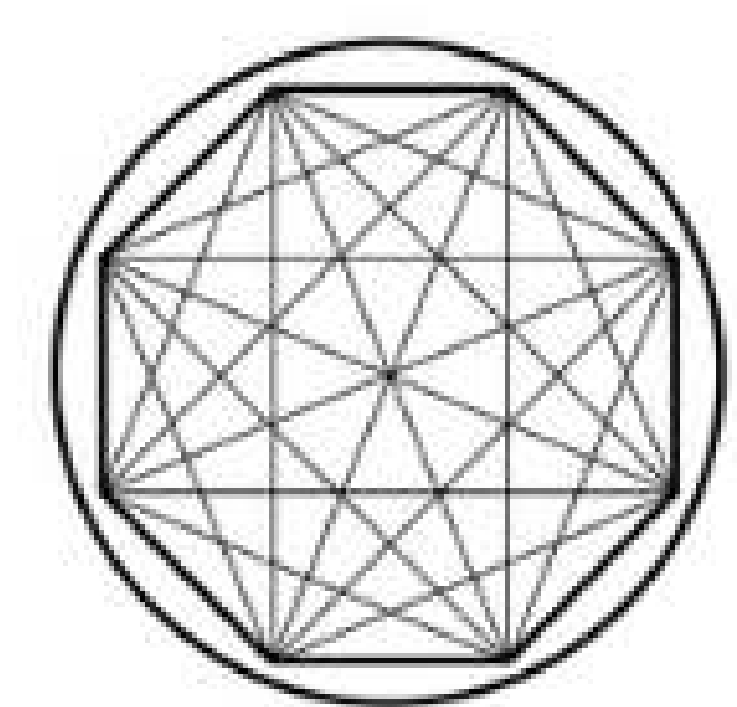


YD
YANKO DESIGN

***“DESIGN FOR EMPATHY” IS THE 2019
THEME FOR THE TAIWAN
INTERNATIONAL STUDENT DESIGN
COMPETITION***

The Taiwan International Student Design Competition is held across various categories, spanning Product Design, Visual Communication, and Digital Animation, and is judged by a jury panel for their creativity, interpretation of the theme, expression of concept, and aesthetic approach. Winners are awarded a trophy + certificate along with a hefty cash prize of up to \$13,000. Organized specifically to foster and nurture student talent, the awards program is made for students, prospective students, and immediate graduates, and requires no registration fee.

<https://www.yankodesign.com/2019/05/25/design-for-empathy-is-the-2019-theme-for-the-taiwan-international-student-design-competition/>



IDE SERIES

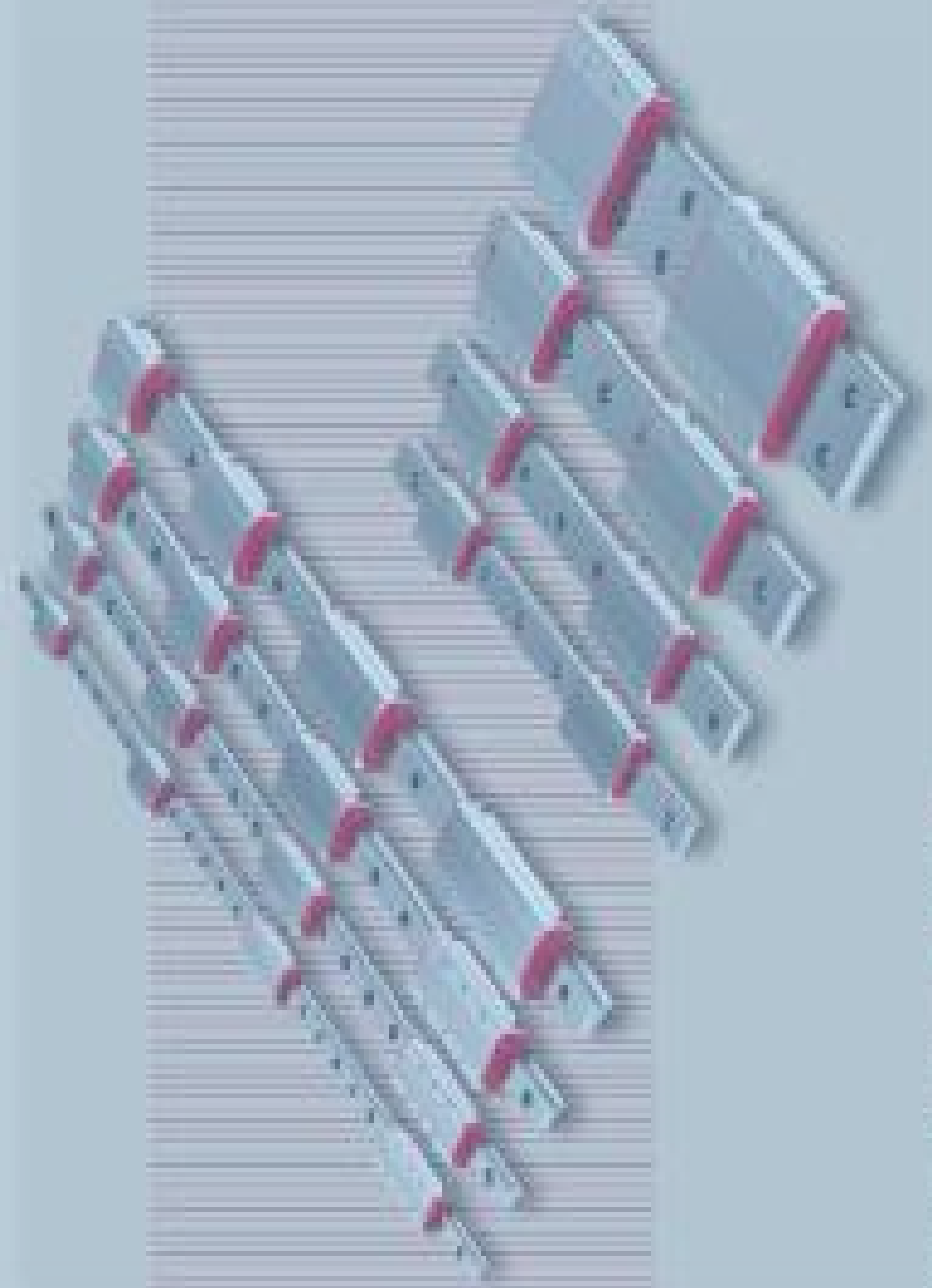
2020 SINGAPORE

IDE (Innovation, Design and Engineering) Series is a national technology and engineering competition event. The aim of the competition is to challenge students on problem solving across domains such as electronics, programming, and mechanical design.

<https://ideseries.org/ide2020/>

«Essentials for the Best!»

SCHNEEBERGER
LINEAR TECHNOLOGY



MINIRAIL PROFILED MINIATURE GUIDEWAY

Reliable and ultra-fast precision engineering

MINIRAIL represents the latest generation of miniature guideways for sophisticated applications.

They are extremely robust, and their smooth running, accuracy, and reliability are demonstrated in every application.

Benefits:

- Precision 0.1 µm
- Non-loaded parts
- Speed 3 m/s
- Acceleration max. 1000 m/s²
- High durability

Industries:

- Biotechnology
- Metrology
- Semiconductor Equipment
- Micro-automation
- Medical Equipment
- Laboratory Automation
- Optical Industry
- Robotics, Pick & Place



SCHNEEBERGER LINEAR TECHNOLOGY PTE. LTD.

30 Ang Mo Kio Industrial Park 2

#01-04, Singapore 508951

Phone: +65 6842 2385

Fax: +65 6842 3406

www.schneebberger.com

Email: info-sg@schneebberger.com

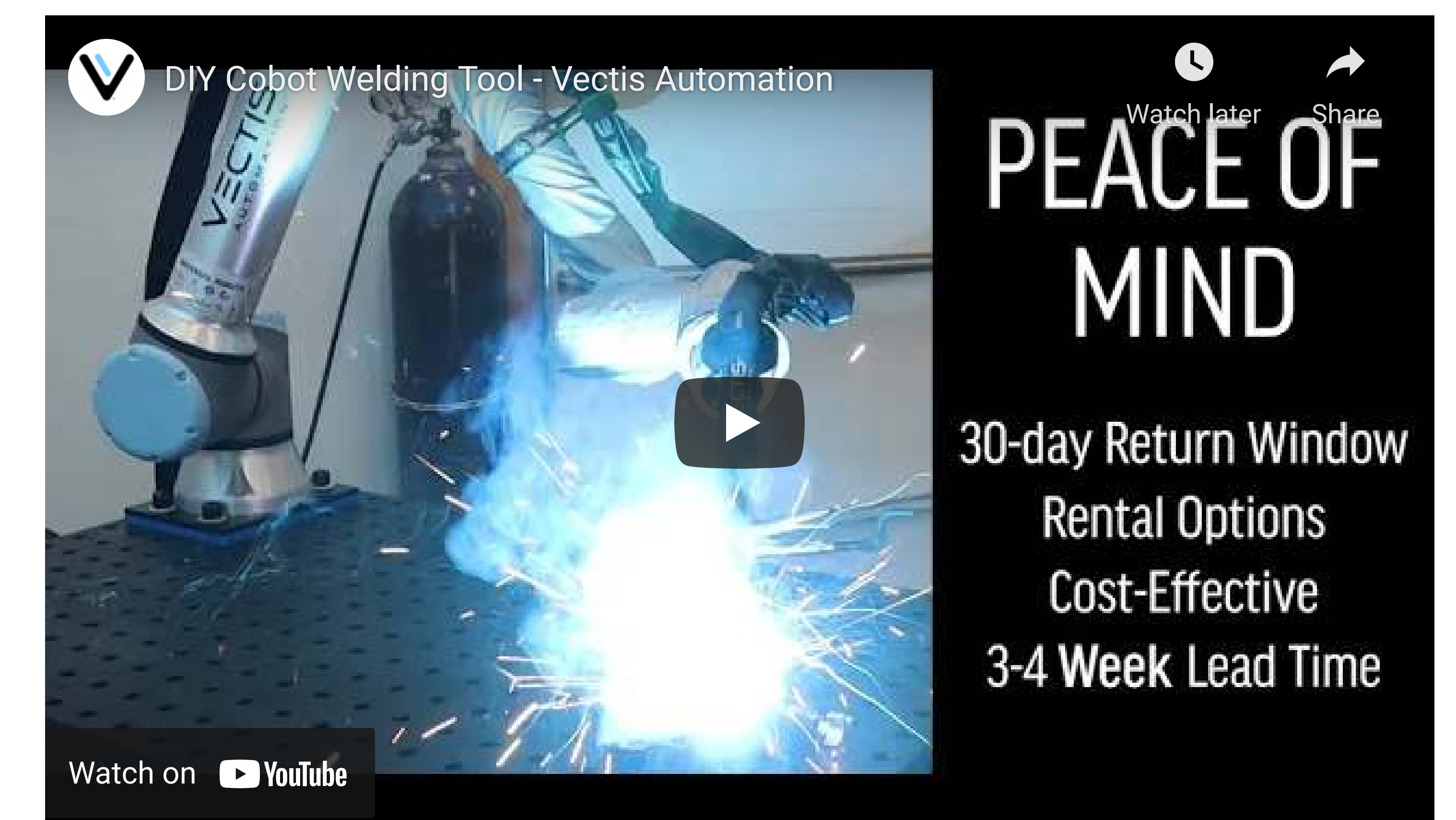


UNIVERSAL ROBOTS POWERS VECTIS AUTOMATION'S NEW COBOT WELDING TOOL

Vectis Automation has chosen Universal Robots' UR10e cobot to power the Vectis Cobot Welding Tool launching at FABTECH 2019 in Chicago, giving smaller weld shops a low-risk, easy solution to increase weld capacity, quality and stability.

The Vectis Cobot Welding Tool helps manufacturers boost productivity by reducing the learning curve, deployment time, risk, and cost of robotic welding. Powered by Universal Robots' UR10e collaborative robot, the Vectis Cobot Welding Tool is a portable, safe, versatile, and extremely easy-to-use solution that is even available as a low-risk, no-capital rent-to-own option. FABTECH attendees will be the first to experience the new cobot welder as it debuts in Universal Robots' FABTECH booth B35083 in Chicago, November 11-14, 2019.

Users of the Vectis Cobot Welding Tool are typically set up entirely by the customer within a few hours of system arrival and welding within 10 minutes of setup – with no programming experience necessary. Vectis' Let's Weld Together intuitive programming interface is accessible directly through the UR cobot's own teach pendant. Programs can be created, saved, and later recalled in order to handle the numerous part numbers typical for high mix/low volume shops. The cobot welder can weld thick and thin parts, and the Vectis Weaving Software allows manufacturers to set weave parameters for cleanly tied-in welds with a Weld Template Library that provides parameter starting points for common weld sizes, such as one-click tack welds, square tubes with tight-radius corners, round tubes, and multi-segment paths.

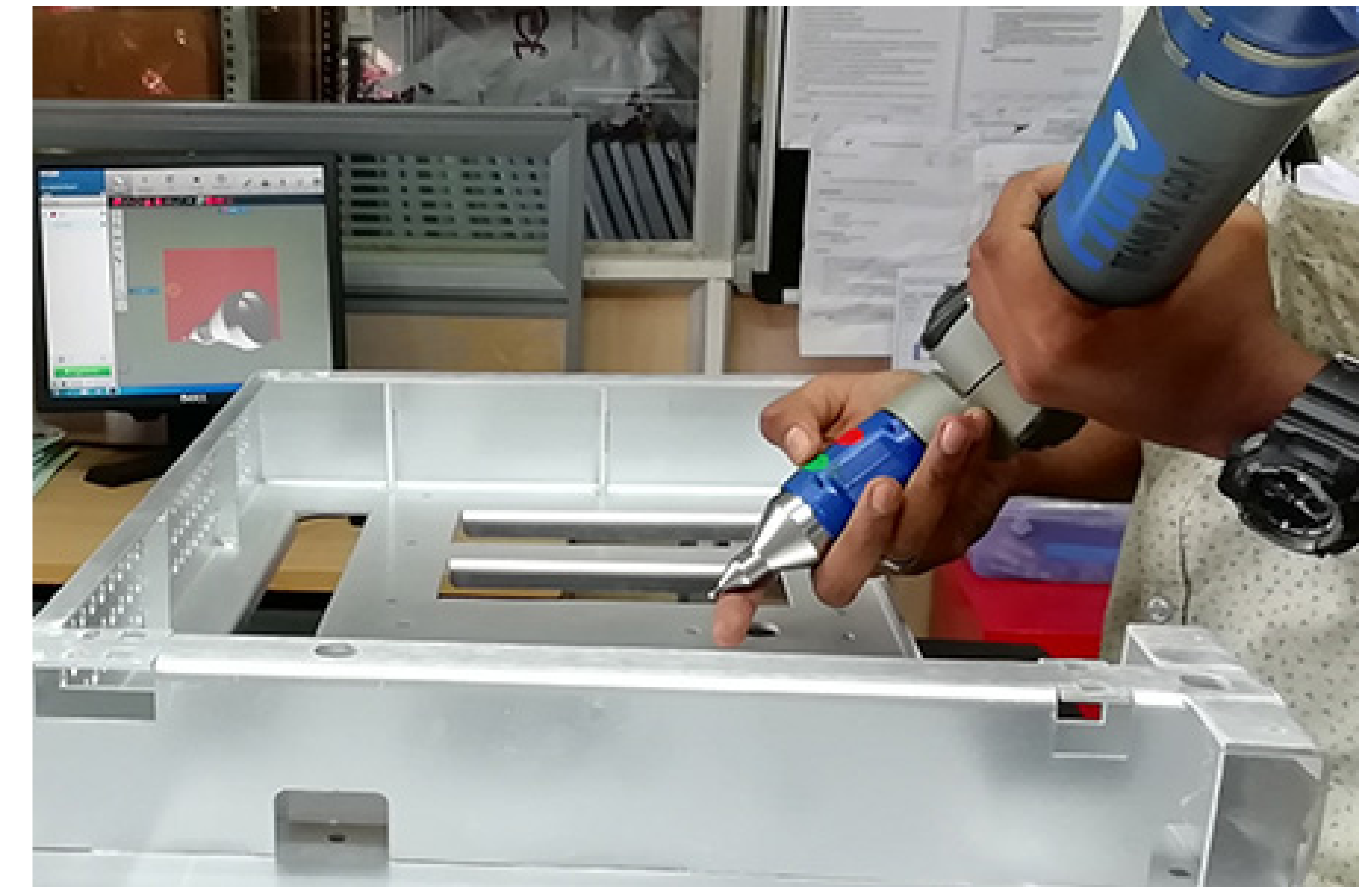


FARO ENABLES 60% TIME-SAVINGS FOR SHEET METAL FABRICATOR

India is fast rising as a manufacturing powerhouse. With Prime Minister Modi's "Make in India" programme, the manufacturing industry in India is set to become the fifth-largest in the world by 2020, worth an expected US\$1 trillion by 2025. Therefore, against the backdrop of an increasingly crowded playing field for suppliers, quality and prompt service are more important than ever in setting companies apart from their rivals.

THE SEARCH FOR QUALITY AND EFFICIENCY

Veer-O-Metals team depended on vernier calipers and micrometers for the bulk of their measurements. However, these manual tools had their limitations. The metal parts ranged from small components that are around 10 x 10cm in size, to larger structures of 3 x 3m dimensions. Technicians tasked with measuring large structures such as door frames would typically take an entire day to complete the job. Even then, the accuracy of measurements depended heavily on each technician's competency. Even with the most skilful operators, there were times when measurements were still inaccurate, forcing the team to push back project timelines.



FAROARM: A TRUSTED SOLUTION

Important to the team at Veer-O-Metals was the FaroArm's ability to complete geometric dimensioning and tolerancing (GD&T) inspections swiftly. Mr. Saran commented: "It used to be difficult to even measure flatness tolerance, but the FaroArm automatically generates reports based on 3D data points. The CAM2 metrology software even maps out a visual of our products, allowing us to pinpoint and correct problem areas in our products more quickly."

THE PREMIER EVENT FOR OIL AND GAS FIESTA 2019

14 & 15
NOVEMBER 2019

IMPERIAL HOTEL
VUNG TAU VIETNAM

SPECIAL COVERAGE ON INSTRUMENTATION AND PROCESS SAFETY

Industries' Focus

Coatings Technology
Welding Technology
Heavy Equipment

- Oil & Gas
- Offshore, Marine & Shipbuilding
- Subsea Engineering
- Deepwater Technology
- Petrochemical & Chemical Processing
- Fertilizer Processing

Excitedly Brought
To You By:

ALL CORP
All-Levels-Service



Officially Supported:

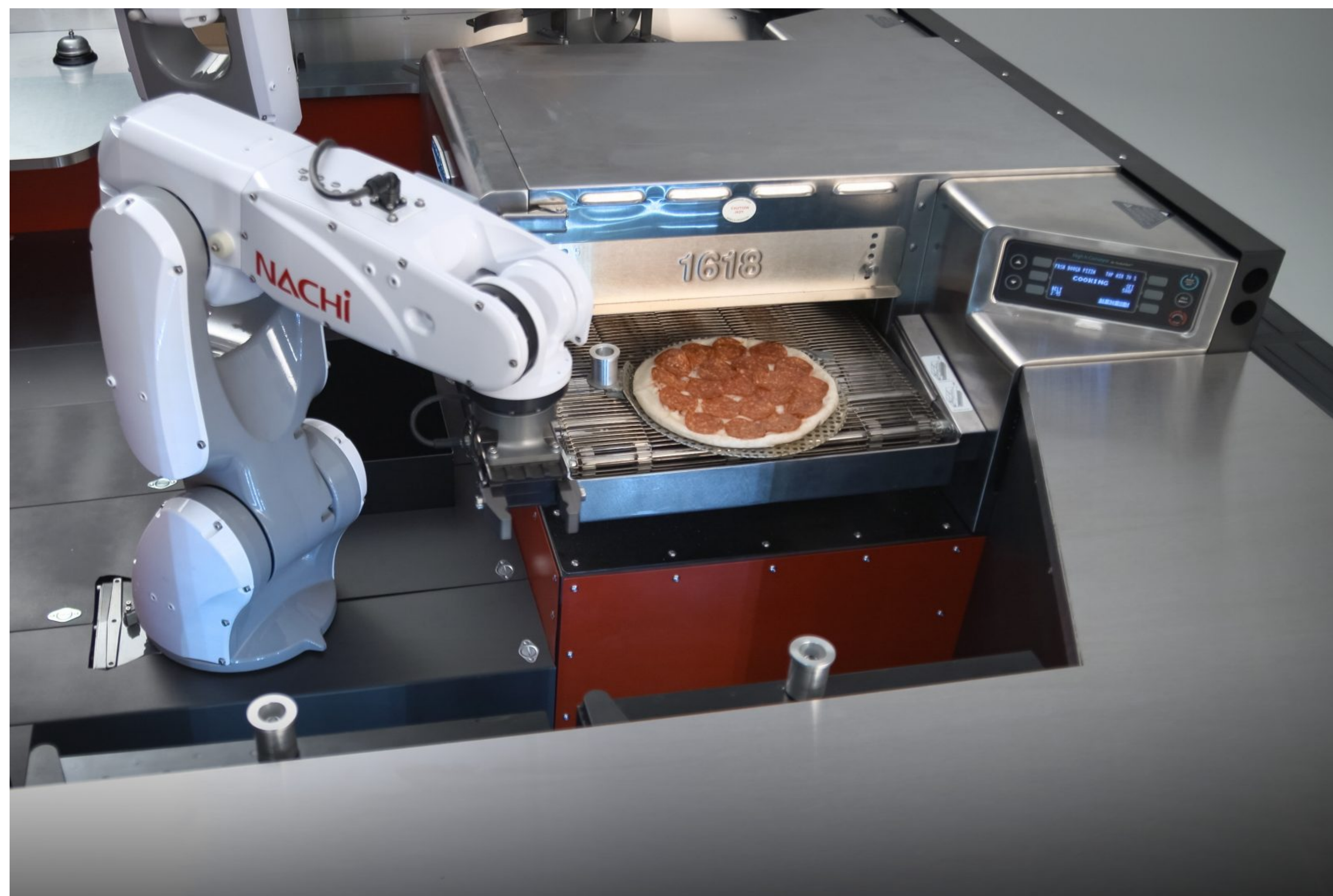


Singapore
Manufacturing
Federation
新加坡製造業聯合會

www.IndustrialRoadshow.com

NACHI ROBOTS SERVE UP PIZZA IN A TOYOTA TUNDRA "PIE" PRO

At the 2018 Specialty Equipment Market Association (SEMA) show, Toyota introduced a hydrogen fuel cell-powered Tundra that robotically makes pizza with the help of two Nachi robots (MZ-07/MZ-07L). These robotic arms load and unload the pizzas in the oven, as well as cut, box and hand off the finished product.



“This is an innovative concept in how pizza will be delivered in the future and we are thrilled to be a part of this endeavor with Toyota and Pizza Hut,” said Andy Candela, Nachi Robotic Systems, Inc., Business Development Director. *“The process shows one of our top-selling robots and how versatile the programming can be; showing an element of picking and placing, with the help of a Schunk gripper.”*

The hydrogen fuel cell electric-powered Toyota Tundra PIE Pro takes the concept of pizza delivery to another level. It is a Toyota truck that takes the party wherever it goes, with virtually no carbon footprint— leaving only water vapor emissions and delicious Pizza Hut pizza. Powered by a Toyota Mirai powertrain and converted to FWD, this Tundra can power itself and the entire bed-mounted kitchen via its hydrogen fuel cell electric powertrain.

“Our expert engineers adapted a Toyota Mirai hydrogen fuel cell powertrain for the Tundra PIE Pro, capable not only of powering the vehicle, but also providing the energy for the pizza-making operation in the bed of the truck. Add state-of-the art robotic arms from our partners at Nachi, and delicious pies from Pizza Hut, and the result is a one-of-a-kind, zero-emission mobile pizzeria poised to steal the show at SEMA.”



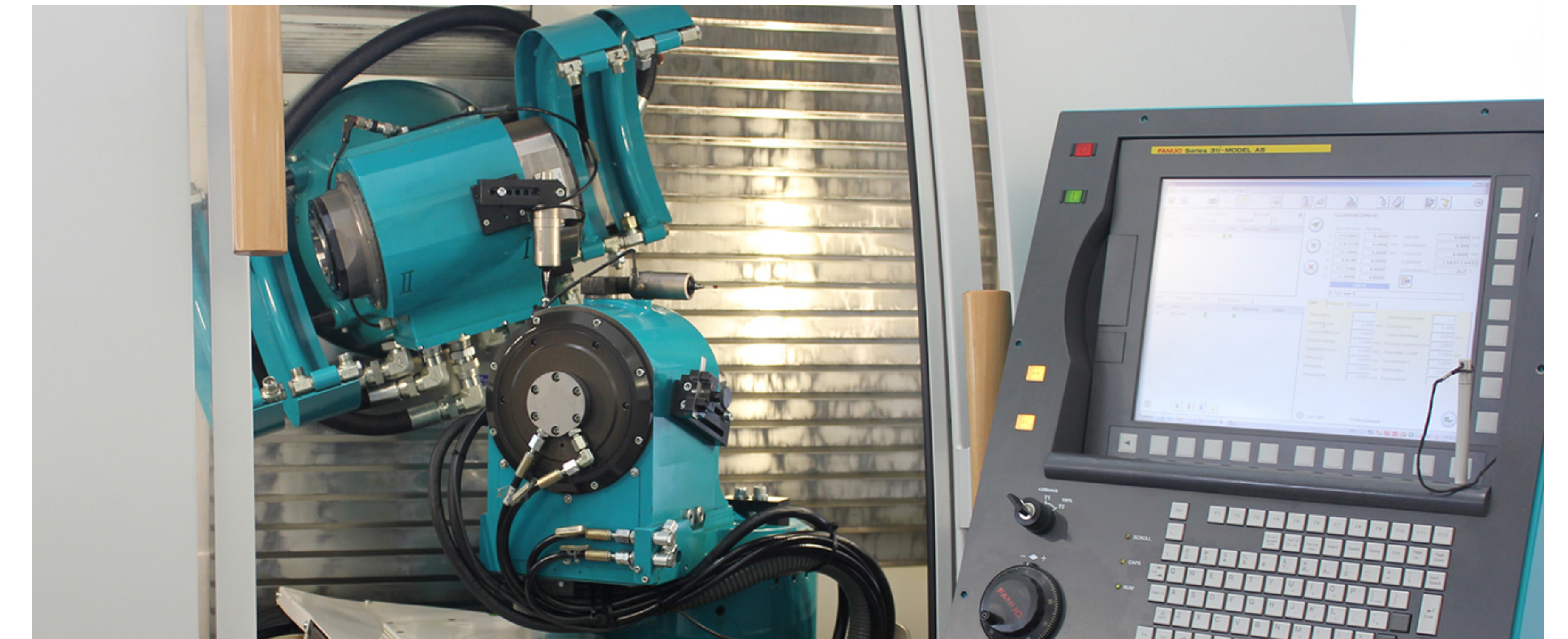
SWISS MANUFACTURER'S SPECIALIST TOOL GRINDING MACHINES RELY ON FANUC CONTROLS AND DRIVES

Innovations right down to the detail

Schneeberger provides for higher performance density in tool grinding. With nine machines, such as the compact NGC, J. Schneeberger Maschinen AG provides for high efficiency in tool grinding. This is also thanks to components such as a proprietary, easily-integrated 3D probe that can be implemented in all Schneeberger machines. For many years, the trusted partner, FANUC, has stood by the Schneeberger technology engineers, providing assistance in control and drives.

Transition to a new generation of controls

For all machines in the higher-end segment, i.e. also for the NGM tap and the NGC, Schneeberger uses the FANUC Series 31i-B5 CNC controllers ideal for 5-axis machining – in a version with an integrated "Panel i" industrial PC. This is linked to the CNC via the HSSB high-speed bus. It enables the grinding specialist to apply his expertise in the proprietary software Quinto with a customised interface.

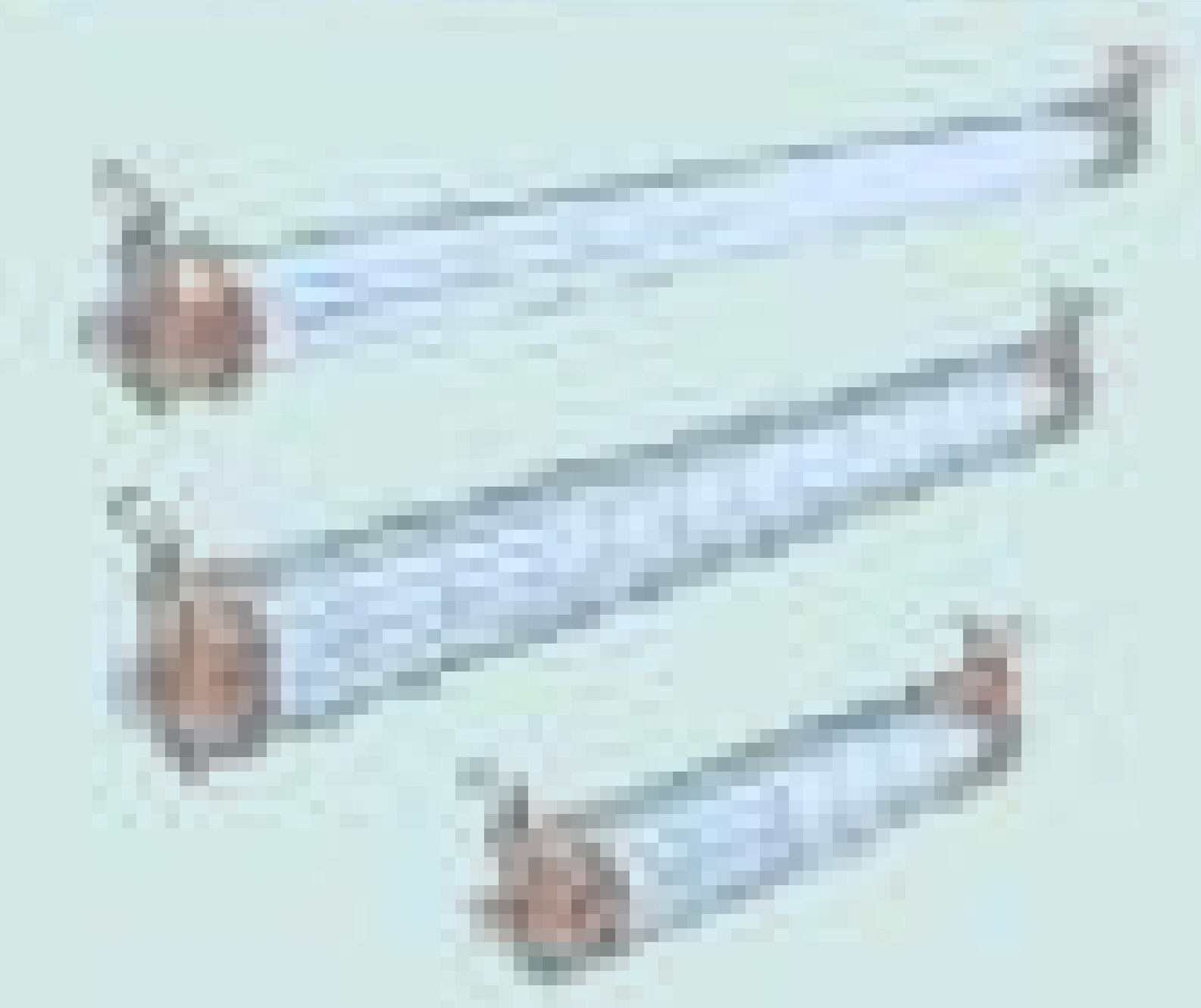


Small footprint, large work envelope

Last year, Schneeberger introduced with the NGC a universal and super compact new generation of grinding machines. It is suitable for standard tools such as face, radius and profile tooling cutters, high-performance borers, reamers, profile turning plates in HSS, carbide and Cermet. Specifically-designed software, grinding processes and clamping systems are available for the sharpening of hobs, shaper cutters, stick blades and bevel gear blades. Production grinding of blades for the paper, food or plastic industry is part of the range of capabilities, along with the machining of disc-shaped work pieces with special clamping and automatic loading.

NETFORCE-OFFSHORE™ ENGINEERING

THE **WORLD CLASS LOCAL MARINE**
AND OIL AND GAS EXPERTISE



Ex-BAC&BACE Series



Ex-BJG Series



Ex-BCT&BCTE(D) Series



Ex-BEP Series



Ex-BCL Series



Ex-BNW Series



- CORE BUSINESS** : EX IECEx certified: LIGHTINGS ALL RANGES, JUNCTION BOX, POWER PANEL, CABLE GLANDS, CABLE TRAY (SS), SUBSEA SERVICES
- CORE EXPERTISE** : MARINE SERVICES, OFFSHORE/MARINE CABLE(ALL RANGE), AIR COMPRESSOR SYSTEM (FULL RANGE)
- CORE SERVICES** : OFFSHORE / ONSHORE MARINE SERVICES, ELECTRICAL ENGINEERING SERVICES (PNEUMATICS, HYDRAULIC, COMPRESSOR SYSTEM)

Events Calendar

JULY 2019

10 - 11 JULY 2019

SABAH OIL & GAS CONFERENCE &
EXHIBITION 2019

*Grand Ballroom, Magellan Sutera Resort,
Kota Kinabalu, Sabah*

17 - 18 JULY 2019

INDO WATER 2019

Jakarta Convention Centre

17 -18 JULY 2019

BEYOND PARADIGM SUMMIT 2019

MITEC, Kuala Lumpur

18 - 21 JULY 2019

MALAYSIA INTERNATIONAL PLASTIC
MOULD & DIE EXHIBITION

PWTC, Kuala Lumpur

18 - 21 JULY 2019

MALAYSIA PACK & FOOD PPO 2019

PWTC, Kuala Lumpur

AUGUST 2019

14 - 16 AUGUST 2019

VIETNAM MANUFACTURING EXPO 2019

I.C.E Hanoi, Vietnam

21- 24 AUGUST 2019

TAIWAN AUTOMATION INTELLIGENCE &
ROBOT SHOW 2019

Taipei Nangang Exhibition Center, Hall 2

22 - 25 AUGUST 2019

CAMBODIA INTERNATIONAL MACHINERY
INDUSTRY FAIR

Phnom Penh, Cambodia

28 - 30 AUGUST 2019

INAMARINE 2019

JiExpo Kemayoran, Jakarta, Indonesia

SEPTEMBER 2019

03- 06 SEPTEMBER 2019

SPE OFFSHORE EUROPE

Aberdeen, UK

11 - 14 SEPTEMBER 2019

ELECTRIC, POWER & RENEWABLE
ENERGY INDONESIA 2019

JiExpo, Kemayoran, Jakarta, Indonesia

11 - 13 SEPTEMBER 2019

NEPCON VIETNAM 2019

I.C.E. , Hanoi, Vietnam

12 - 14 SEPTEMBER 2019

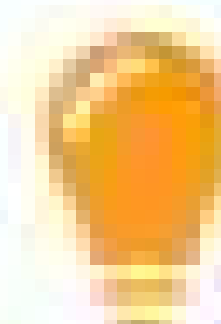
PROPAK MYANMAR 2019

Myanmar Expo, Yangon

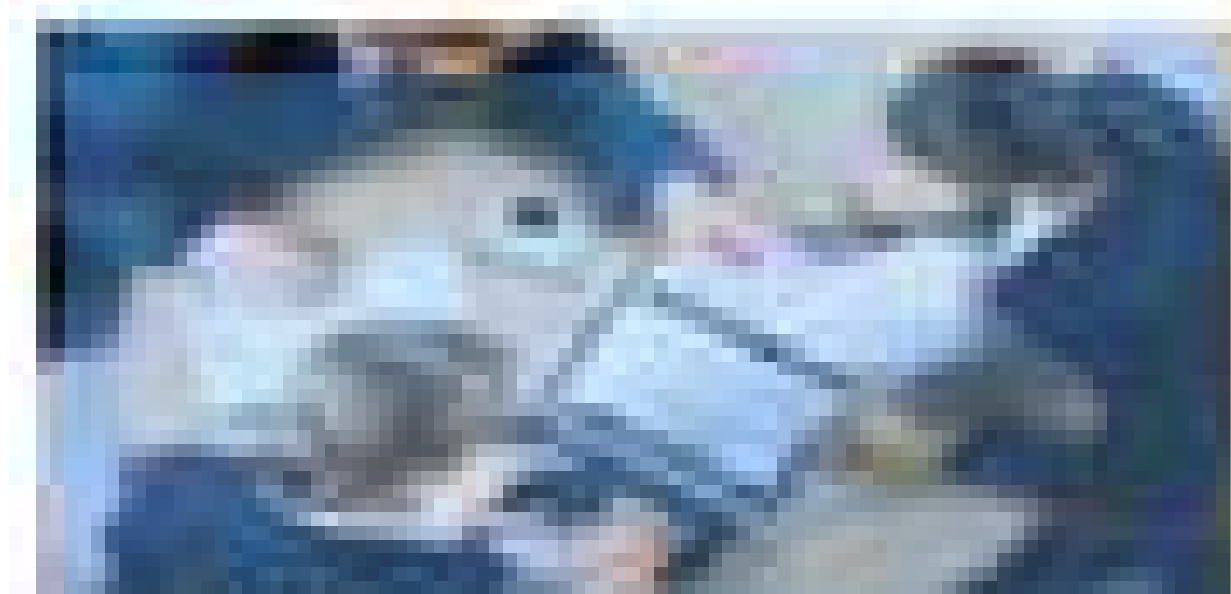
16 - 21 SEPTEMBER 2019

EMO HANNOVER

Hannover, Germany



Search / Buy / Connect / Update
@ www.IndustrialGuideAsia.com



WE ARE HERE TO

BUILD YOUR BRAND

info@industrialguideasia.com

2019

Events Calendar

SEPTEMBER 2019

18 - 21 SEPTEMBER 2019

OIL & GAS INDONESIA 2019
Jakarta, Indonesia

18 - 21 SEPTEMBER 2019

MINING INDONESIA 2019
Jakarta, Indonesia

18 - 21 SEPTEMBER 2019

TUBE SOUTHEAST ASIA 2019
Bangkok, Thailand

18 - 21 SEPTEMBER 2019

WIRE SOUTHEAST ASIA 2019
Bangkok, Thailand

18 - 21 SEPTEMBER 2019

MARINTEC INDONESIA
Jakarta, Indonesia

23 - 24 SEPTEMBER 2019

INDUSTRIAL AUTOMATION FIESTA 2019
*Dewan Taman Mawar, Pasir Gudang,
Johor Bahru, Malaysia*

OCTOBER 2019

9- 12 OCTOBER 2019

INTERNATIONAL FURNITURE
MANUFACTURING COMPONENTS
JiExpo, Kemoyan, Indonesia

15 - 17 OCTOBER 2019

INTERNATIONAL TRADE FAIR FOR
LABORATORY EQUIPMENT & TECHNOLOGIES
PWTC, Kuala Lumpur, Malaysia

10 -12 OCTOBER 2019

METALEX VIETNAM 2019
SECC, HCMC, Vietnam

NOVEMBER 2019

14 - 15 NOVEMBER 2019

OIL & AS FIESTA VIETNAM
Imperial Hotel Vung Tau, Vietnam

25 - 26 NOVEMBER 2019

OIL & GAS FIESTA PENERANG
*The Westin Desaru Coast Resort
Convention Hall, Pengerang, Johor, Malaysia*

DECEMBER 2019

4 -7 DECEMBER 2019

MANUFACTURING INDONESIA 2019
Jakarta International Expo, Indonesia



**WE ARE HERE
TO BUILD
YOUR COMPANY**

INFO@INDUSTRIALGUIDEASIA.COM

2019



POWER TRANSMISSION AND CONTROL 2019

www.ptc-asia.com

Driven to be SMART

International Trade Show for Hydraulics, Pneumatics, Seals, Gears, Motors, Chains, Belts, Bearings and Springs

23-26 Oct. 2019

Shanghai New Int'l Expo Centre



Scan code to pre-register, enjoy 5 benefits



- 1 Free ticket (value RMB 50)
- 2 Fast pass
- 3 Business match-making
- 4 Small gift
- 5 Free rights to concurrent conferences

Please Contact



Hannover-Milano fairs Shanghai Ltd

Tel: +86-21-3045 6700
Fax: +86-21-3045 9355 / 3088 2855
E-mail: ptc-asia@hmf-china.com
website: www.ptc-asia.com

For Writer:
Ms. Alison Du
Tel: +86-21-3045 6700 * 109
E-mail: alison.du@hmf-china.com



Reliable connector systems

Providing latest technology and highest quality in products and customized solutions.

Based on the patented Multilam Technology, Stäubli Electrical Connectors offers electrical connectors for various Industrial Applications, Automation, Renewable Energies, Medical Devices, Test & Measurement equipment, and customized solutions for individual requirements.

www.staubli.com/electrical

Multi-Contact

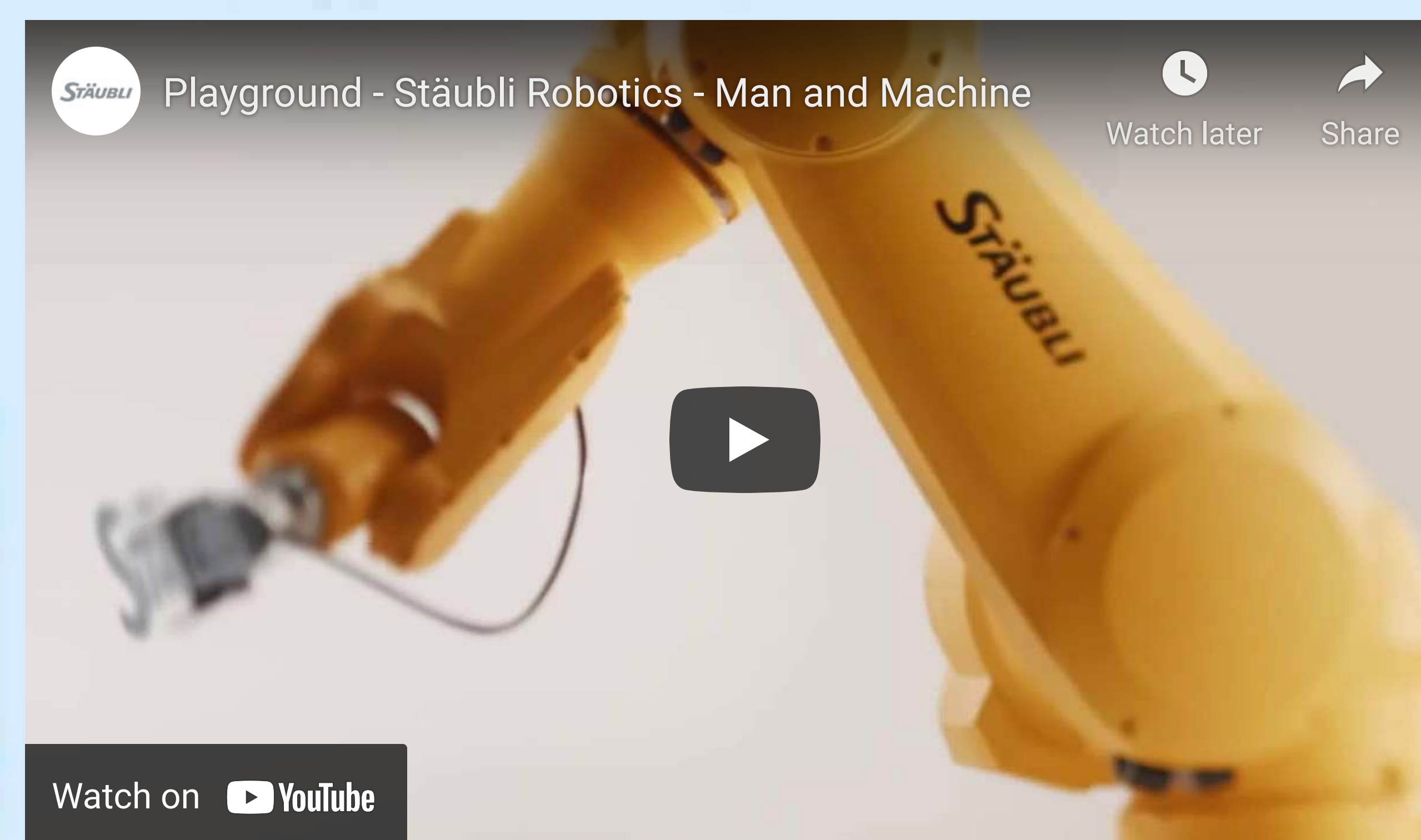


As of January 2017, original MC4 inventor Multi-Contact conducts its business and services as Stäubli Electrical Connectors.

Meet us at the global top events or contact us!

Phone: +65 626 609 00

ec.sg@staubli.com



STÄUBLI