[Press Release]

LSCM Logistics Summit 2017

Robotics and Technologies Open Up New Business Prospects
For Local Logistics Industry by Enhancing Operational Efficiency
LSCM Showcases Latest Enabling Technologies for the Belt and Road Initiative

(Hong Kong, 15 September 2017) To promote economic cooperation among the Eurasian countries, the Belt and Road Initiative has been designed to enhance the orderly free-flow of economic goods and services and the efficient allocation of resources. As such, timely and efficient transportation and movement of goods will be in enormous demand. In order to cope with future economic growth, Robotics Technology will have a profound and positive impact on the industry development.

The LSCM Logistics Summit 2017 is the Centre's annual event by bringing together senior government officials, top-notch industry leaders, prominent researchers and academia representatives. Taking place at Hong Kong Science Park, the Summit showcases its latest research projects focusing on the "**Logistics Robotics and Technologies for Belt and Road Initiative**". Distinguished speakers include **Mr CHAN Fan, Frank JP**, Secretary for Transport and Housing, The Government of the Hong Kong Special Administrative Region; **Mr Alex KWAN,** Executive Director (Engineering & Technology), Airport Authority Hong Kong; **Mrs Jenny LAM**, Chief Executive Officer, Cathay Pacific Services Ltd; **Mr Esmond LEE**, Immediate Past Executive Director (Financial Infrastructure), Hong Kong Monetary Authority; **Mr Albert SU**, Chief Executive, Tung Wah Group of Hospitals; **Ms Sandra TAM**, Head of Airport Command, Customs and Excise Department, The Government of the Hong Kong Special Administrative Region; **Dr Sunny CHAI**, Chairman of Board of Directors, LSCM R&D Centre and **Mr Simon WONG**, Chief Executive Officer, LSCM R&D Centre shared inspiring insights and valuable experiences in the related topics.

Other than local speakers, overseas speakers were invited to share their valuable experience, including **Mr Richard ATWAL**, Chief Executive Officer, Renewit Solar Limited; **Ms Felicia CHUA**, Co-Founder, Coding Garage in Singapore. They shared management experience in foreign countries which enriched the Summit with global perspective. It was also a chance for the Hong Kong industries to understand the development of overseas industries under the Belt and Road Initiative.

Four innovative technologies, including **Autonomous Guided Vehicle (AGV) , Human Following Robot for Goods Delivery, Intelligent Patrol and Inspection Robot, and Robotic Effector System for Label Affixing**, were showcased at the Summit to demonstrate how these technologies can streamline the operational efficiency. Other programmes included exhibitions from trade partners and networking sessions to build collaboration opportunities.

Dr Sunny CHAI said in his welcoming speech**, "**The innovative technologies showcased by the LSCM R&D Centre are intended for solving the needs of logistics and transport industry, hence to encourage cooperation and expand trading network."

Mr Simon WONG emphasized that, "The LSCM R&D Centre works closely with the industries and develops the innovative technologies that can deal with the challenges facing by the industries."

There are four innovation and enabled technologies showcased in the Summit:

Autonomous Guided Vehicle (AGV) Looks like a "Walking Rack"

To cope with the challenge of manpower shortage, increasing rental and dynamic customers' needs (e.g. e-commerce), the Autonomous Guided Vehicles (AGVs) is an innovative solution for local warehouses management. Differentiate from the traditional logistics practices, the AGV which with 250kg load capacity will automatically move the whole rack of the ordered goods to the sorting desks. Therefore the workers do not need to walk through all related racks to pick up the goods. It effectively reduces manpower, maximizes area usage and increases efficiency and accuracy.

LSCM Technologies deployed in this application:

1. **AGV mechanical design & control system –** the vehicle looks like a "walking rack''.
2. **Computer vision & pattern recognition of landmarks for positioning** –the vehicle can walk freely on the floor grids according to the command from the system.
3. **Navigation & Fleet Management** – helps enterprises using the warehouse space more flexibly and saving the time of transporting goods.

Human Following Robot for Goods Delivery - minimize the risk of injury

The Human Following Robot can help reducing the workload and minimizing the risk of injury occurred to the construction workers. It is developed to track and follow the worker automatically for delivering heavy tools and materials in the construction site. Equipped with a basket which size is 74cm (Length) and 55cm (Width), this robot can support loads up to 200kg.

LSCM Technologies deployed in this application:

1. **Robot mechanical design & control system**
2. **Computer vision & pattern recognition for human following function**
3. **Multiple sensors for obstacle avoidance**
   - LIDAR
   - Infra-red & Ultrasonic Sensor
   - Touch Sensor

The robot is like a strong "follower" of workers to deliver the heavy tools. Configured with multiple sensors, the robot can detect and avoid the obstacles automatically to ensure the safety.

The robot is in trial in construction sites, warehouses and government organizations presently, so as to facilitate the official launch in the future.

Intelligent Patrol and Inspection Robot – 24/7 security guard

This ingenious mobile service robot is specially designed for navigating in the highly condensed warehouse and construction site in Hong Kong. It can patrol in the site for 24 hours, either randomly or on specific route to monitor the workers, the machinery tools, the properties and the environments. It can work under adverse situation without taking rest.

LSCM Technologies deployed in this application:

1. **Robot mechanical design & control system** – control centrally
2. **Computer vision & facial recognition** – identify different people, the images captured could be immediately sent to the monitoring system in security room**.**
3. **Thermo-Camera for surface temperature detection** – simply scan and read the surface temperature of workers, thus prevent heat stroke.
4. **LIDAR for positioning & obstacle avoidance**

Based on this platform, more innovative monitoring and interactive applications can be further developed.

Robotic Effector System for Label Affixing Saves Manpower and Increase Efficiency

With the boom of eCommerce, the courier warehouse handles huge numbers of small & medium size parcels in different shapes & stiffness. The Robotic Effector System for Label Affixing helps to scan the parcel which has passed the conveyor belt, identify a suitable space automatically, and jet the bar-code label or RFID tag to that place by the specially designed end-effector and the robotic arm. The parcels could be intact without touching the parcels.

LSCM Technologies deployed in this application:

1. **Depth Camera to capture the 3D image**
2. **Special designed end-effector to jet labels for different shapes & stiffness**
3. **Intelligent Vision & Robotic Arm Cooperation & Coordination system**

The Robotic Effector System for label Affixing is currently in the experimental stage, and is planned to apply to express parcel, warehouses, supermarkets, etc.

The above four innovative technologies are showcased by the LSCM R&D Centre, which are based on the business model of Hong Kong industries, with the hope of streamlining the operational efficiency.

About LSCM R&D Centre

The Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies (LSCM R&D Centre) was founded in 2006, with funding from the Innovation and Technology Fund of the HKSAR Government, and co-hosted by The University of Hong Kong, the Chinese University of Hong Kong and the Hong Kong University of Science and Technology. It aims to strengthen the local Logistics Industry by providing a one-stop shop for technology transfer and commercialization, and reinforce the cooperation between the industry and research institutes, to bring about meaningful and significant benefits to the community.

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