MEDIA RELEASE

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17 APRIL 2014

I²R SHOWCASES INNOVATIONS FOR A WORLD OF INCREASED PRODUCTIVITY AND EFFICIENCY

Singapore – A*STAR’s Institute for Infocomm Research (I²R) is continuing its efforts to help international organisations move their business forward and enabling local SMEs gain their competitive edge through increased productivity. The home-grown innovations will be showcased at IoT Asia 2014 from 21 to 22 April and A*STAR SME Day on 21 April 2014.

Last October, I²R exhibited its ‘ready-to-go’ ICM productivity solutions at its annual flagship event, ICM Horizons. This was in response to the National Productivity Council’s call to boost the productivity and efficiency of Singapore’s local enterprises to drive productivity for labour-constrained SMEs. Within a span of six months, more than 57 of I²R’s technology deployments have been implemented by 27 SMEs, with technologies ranging from image recognition, augmented reality to sensor networks.

Feinmetall, a local SME in precision engineering, is now using the image recognition technology ‘Snap2Tell Alive’ mobile application, which streams instructional videos of production equipment to mobile devices, allowing customers to view these easily instead of referring to printed manuals or consulting technicians. This enhances the productivity of Feinmetall as their technicians need not be present at their customers’ premises. At the same time, customers’ equipment downtime is reduced, as they can now bring the equipment back to operation without much delay.

IoT Asia 2014

The inaugural IoT (Internet of Things) Asia Exhibition and Conference is the first in the region to focus on bringing IoT technology and transformation to end-businesses, governments and society. It provides a spectrum of enterprise platform solutions for Multinational Corporations (MNCs) and Small and Medium Enterprises (SMEs) to integrate within their product or solution offerings and enables them to gain an edge in information business. I²R is one of the founding members of IoT Asia 2014.

At the event, I²R is showcasing three exciting IoT innovations: the Toilet Cleanliness Monitoring System, Taxi Queue Monitoring System and Outdoor Car Park Monitoring Systems. These systems are designed to improve operational efficiency and customer experience in various industries. The event is set to be an important platform for I²R to demonstrate its commitment to innovation and productivity enhancement.

I²R is excited to be participating in IoT Asia 2014 and looks forward to the opportunity to showcase its latest innovations and connect with potential partners and customers. The event promises to be a dynamic and informative experience for all attendees, with a focus on driving productivity and efficiency in a world of increased connectivity.

For more information, please visit the I²R website at www.i2r.a-star.edu.sg.
System. These three systems have been installed at the Singapore EXPO Convention and Exhibition Centre (Singex) for test bedding as part of a 3-year MOU between I2R and Singex.

a) **Toilet Cleanliness Monitoring System**

The Toilet Cleanliness Monitoring System is maintenance-free as it applies energy-harvesting technologies to power the sensors that count the number of users going past the toilet’s main door. Cleaning companies can deploy their workers more effectively to clean the toilets according to their ‘cleanliness level’ using this technology.

The system is scalable as it also has the option to include ammonia sensors and ‘on-demand’ requests to alert the cleaners if a particular toilet needs additional attention. This technology is expected to improve the productivity of cleaning companies by up to 20 percent. Usually, public toilets are cleaned at regular intervals, regardless of the number of times the toilet is used. This results in manpower wastage. The system will be installed in 10 toilet cubicles at the Singapore EXPO.

I2R will be working with cleaning companies and commercial building owners to deploy this system, under A*STAR’s Technology Adoption Programme (TAP). The research institute is also working with system integration companies to license this technology and introduce it to the mass market.

b) **Taxi Queue Monitoring System**

Most of us have encountered a situation where we have to queue for a long time before boarding a taxi. I2R’s Taxi Queue Monitoring System aims to provide an effective system of measuring the number of people queuing at a taxi stand. Using innovative human detection and tracking technology through images captured by a CCTV, the system is able to analyse and forecast the average waiting time by taking into account the number of people waiting in line.

A Proof-of-Concept System has been set up at the taxi stand near Foyer 1 at Singapore Expo. The information analysed and forecasted will be showcased at IoT Asia 2014.

I2R plans to work with taxi operators and building owners to install the Taxi Queue Monitoring System, which will provide real-time information for taxi companies to deploy their available taxis efficiently and provide convenience to passengers.

c) **Outdoor Car Park Monitoring System**

I2R’s Outdoor Car Park Monitoring System is a visual system that enables car park management companies to track outdoor car park lots occupancy in a cost-effective manner.

By using a network of wireless cameras to detect vacated car park lots, this system provides motorists with real-time information on parking lots availability in an outdoor environment. The system also works at night, with the availability of street lights. The Outdoor Car Park Monitoring System differs from the conventional indoor car park monitoring system as it does not require
sensors to be installed overhead or embedded underground. This translates to lower system hardware and installation costs.

Car owners can locate empty car park lots more efficiently and within a shorter time, saving petrol and reducing their carbon footprint. A proof-of-concept system has been deployed at Car Park A at Singapore EXPO.

Mr. Aloysius Arlando, CEO, Singex Holdings, said: “Singex is pleased to collaborate with I²R to test these monitoring systems at the Singapore EXPO Convention and Exhibition Centre. Our visitors will be able to experience these advanced technologies that will provide them with a more pleasant visit to Singapore EXPO. We are keen to study the results to see how these innovations are able to improve productivity and lower operating costs.”

Dr. Lee Shiang Long, Executive Director of I²R, said, “I²R is adopting a Whole-of-I²R approach in bringing the diverse and relevant range of technology capabilities to boost productivity and efficiency of large organisations and local SMEs. The showcase of our home-grown technologies at premier platforms such as IoT Asia is a great opportunity for companies to share and learn about how innovations can positively impact their businesses and meeting their customers’ needs by boosting productivity and efficiency.”

**Ready-To-Go Technologies for SMEs**

I²R will also showcase its ‘ready-to-go’ innovations at A*STAR’s SME Day on 21st April.

These ICM technologies that can be readily adopted by SMEs are translated from I²R’s research efforts to readily deployable technologies and platform solutions for easy adoption by SMEs to meet their customers’ needs.

I²R will continue to work directly with government agencies, trade associations and local SMEs to deploy more of these ‘ready-to-go’ technologies for quick and easy deployment and adoption.

Enclosed:

**Annex A** - Illustrations of Toilet Cleanliness, Taxi Queue and Outdoor Car Park Monitoring Systems

**Annex B** – Details of Virtual Try-On (VTO) Augmented Reality System; Snap2Tell Alive Image Recognition Technology and Age & Gender Recognition Technology that will be showcased at A*STAR’s SME Day

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**About the Agency for Science, Technology and Research**

The Agency for Science, Technology and Research (A*STAR) is Singapore's lead public sector agency that fosters world-class scientific research and talent to drive economic growth and transform Singapore into a vibrant knowledge-based and innovation driven economy.

In line with its mission-oriented mandate, A*STAR spearheads research and development in fields that are essential to growing Singapore’s manufacturing sector and catalysing new growth industries. A*STAR supports these economic clusters by providing intellectual, human and industrial capital to its partners in industry.

A*STAR oversees 18 biomedical sciences and physical sciences and engineering research entities, located in Biopolis and Fusionopolis, as well as their vicinity. These two R&D hubs house a bustling and diverse community of local and international research scientists and engineers from A*STAR’s research entities as well as a growing number of corporate laboratories.

For more information about A*STAR, please visit [www.a-star.edu.sg](http://www.a-star.edu.sg)

**About Institute for Infocomm Research (I²R)**

Singapore’s largest ICT research institute, I²R (pronounced as i-squared-r) is a member of the Agency for Science, Technology and Research (A*STAR) family. Established in 2002, our vision is to power a vibrant and strong infocomm ecosystem in Singapore. I²R focuses on conducting mission oriented research to address key challenges faced locally. At I²R, intelligence, communications and media (ICM) form our 3 strategic thrusts. Our research capabilities are in information technology, wireless and optical communication networks, interactive and digital media, sensors, signal processing and computing. We perform R&D in ICM technologies to develop holistic solutions across the ICM value chain and we believe that the greatest impact is created when research outcomes are translated into technologies our partners can readily deploy at a competitive advantage. For more information about I²R, please visit [www.i2r.a-star.edu.sg](http://www.i2r.a-star.edu.sg).
The **Toilet Cleanliness Sensor System** is maintenance-free as it applies energy-harvesting technologies to power the sensors that count the number of users going past the toilet’s main door.
The Outdoor Car Park Monitoring System is a visual system that enables car park management companies to track outdoor car park lots occupancy in a cost-effective manner.
The Taxi Queue Monitoring System is able to analyse and forecast the average waiting time by taking into account the number of people waiting in line.
Details of technologies that will be showcased at A*STAR SME Day on 21st April

The Virtual Try-On (VTO) augmented reality system allows users to try different clothes in a fun and interactive way from a ‘digital’ wardrobe.

The Snap2Tell Alive image recognition technology provides convenient and quick access to information via an image. By simply taking a picture of an item, relevant multimedia contents (video, audio, URL links) about it can be presented to the user.
The **Age & Gender Recognition Technology** is able to measure audience demographic by detecting frontal human faces on digital video stream.