

## **MEDIA RELEASE**

**EMBARGOED UNTIL 30 MARCH 2016, 1630**

### **A\*STAR'S IMAGE ANALYTICS TECHNOLOGY HELPING CONSTRUCTION INDUSTRY PLAYERS MONITOR POLLUTION MORE EFFECTIVELY**

SINGAPORE – Dr. Koh Poh Koon, Minister of State for Trade & Industry and National Development visited a construction project site to witness how technology can be deployed to monitor pollution at construction sites and lead to higher productivity and greater efficiency. Through a partnership between the Agency for Science, Technology and Research (A\*STAR) and PUB, the national water agency, construction companies now have access to A\*STAR's Silt Imagery Detection System (SIDS), which enables them to monitor earth control measures in a manpower efficient manner.

#### **A\*STAR-PUB's joint innovation to improve efficiencies in silt discharge monitoring**

Earth control measures (ECM) are implemented at construction sites to safeguard Singapore's water resources by ensuring that silt is not washed from exposed earth surfaces into the waterways after rain. Since 2013, contractors of sites of 0.5 hectares and above are required to implement closed-circuit televisions (CCTVs) at public drains to monitor treated rainwater discharges to ensure that the discharge is not silty. However, continuous monitoring of CCTV cameras is time-consuming and manpower-intensive, while periodic monitoring of CCTV images also means data collected is not timely.

Through the Technology Adoption Programme (TAP), PUB worked with A\*STAR's Institute for Infocomm Research (I<sup>2</sup>R) to develop SIDS, which uses image

analytics technology to detect silt discharge and CCTV downtime (i.e. poor or no images). SIDS extracts and analyse real-time images from CCTVs, and automatically sends alerts to various parties such as the contractor, CCTV vendor and PUB upon detection of silt discharge or image problems. Mr Quah Hock Lai, Principal Engineer, PUB's Catchment and Waterways department said, "With two-thirds of Singapore being water catchment, it is important that all of us play a part to ensure that our waterways and reservoirs are not polluted. The use of image analytics through the SIDS helps the contractors to obtain real-time audits for any silty discharge into public drains and enables PUB to work closely with them to take prompt rectification action."

### **SIDS increases companies' productivity**

Ho Lee Construction Pte Ltd is a local building contractor that has implemented SIDS across their five construction sites since December 2015. This has enabled the company to save approximately 500 man-hours per year.

With the automated system, workers are now re-deployed to other jobs such as housekeeping work, which can include the maintenance of treatment plants, inspection and cleaning of ECM perimeter areas and drains, as well as cleaning of ECM holding tanks and mosquito vector-control work. The SIDS also benefited Ho Lee's CCTV vendor, Absolute Instrument System, which was able to reduce manual monitoring of the CCTV footages for Ho Lee. With SIDS, the vendor can automatically detect issues such as CCTV downtime or images of silty discharge and alert Ho Lee instantly. Mr Benjamin Tan, Managing Director of Ho Lee Construction Pte Ltd said, "The biggest benefit to a contractor from Silt Imagery Detection System (SIDS) is that it allows us to adopt a more productive and self-regulatory monitoring system for the Earth Control Measures (ECM) implemented in our project sites. Through self-regulation of ECM systems using this technology as well as working with PUB and HDB, we are able to achieve our joint goal of adopting more sustainable construction practices and clean water for Singapore."

Prof. Tan Sze Wee, Executive Director of A\*STAR's Science and Engineering Research Council, said, "Today's showcase of the Silt Imagery Detection System (SIDS) is a demonstration of A\*STAR's public-private and inter-agency partnerships and our efforts in applying our capabilities to meet the needs of the urban solutions

and sustainability domain. A clean water system is important for Singapore, and pollution prevention from the construction sector can be addressed more efficiently with the SIDS. We will see more opportunities in the future as A\*STAR applies its capabilities across a wide variety of sectors to boost productivity, such as the construction industry as demonstrated by Ho Lee Construction Pte Ltd.”

At the visit, Minister of State Dr Koh Poh Koon said, “Technology is a key enabler to help our companies raise their productivity and stay competitive. Our companies need to harness technology to improve productivity, become leaner and more efficient. Government schemes such as the Technology Adoption Programme (TAP) offer technology solutions to local enterprises across sectors, so that they can access technology with ease. To date, more than 1,000 companies have benefitted from a total of 1,800 technology adoptions.”

### **SIDS for Broader Adoption**

As of February 2016, PUB has enhanced its requirement for all new construction sites with site areas of 0.2 hectares and above to utilise SIDS as part of their earth control monitoring procedures. Currently, 265 CCTV cameras at 178 construction sites island-wide are connected to the SIDS. By end-2017, 800 construction sites are expected to adopt the same technology, amounting to approximately 100,000 man-hour savings per year for construction contractors.

The SIDS will also be shared with government agencies involved in development projects, as well as other major private developers to raise awareness and promote self-regulation among industry players. This will take place within the next 12 months in phases.

-End-

**Enclosed: Annex A –Factsheet on A\*STAR’s Silt Imagery Detection System (SIDS)**

For media queries and clarifications, please contact:

Gladys Chung

Assistant Head, Corporate Communications

Agency for Science, Technology and Research

Tel: +65 6826 6348

Email: [gladys\\_chung@a-star.edu.sg](mailto:gladys_chung@a-star.edu.sg)

Teo Yin Yin

Senior Assistant Director, Corporate Communications

PUB

Tel: +65 6571 4055

Email: [teo\\_yin\\_yin@pub.gov.sg](mailto:teo_yin_yin@pub.gov.sg)

Angeline Yap

Senior Assistant Director, Corporate Communications

Ministry of Trade and Industry

Tel: +65 6332 7315

Email: [angeline\\_yap@mti.gov.sg](mailto:angeline_yap@mti.gov.sg)

### **About the Agency for Science, Technology and Research (A\*STAR)**

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

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

We play a key role in nurturing and developing a diversity of talent and leaders in our Agency and Research Institutes, the wider research community and industry. A\*STAR oversees 18 biomedical sciences and physical sciences and engineering research entities primarily located in Biopolis and Fusionopolis.

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

## **About PUB**

PUB is a statutory board under the Ministry of the Environment and Water Resources. It is the water agency that manages Singapore's water supply, water catchment and used water in an integrated way.

## **About PUB's tagline: Water for All: Conserve, Value, Enjoy**

PUB has ensured a diversified and sustainable supply of water for Singapore with the Four National Taps (local catchment water, imported water, NEWater, desalinated water).

To provide water for all, PUB calls on all to play our part to conserve water, keep our water catchments and waterways clean and build a relationship with water so we can enjoy our water resources. If we all play our part, we can have enough water for all our needs – for industry, for living, for life.

## **Find out more about us**

Like us at [www.facebook.com/PUBsg](http://www.facebook.com/PUBsg)

Follow us on [www.instagram.com/PUBsingapore](http://www.instagram.com/PUBsingapore)

and [www.twitter.com/PUBsingapore](http://www.twitter.com/PUBsingapore)

Subscribe to our channel at [www.youtube.com/sgPUB](http://www.youtube.com/sgPUB)

For our latest event photos, visit [www.flickr.com/PUBsg](http://www.flickr.com/PUBsg)

or [www.pinterest.com/PUBsg](http://www.pinterest.com/PUBsg)

Download our mobile apps: MyWaters for [iOS](#), [Android](#) or [Windows Phone](#) and

PURE Magazine for [iOS](#), [Android](#), [Blackberry](#) or [Windows Phone](#)

Visit our website at [www.pub.gov.sg](http://www.pub.gov.sg)

## **ANNEX A: FACTSHEET ON A\*STAR'S SILT IMAGERY DETECTION SYSTEM (SIDS)**

Through funding from Technology Adoption Programme (TAP), the SIDS jointly developed by A\*STAR's Institute for Infocomm Research (I<sup>2</sup>R) and PUB enables stakeholders in the construction industry to monitor silty discharge from their construction sites automatically, 24 hours a day. This frees up manpower resources by construction sites across the island from the time-consuming act of monitoring the CCTV continuously to minimise silty discharge from flowing into public drains.

The system also enables CCTV providers to improve their efficiency in maintaining the uptime of their cameras for their customers.

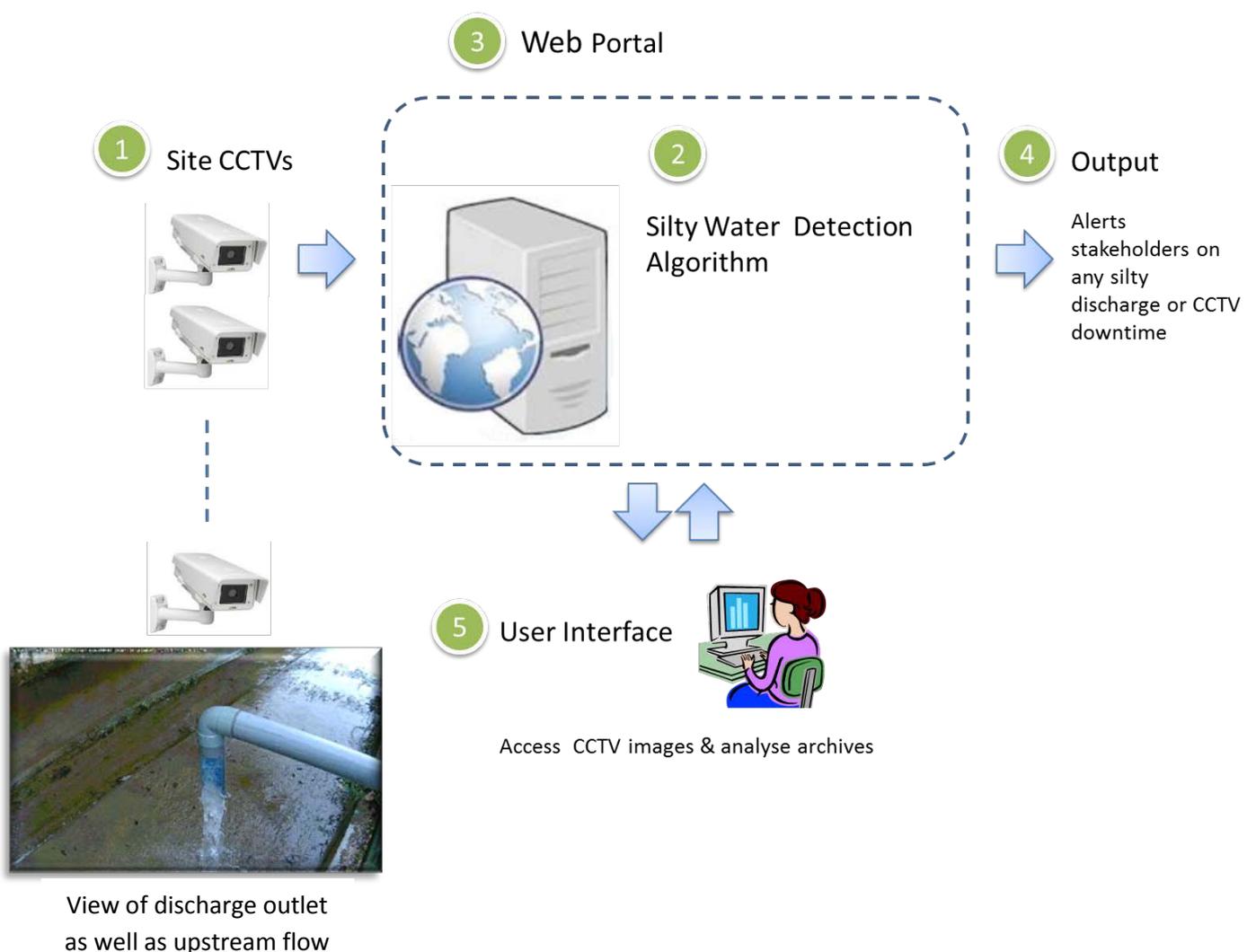


Figure 1: Flow diagram of Silt Imagery Detection System (SIDS)