

SPOTLIGHT



OFFICIAL LAUNCH OF GEOWORKS

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Official Launch of GeoWorks

TRANSFORMING SPACES

Land and Air Space Acquisition for Jurong Region Line

FUTURE READY

World Cities Summit

GeoWorks hosts Global Space Hackathon (Singapore)

Public Sector Transformation Awards

INTERNATIONAL EXCHANGE

TRANSFORMING SPACES



LAND AND AIR SPACE ACQUISITION FOR JURONG REGION LINE

SLA has acquired land and air-space for the construction of the Jurong Region Line to enhance connectivity in the western part of Singapore.

FUTURE READY



GEOWORKS HOSTS GLOBAL SPACE HACKATHON (SINGAPORE)

GeoWorks witnessed intense competition as participants of the Singapore chapter of the global space hackathon – ActinSpace@2018 pitched their ideas to an expert jury.

FUTURE READY



PUBLIC SECTOR TRANSFORMATION AWARDS

Vincent Aw did SLA proud by winning the “Public Service Transformation Star Manager” and “Distinguished Excel Innovation Champion” awards.

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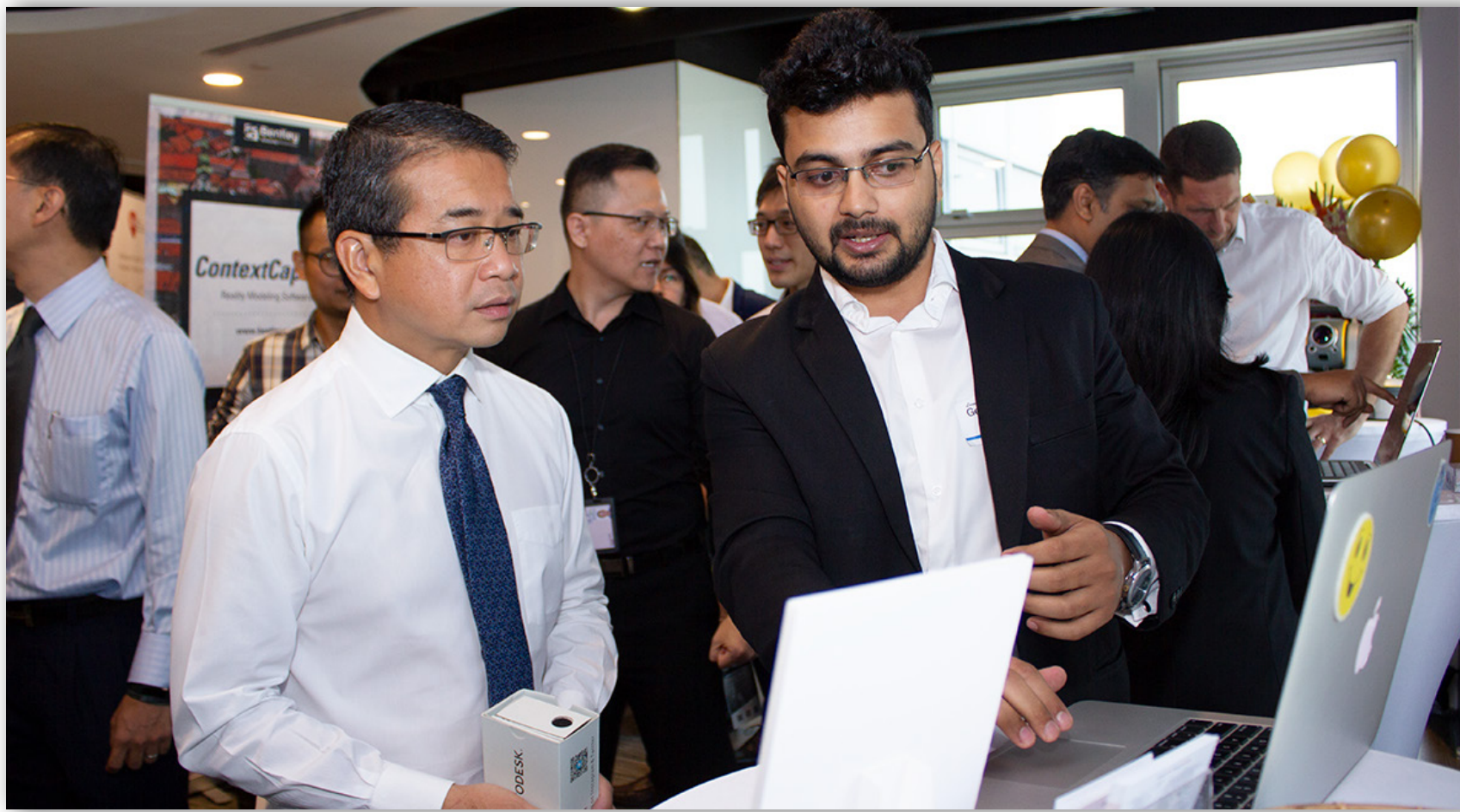
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► Senior Minister of State for Law and Health Mr Edwin Tong at the launch of GeoWorks

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GeoWorks, Southeast Asia's first industry centre to promote geospatial innovation and competencies, was officially launched by Senior Minister of State for Law and Health Mr Edwin Tong on 16 July 2018.

Geospatial information ("locational" information where data is pinned onto a map) provides many of the solutions which we need today. In supporting numerous applications across different sectors and allowing for real-time location-based services, it impacts policy analysis, operations and service delivery.

An initiative under the Singapore Geospatial Master Plan, GeoWorks, set up by the Singapore Land Authority (SLA), aims to connect businesses, entrepreneurs and innovators to drive geospatial solutions for the promotion of business growth and opportunities. GeoWorks currently hosts 22 GeoTech companies including ABJD, AirMap, NavInfo Data Tech and LDR Technology, with another 17 GeoPartners having also come onboard to support GeoWorks, including Amazon Web Services, Autodesk and Esri.



► Signing of Memorandum of Understanding between GeoWorks and GeoPartner Starhub as witnessed by SLA Chairman Lim Sim Seng and Chief of Starhub Enterprise Business Group Dr Chong Yoke Sin

GeoWorks will galvanise the geospatial industry by reaching out to geospatial businesses, entrepreneurs and users, supporting them with resources such as geospatial and government data, expertise and access to networks and opportunities.

Mr Deric Tay, Regional Sales Manager of Trimble Navigation Singapore, who was present at the launch says, "As a supplier of Geospatial equipment, we hope to be able to not just showcase our products and capabilities but also our latest technology to government agencies and statutory boards. Many startups which GeoWorks work with are also in attendance today and there are possibilities in which we can collaborate."



► One of the many GeoTechs present at the launch of GeoWorks to showcase their products and capabilities

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The Government will be constructing the Jurong Region Line (JRL) to enhance connectivity in the western part of Singapore. To facilitate the construction of the JRL and associated road works, the Singapore Land Authority (SLA) has gazetted the acquisition of 19 part-lots of land and 4 pockets of air space. These mainly consist of ancillary features such as green verges, boundary walls and fencing, in addition to Block 303 Choa Chu Kang Ave 4, a HDB multi-storey car park with commercial units at the first storey. SLA will work closely with the affected landowners to assist them through the acquisition process.

JURONG REGION LINE *Enhancing Connectivity in the West*

24 Stations • 24km • 2026/27/28

Choa Chu Kang

Choa Chu Kang West

Tengah

Hong Kah

Tengah Plantation

Tengah Park

Bukit Batok West

Toh Guan

Jurong East

Jurong Town Hall

Pandan Reservoir

Jurong Hill

Jurong Pier

Tukang

Enterprise

Boon Lay

Bahar Junction

Gek Poh

Jurong West

Corporation

Tawas

Nanyang Crescent

Nanyang Gateway

Peng Kang Hill

Nanyang Technological University

Ayer Rajah Expressway

Pan-Island Expressway

Kong Expressway

Jurong Expressway

Ayer Rajah Expressway

Boon Lay

Names reflected are working names

► The JRL is an elevated MRT line which is 24-kilometre long with 24 stations

The JRL will open in three stages, starting from 2026:

- a. Phase 1 (2026): JRL (West) comprises ten stations linking Choa Chu Kang to Boon Lay and Tawas;
- b. Phase 2 (2027): JRL (East) comprises seven stations providing connection between Tengah and Pandan Reservoir; and
- c. Phase 3 (2028): Extensions into NTU in the west and Jurong Pier in the south, completing the JRL (West) route.

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WORLD CITIES SUMMIT

Jointly organised by the Centre for Liveable Cities (CLC) and Urban Redevelopment Authority (URA) from 8 to 12 July 2018, the biennial World Cities Summit serves as a platform for government leaders and industry experts to address challenges, share integrated urban solutions and forge new partnerships.

SLA showcased our innovative contributions on optimising land resources as part of the Singapore Government Pavilion. These include OneMap, the Singapore Advanced Map and the Digital Underground project.



► Senior Deputy Director, Land Survey Division, Mr Victor Khoo showcasing our developments and innovations to visitors to the Singapore Government Pavilion

Built in-house using open source technology, *OneMap* makes available detailed, timely and updated information to the private, public and people sectors. The development phase was not easy. Justin Chua, from the Geospatial and Data Division, shares, “Each time before development of a certain phase, we will have to first identify the common issues, speak to stakeholders and conduct surveys to find out what the market needs before we can even begin developing the project.”

Also in the pipeline is Digital Underground, a research-to-application initiative that aims to establish a roadmap, best practices and technologies for mapping the underground utility networks. One of the case studies involves using the Ground Penetration Radar (GPR) technology to accurately survey buried utilities, with the idea of creating a more reliable utility map and subsequently helping us to reduce danger during excavation and prevent unnecessary delays. Dr Victor Khoo, Land Survey Division, says of the project, “With all these new insights, we will be able to deduce the constraints, costs or cost-benefits and make informed strategic decisions on land development in Singapore.”

The exhibition also displayed the capabilities of the Singapore Advanced Map (SAM), an integrated 2D/3D map system developed in-house by the Land Survey Division which provides comprehensive access to 3D information in supporting SLA’s role of land administration and land management. By combining 2D and 3D visualization, SAM showcases an integrated environment both above ground and underground, supporting different levels of details seamlessly and empowering decision-makers from various departments with enhanced spatial analytics capabilities that allows them to derive actionable insights from the dataset.



► A visitor testing out the prototype of “Digital Underground”, an initiative programme which aims to establish a roadmap, best practices and technologies for mapping underground utility networks

Innovation however, extends beyond technology and includes great ideas and creativity. SLA’s Leasing Division showcased creative ways to put our State properties to use, to ensure Singaporeans can benefit from the rustic and historical charm of these hidden gems. For example, SLA, together with the Singapore Tourism Board (STB) awarded two blocks at Tanglin Village to COMO Lifestyle Pte Ltd, giving the area an edgy and artistic F&B concept that would further promote Tanglin Village as a unique lifestyle enclave.

Ms Serene Tey, from the Business Development Department, says, “As the proposals are assessed on a price and quality evaluation criteria, it helps us to meet the needs and demands of the market better. This also gives an opportunity to smaller firms who may not be able to match the resources of their competitors but have great ideas that are highly relevant to what we envision and hope to achieve with the locations.”

The World Cities Summit provided the platform for SLA to share with both regional and international participants our land management efforts. With several other innovations currently under development, do keep a lookout for our next showcase in 2020. Till then, watch this space!



► Ms Serene Tey, from the Business Development Department, works with the different government agencies to put State properties to more creative uses

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► In the heat of the battle as participants pitched their concepts to the judges in the Singapore chapter of the ActinSpace® 2018

GEOWORKS HOSTS GLOBAL SPACE HACKATHON (SINGAPORE)

Satellite-refuelling robotic arms, personal modular satellites, “mirrors” in space to reflect sunlight to solar arrays to allow them to work at night – these were just some of many innovative ideas presented at the Singapore chapter of the ActinSpace® 2018, a hackathon where participants dared to dream as they took on the final frontier: space!

Organised by the Singapore Space and Technology Association (SSTA), the French Space Agency (CNES), European Space Agency (ESA), and the European GNSS Agency, ActinSpace® is an international hackathon contest spanning over 70 cities and 5 continents, where participants worked on real-life challenges in the space industry, designing innovative services and products using space technologies and data.

Hosted at GeoWorks, Southeast Asia’s first industry centre to promote geospatial innovation and competencies, the Singapore chapter of the global hackathon on 25 and 26 May saw close to 80 participants competing in challenges, brainstorming and coming up with solutions over the course of 24 hours. The pitching session took place the next day, with each group taking turns to pitch their ideas to a judging panel of industry professionals, followed by lively Q&A sessions.



► Local Fintech entrepreneur, Ms Yvonne Zhang was amongst the judging panel which also consisted of NRF’s Prof Liu Pao Chuen, and EDB’s Mr Beh Kian Teik

After intense competition, “Insert Space” emerged as the winning team. The team had pitched their idea for the cheaper production of micro-thrusters for CubeSats (miniaturised satellites) as the alternative sustainable solution to the current more expensive process.

Their presentation impressed the judges, which consisted of Prof Liu Pao Chuen, Advisor at the National Research Foundation (NRF), Prime Minister’s Office, Mr Beh Kian Teik, Assistant Managing Director, Economic Development Board (EDB) and Ms Yvonne Zhang, Fintech entrepreneur and CEO of local company Aquifer Institute and earned them the honour to represent Singapore to present their ideas to an international expert jury at the Toulouse Space Show in France.



► “Insert Space” emerged as the winner and will now represent Singapore in front of an international expert jury at the Toulouse Space Show in France

While elated with the results, the team is taking nothing for granted. 21-year-old Wilbert Tan, a member of “Insert Space” and an Electrical Engineering student at National University of Singapore shared, “We’ll celebrate today but it’s just the beginning. We will have to push ourselves. Every time we’re not working, someone else is.”

Ms Zhang shared her enthusiasm for the SSTA’s initiative, “It is unique because they bring together the industry, the public sector as well as the educational entities together so that real, commercial data and commercial concepts are being reinvented and reinterpreted by the next generation. That’s the best way of making change happen.”



► The hackathon contest was held at SLA’s very own GeoWorks, Southeast Asia’s first industry centre to promote geospatial innovation and competencies

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► *SLA's Vincent Aw did us proud by winning not one but two awards at the Public Sector Transformation Awards*

PUBLIC SECTOR TRANSFORMATION AWARDS

The Singapore Land Authority (SLA) showcased our efforts to enhance productivity in land management with a demonstration of two mobile applications, *SmartLAMD* and *Contractor App* at the Public Sector Transformation Awards and Convention, held on 4 and 5 July.

The convention featured transformation efforts from over 30 ministries and statutory boards, organised into three broad themes: 'Think Big', 'Inspire and Learn' and 'Deliver as One'.

By integrating seamless work processes and the upcoming introduction of data analytics, intelligence and gamification, *SmartLAMD* enables officers to manage their workload in a streamlined and targeted manner on the go. The app also provides an improved geospatial viewing capability to facilitate quicker decision making.

Contractor App helps our officers better monitor outcomes by allowing contractors to electronically report the completion of works, instead of submitting hardcopy service reports. This enables officers to pick out discrepancies more efficiently. For accuracy, the app also comes with an GPS tracking ability which records inspection paths undertaken by contractors.

To cap it off, SLA's Vincent Aw, Head, Systems and Support, was awarded the "Public Service Transformation Star Manager" award and the "Distinguished Excel Innovation Champion" award at the Public Sector Transformation Awards Reception. Vincent's strong commitment to public service, professionalism and dedication to think out of the box has motivated him to find unique solutions to improve how State land and properties are being maintained.



► *Vincent demonstrates the use of SLA mobile apps at the Public Sector Transformation Convention*

Vigorously driving innovation, Vincent's energy and enthusiasm has inspired his colleagues to leverage on technology and push boundaries, in line with Singapore's push towards becoming a Smart Nation. Vincent shares: "An important criteria is patience. While innovation is an essential part of working, sometimes we have to understand that what may not be feasible now may be workable in the future. We have to be open to ideas as conventional methods may only take us so far. Be patient with your juniors. Be empathetic, authentic and realistic with them and then, let them fly!"

In addition to the mobile apps, SLA's Land Management team had also kickstarted the remote monitoring of utilities at State properties, supported by the use of drone imagery with machine learning technologies. In the pipeline are plans to implement the use of fully automated drones for the inspection of offshore islands, reducing the time required for physical commute to the various islands.



► *Monitoring offshore islands with drone imagery*

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► *DD/CA Tan Hwee Ching and DD/P&R Stephanie Sng hosted delegates from the State Government of Andhra Pradesh*

INTERNATIONAL EXCHANGE

The Singapore Land Authority (SLA) played host to delegations from India and South Korea in May and June who were keen to learn more about SLA's innovative processes in optimising land resources for the economic and social development of Singapore.

On 24 May 2018, DD/CA Tan Hwee Ching and DD/P&R Stephanie Sng hosted the delegation from the State Government of Andhra Pradesh, India, who was here for a two-week study visit. The delegates and SLA had a lively and dynamic discussion as we shared with them Singapore's land acquisition policy and governance.

The study visit was followed by a visit from a group of Municipal Commissioners from Andhra Pradesh on 11 June 2018, hosted by ACE (Land Ops), during which the delegates posed many questions to us during the Q&A session and shared the challenges they faced back in India.



► *Delegates from Korea Land and Housing Corporation & LG CNS understanding more about the role OneMap played in Virtual Singapore while also sharing their development of Sejong Smart City in Korea with SLA*

SLA's geospatial expertise was an area of interest for Korean delegates. On 31 May 2018, delegates from Korea Land and Housing Corporation (KLHC) and LG CNS, a subsidiary of LG Corporation, paid a visit to GeoWorks, SLA's industry centre for the promotion of geospatial innovation and competencies. Hosted by SDD/GSDD Lewis Wu, the delegates learned about the role OneMap played in the development of Virtual Singapore, a digital twin of the nation. In turn, the delegates shared their development of Sejong Smart City in Korea and other Smart Cities managed by KLHC.

GeoWorks also played host to the South Korean government agency, Spatial Information Industry Promotion Institute (SPACEN), established under South Korea's Ministry of Land, Infrastructure and Transport on 6 June 2018. D/GSDD Ng Siau Yong engaged the delegates who were keen to learn more about SLA's 3D Map, OneMap and Virtual Singapore.



► *D/GSDD Ng Siau Yong hosted a lively sharing session with the delegates from South Korea's SPACEN*

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