Geo-enabling the Global Village
No one should be left behind

Colin Low
Chief Executive
Singapore Land Authority

12 October 2022
• 730 sq km
• Population of 5.5m
• “Limited Land – Unlimited Space”
Geo-powered transformation
Geospatial - Public Sector
Underpinned by technological advancements
Capturing Data in High Resolution

Point Cloud

360° panoramic image

3 Million
Panoramic Images

600 Billion
Point Cloud

5,500 km
Public Street

Vertical and Oblique Images

Color-Infrared Image

3D DATA

Large format, high-resolution camera sensor

Long range, dual channel laser scanner

6
Evolving Cadastre Needs

Complexities of structures and related rights - need planning in third dimension
Transforming City Planning

Wind Flow and Micro Climate Analysis

Shadow Analysis
Planning of Public Spaces - Trees Mapping
Data Driven Decision Making
Planning for Shifting Demographics

Barrier-Free Access

Autonomous Vehicles
Augmented Reality (AR) Visualisation of Subsurface Utilities
Automating with Artificial Intelligence

**Identification** of road and roadside features

**Extracting** their exact location
Geospatial - Social Services
Open GeoData for COVID & Social Services

Navigate to Free ART Kits

OneService App
MyResponder App Powered by OneMap
Connecting Communities with OneMap

Bishan MRT
Central Singapore Market
29 Aug 2022
Details here
Connecting healthy community with fresh organic produce

Whampoa Community Club
GIVE-&-TAKE Market
30 Oct 2022
Register to give or volunteer
Connecting Partners & Volunteers to beneficiaries

Location of CDC Merchants
Location of CDC Events
Mapping Barrier Free Access (BFA) for Inclusiveness

Routing excludes mobility “obstacles” for barrier free transit
Uniqlo has been working towards the goal of employing at least one person with disability per store since 2001. Over 90% of its stores in Japan employ at least one person with disability, and Uniqlo has expanded this initiative to overseas outlets.

Uniqlo has also created a buddy system that pairs staff with disabilities with store managers to help guide and mentor them in their training.

All employees — PWDs or not — have the same set of benefits, compensation, and a fair chance for career progression.
Geospatial - Enabler for Sustainability
Development of 3D Solar Potential Map

Images Courtesy of Solar Energy Research Institute of Singapore (SERIS) and School of Design & Environment (SDE), National University of Singapore (NUS)
Urban Heat Model

<table>
<thead>
<tr>
<th>TSV range</th>
<th>$T_a$ range (°C)</th>
<th>Perception (reference to ASHRAE 7-point scale)</th>
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<tbody>
<tr>
<td>-3~2</td>
<td>Not applicable</td>
<td>cold to cool</td>
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<tr>
<td>-2~1</td>
<td>22.4~25.4</td>
<td>cool to slightly cool</td>
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<tr>
<td>-1~0</td>
<td>25.4~28.5</td>
<td>slightly cool to neutral</td>
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<tr>
<td>0~1</td>
<td>28.5~31.6</td>
<td>neutral to slightly warm</td>
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<tr>
<td>1~2</td>
<td>31.6~34.7</td>
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<tr>
<td>2~3</td>
<td>34.7~37.7</td>
<td>warm to hot</td>
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TCL_TMax-07112015_1400hrs Value:
- High: 1.00937
- Low: 0.539804
Mitigate Impact of Sea Level Rise
Collaborating on Climate Research

More accurate ways to measure land-height and sea-level changes around Singapore

Effect of the atmosphere on the weather and climate on the island nation.

Leveraging SLA’s aerial LiDAR and multi-spectral aerial photography

Measuring and monitoring of Singapore’s nature-based carbon resources for national mitigation efforts
Geospatial - Private Sector
"With our drivers contributing pictorial data to facilitate OneMap’s accuracy ...we can potentially set a new industry operational standard through improvements in the entire last-mile delivery...”

Mr Lai Chang Wen
Chief Executive Officer of Ninja Van
Promoting Awareness in Geospatial Technologies

Promoting awareness in geospatial technologies and their potential areas of application

Implementation of suitable programmes to help businesses better appreciate how geospatial technologies can improve their current and future operations.
Partnering Real Estate Agencies

### Property Result

<table>
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<tr>
<th>S/N</th>
<th>Type</th>
<th>Model</th>
<th>Lease Commence</th>
<th>Remaining Lease (years)</th>
<th>Level</th>
<th>Area (sqm)</th>
<th>Price</th>
<th>Date</th>
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</table>

* Select the floor level to access 3D view.
Collaborating with Private Sector - A Living Lab
Geospatial - Education Sector
Planning for our future
Seeding Interest from Young

Young Scientist Geospatial Badge

Singapore Geospatial Scholarship

Regional Geospatial Youth Forum

Geomatics School Outreach & Girl Guides Geospatial Badge

ASEAN Geospatial Challenge

MOE-EduGIS
Making Geospatial Fun – Singapore Heritage Trail

Use OneMap to navigate, to deduce clues and to explore Singapore's heritage.
Mainstreaming

Living Lab

Seed Early. Create Stickiness

Solutioning - Public - Private