



# Smart Campus Living Lab for Innovation

HONG KONG'S LARGEST INNOVATION & TECHNOLOGY ECOSYSTEM

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# **Smart Region Living Lab**From Smart City Blueprint to Smart Campus



- Y Vision: Regional Smart City Solution Hub for the Asian Region
- Mission: A miniature smart city for technological solution trial to support the Government Smart City Blueprint



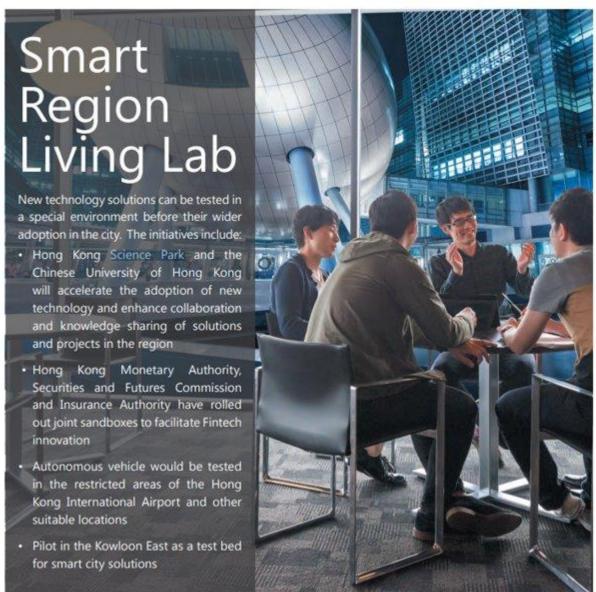
Accelerate Technology Adoption via Trials



**Enhance Collaboration** 



Knowledge Sharing







## Pave the Way in Technology Adoption Journey



#### **Technology Readiness**

Solutions' readiness for adoption

#### Low



Stage: Research/ Prototype/ Data Collection **Key: Tech Ventures** 

#### Medium



Stage: Market ready.

Key: Tech Ventures and System Integrators

### High



Stage: Product/ Solution ready for deployment Key: Tech Ventures, SIs, and corporates









### **Adoption Journey**

Different level of support to uphold trustworthiness

Hybrid testing environment to testify technology's maturity



**Application Trials** in SP

Solution Testing in SP



**Application** Trials out of SP



Through smart campus testing and adoption to generate 'best practice'

Replicate proven solutions into corporate partner properties by leveraging "Best Practice" & "Tech Evaluation"

















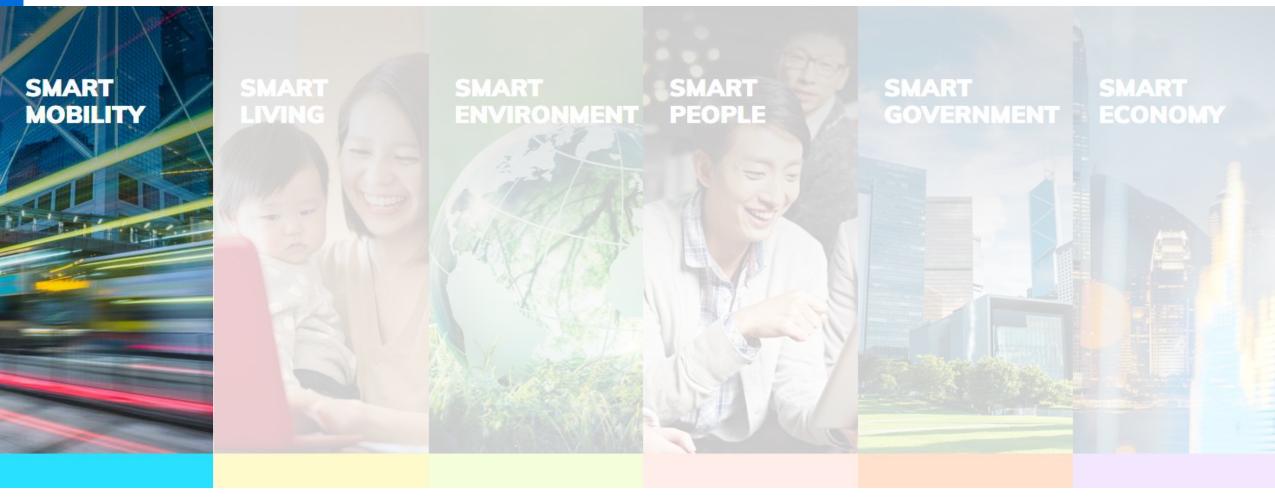






# **Smart Campus: A Miniature Smart City**



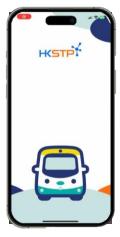




### **Open Roads Autonomous Vehicle Trial Project**













**HK's FIRST Level 4** autonomous driving trial on **open roads** within Science Park as permitted by Transport Department

Circular MaaS (Mobility-as-a-Service) around the Science Park

Facilitating the legislation and amendment of Cap 374 to realize the licensing for autonomous vehicle in Hong Kong

- Test items under TTM (Temporary Traffic Management) and movement permit arrangements
- Cybersecurity reference to TD on overall system, autonomous vehicle and mobile app



Testing under TTM

### **Electric Mobility Devices (EMDs) Pilot Trial**











Dismount





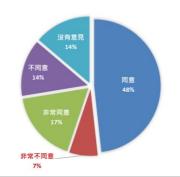




E-scooters Power-assisted Pedal Cycles

- Trial period: May to Nov2022
- Commuting between HK Science Park and MTR University to enable
  - Facilitating the EMDs legislation framework via data collection under real environment (e.g. user behaviors, ride pattern, feedbacks from other stakeholders, etc.)

您認同在試驗中就以下就電動可移動工具在單車徑上使用的描述嗎? A) 工具的速度限制或輔助助力限制(25KM/H)適當



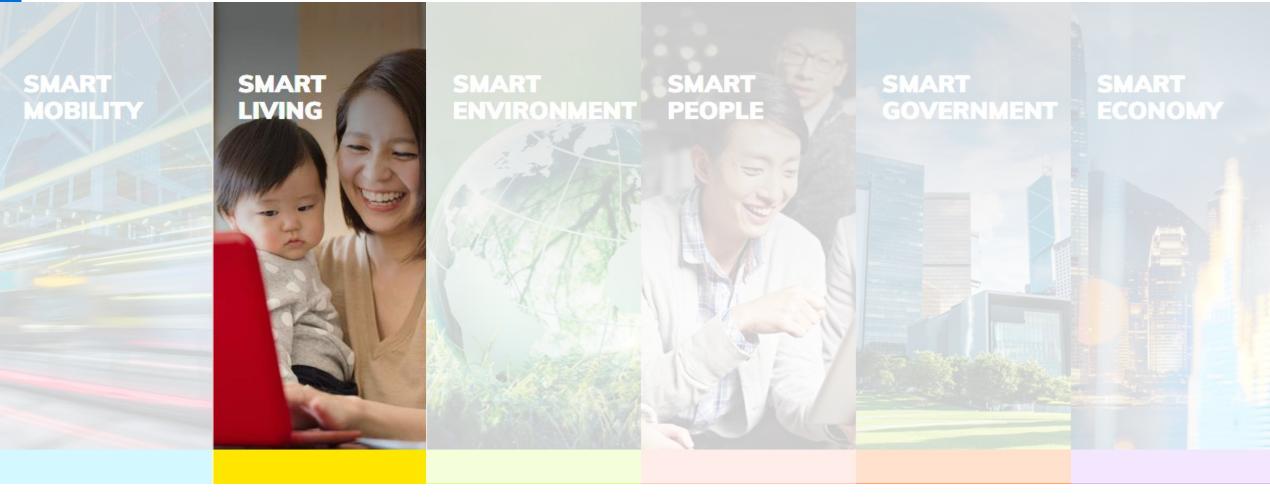






## **Smart Campus: A Miniature Smart City**



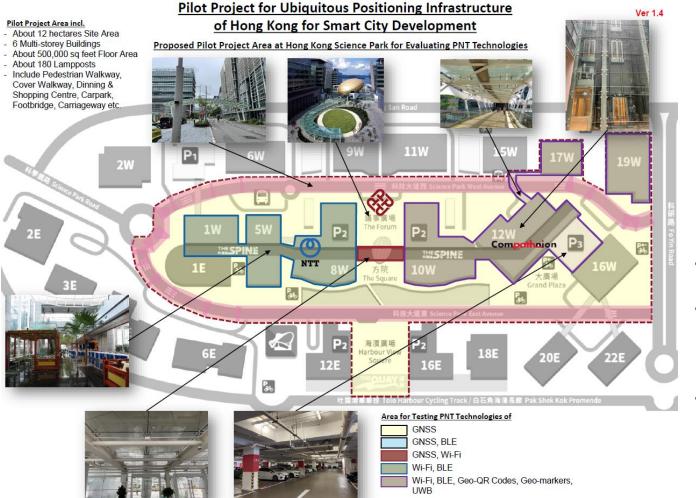




# Ubiquitous Position Infrastructure Pre-deployment Study HKSTP











Geo QR Code

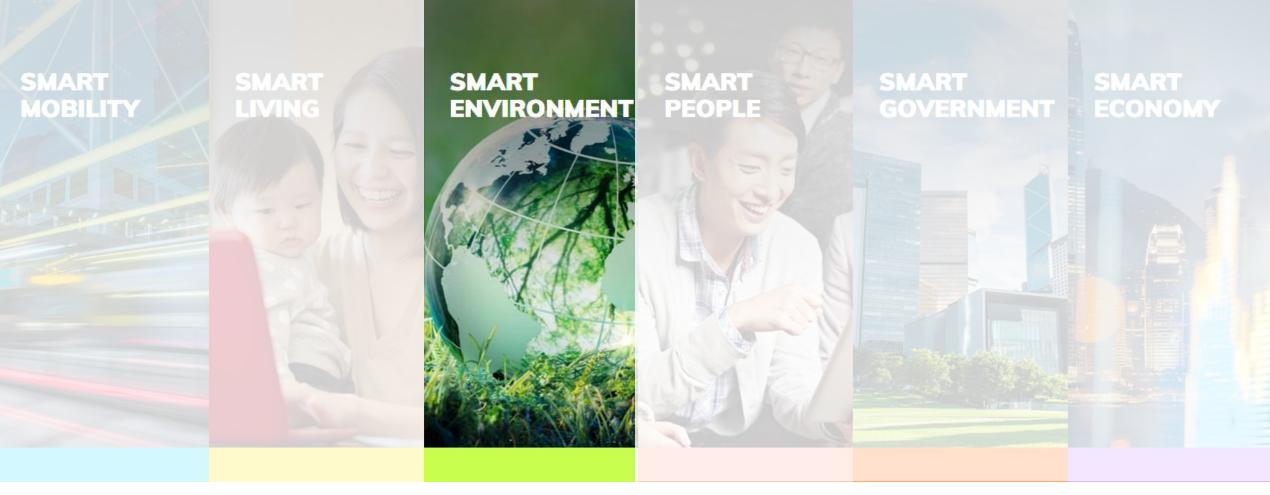
**BLE Beacons** 

- Utilizing Science Park Campus to simulate the scenario of "indoor to outdoor navigation"
- Testing of different positioning technologies (BLE beacons, WiFi fingerprinting, Geo QR code) that can best-fit the application scenario
- Deliverable: indoor maps, SDKs and datasets for positioning and navigations; advisory report on the infrastructure deployment (by the consultant)



## **Smart Campus: A Miniature Smart City**







### **Roadside Wind Turbine Energy Harvesting Trial**







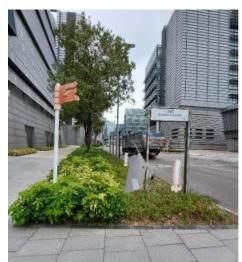


Wire mesh barrier to protect the wind turbine system (max. height not more than 2500 mm above floor level)

- Assessing the energy harvesting effectiveness of roadside wind turbines
- Optimizing the design, installation workflow and energy storage configuration
- Establishing a model for other government department and private corporate to follow for future mass adoption



Front View (Conceptual)



Side View (Conceptual)





#### Estimation: Tolo Highway (5 km long)

- Total 100 turbines installation
- Estimated power generation per hour = **7 kW**

# Physical, Virtual, and Hybrid.





#### Physical Sites for trial & live demo

- Campus grounds & living community
- IoT Installation for data collection



#### **Virtual Lab for Data Insights**

- Trusted sandbox environment
- Cross industry data
- Demo/Taster for industries



#### **Hybrid Testing for validation**

- Campus grounds & living community
- Development Modules
- Extended data (historical and real time)









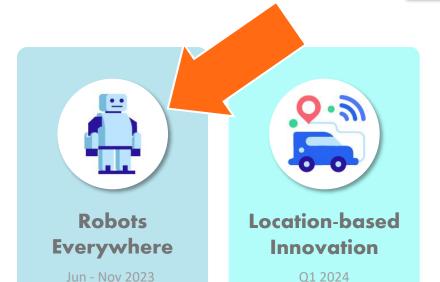


# **LEAD** WITH **ADOPTION**

HKSTP STP Platform

# **Smart Campus Challenge**











Featured news

















Smart Campus Challenge

# Robots Everywhere: Robotics for Efficient FM

Outreach

• 23 Jun 2023

Test & Validation

Oct – Nov 2023

Trial,
Showcase &
Promotion

• 1 Nov 2023

· 24 Nov 2023





# LEAD WITH ADOPTION













5
Application categories



10 Robot companies 20+
Robots
validated



20+

Guests witnessed the validation process



**Cross-Team Collaboration** 

FM + FMO + IT + SS&P + SHE + Partnerships + STP Platform

# **LEAD** WITH **ADOPTION**

HKSTP STP Platform

# **Smart Campus Challenge**

INNOVATE WITH TRUST



**Everywhere** Jun - Nov 2023



01 2024



**Energy Harvesting** 

03 2024



**Know Your** Customer

04 2024

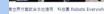
Featured news















### **Location Matters**













>80% of data is related to "Location"

### **Targeted Output**







Drive **Data Traffic** 

**Drive IT Backbone Utilization** 

Turn Ideas into PoCs

Attract teams to join **HKSTP** 





### 4 Streams





\* Marketing

# ASSISTIVE DEVICE & TECHNOLOGY



- Visual impairment devices
- Indoor-outdoor navigation

#### **RETAIL & MARKETING**



\* Marketing

Better serve to people in needs

\* Operations, Project



\* Operations, Project

### **Collaborative Partners**





# CO-ORGANISER & SPONSOR





# STRATEGIC PARTNERS, SPONSORS, and SUPPORTING ORGANISATIONS















# **Challenge Timeline and Milestones**





- Challenge Preparation
- Finalise Game Rules
- Partner recruitment
- Website launch
- Workshop (Partners' sharing)
- Site visits
- Training (IT Backbone)
- SDK on LBS (Mapxus)
- 3D Map Visualization (ESRI)
- Mentorship (Internal teams + Partners)

 Development Bureau

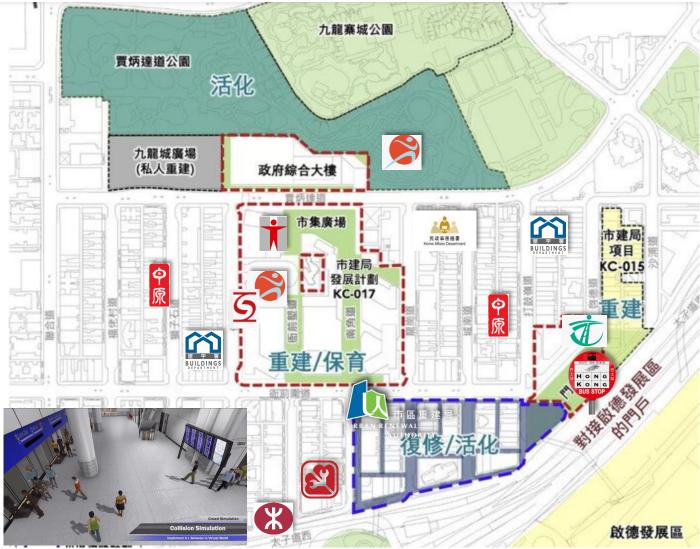
### Joint-Force for Innovation

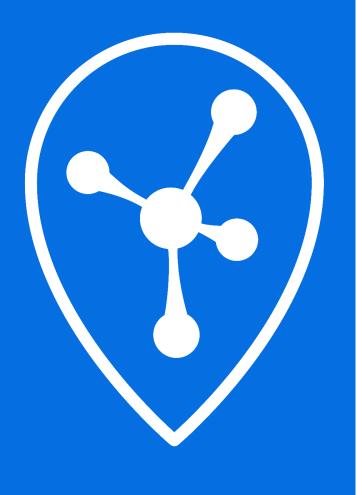


# **Cross-Department & Cross Disciplinary Innovation**

- Lining-up various data providers (Government Departments, transportation, utilities,
- Brining in innovative idea via the digital resources by STP Platform
- Co-creating and realizing technology adoption









www.hkstp.org









