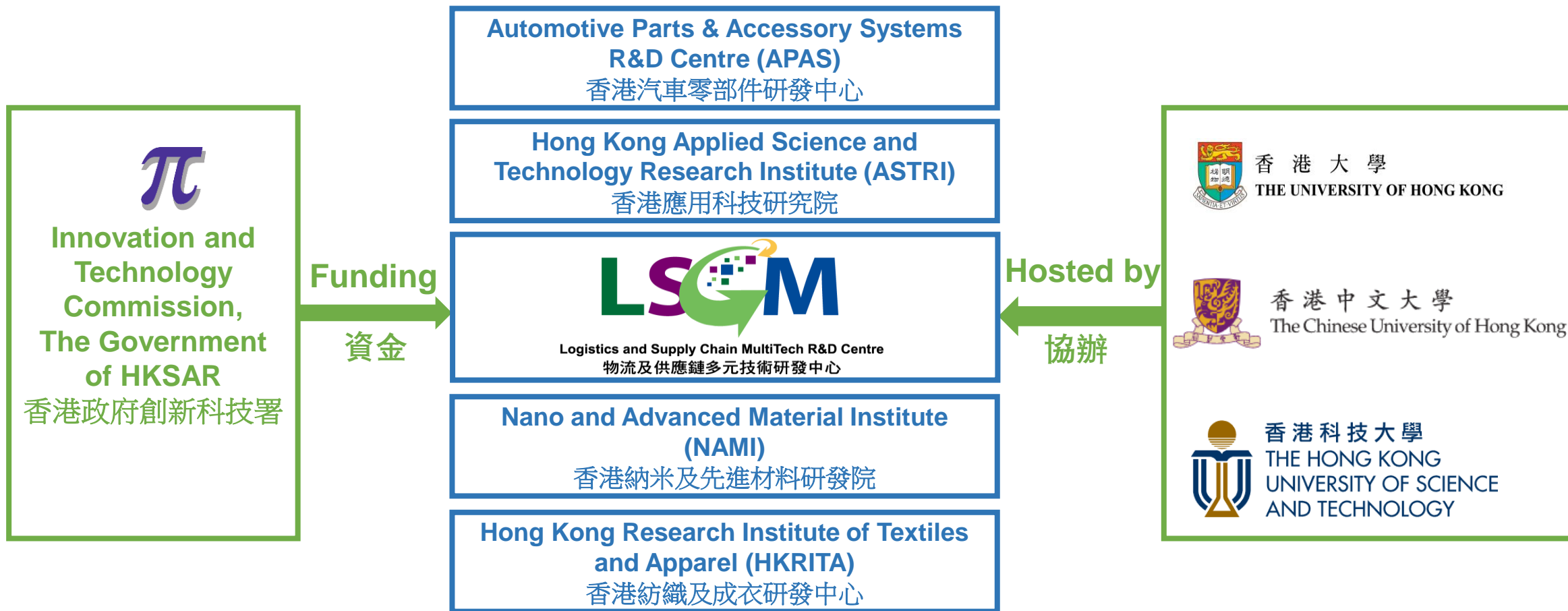


The logo for the Logistics Summit 2021, featuring the letters 'LSM' in a stylized font. The 'L' is green, the 'S' is purple, and the 'M' is blue.

LOGISTICS SUMMIT  
物流高峰會 2021

**Innovate and Revitalise**  
to win over the COVID-19

創科研戰疫 攜手創高峰



**1500+**  
Industry Members

**60+**  
Industry Associations

**450+**  
University R&D Personnel

**250+**  
Licensing, Contract and Sponsoring Partners

## Logistics and Supply Chain MultiTech R&D Centre

- Develop Indigenous, practical, industry-relevant **applied technologies** (IPs, systems, products) for Hong Kong MSMEs.
- Develop **“hubs” and “platforms”** to provide technologies of other sources, such as start-ups, university research groups and R&D institutes as support to industries (*Non-profit making and impartial*)
- Develop **“domain knowledge”** of specific industries to solve their special problems (logistics, transportation, public services, community services).
- Develop **“Proof of Concept”** solutions for Public Sector and demonstrate research results for public awareness.



We are fully committed to be one of the key drivers of **Modernizing and Reindustrializing** Hong Kong enterprises, **Building of Hong Kong Smart City** and Promoting **GBA cooperation** and collaboration!

# Technologies that will win in the future

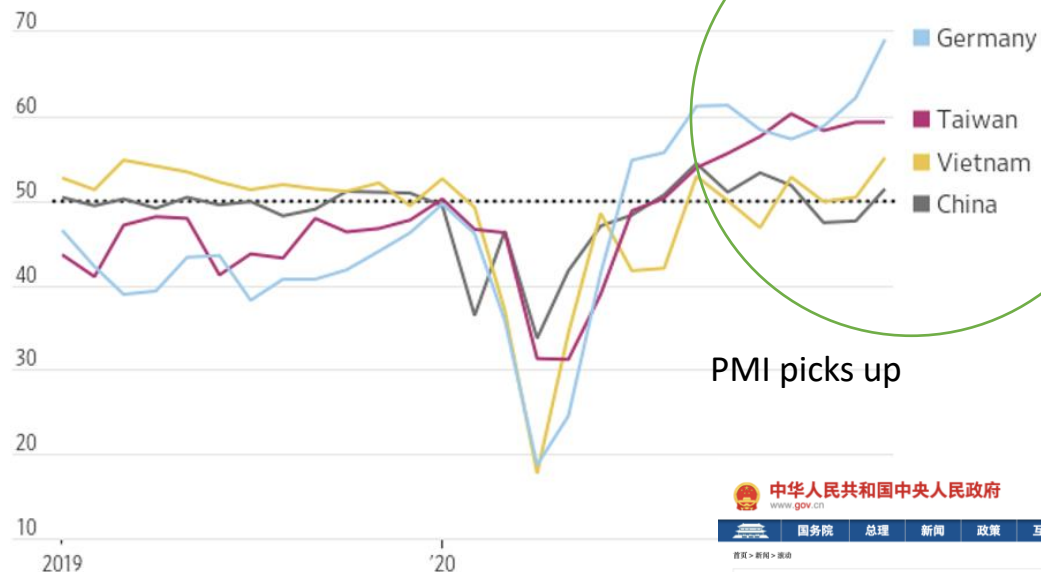
# Macro- environment

Economies in many regions picking up, but uncertainty remains!

## Export Expansion

Manufacturers in Asia and Europe report a strong rise in new export orders that will further strain global supply chains.

### Purchasing managers index for new export orders



PMI picks up

中华人民共和国中央人民政府 www.gov.cn

前7个月我国进出口同比增长24.5%——外贸高质量发展迈出坚实步伐

2021-08-14 09:32 来源：人民日报海外版

【字体：大 中 小】 打印 分享

## OECD Economic Outlook projections

### Real GDP growth

% change, year-on-year, colours indicate the direction of revisions since the December 2020 Economic Outlook

↓ downward revision, by 0.3pp or more — no change or smaller than 0.3pp ↑ upward revision, by 0.3pp or more

	2020	2021	2022		2020	2021	2022
World	-3.5 ↑	5.8 ↑	4.4 ↑	G20	-3.1 ↑	6.3 ↑	4.7 ↑
Australia	-2.5 ↑	5.1 ↑	3.4 ↑	Argentina	-9.9 ↑	6.1 ↑	1.8 ↓
Canada	-5.4 —	6.1 ↑	3.8 ↑	Brazil	-4.1 ↑	3.7 ↑	2.5 ↑
Euro area	-6.7 ↑	4.3 ↑	4.4 ↑	China	2.3 ↑	8.5 ↑	5.8 ↑
Germany	-5.1 ↑	3.3 ↑	4.4 ↑	India*	-7.7 ↑	9.9 ↑	8.2 ↑
France	-8.2 ↑	5.8 —	4.0 ↑	Indonesia	-2.1 ↑	4.7 ↑	5.1 —
Italy	-8.9 —	4.5 —	4.4 ↑	Mexico	-8.2 ↑	5.0 ↑	3.2 —
Spain	-10.8 ↑	5.9 ↑	6.3 ↑	Russia	-2.6 ↑	3.5 ↑	2.8 ↑
Japan	-4.7 —	2.6 ↑	2.0 ↑	Saudi Arabia	-4.1 ↑	2.8 ↓	3.8 —
Kingdom States	-9.8 ↑	7.2 ↑	5.5 ↑	South Africa	-7.0 ↑	3.8 ↑	2.5 —
	-3.5 —	6.9 ↑	3.6 —	Turkey	1.8 ↑	5.7 ↑	3.4 —

: OECD Economic Outlook, May 2021

# Macro- environment

## Globalization:

- Trading becomes more regional and growing

- China's top five trading partners are:

- ASEAN (4.74 Trillion yuan \*; +7%)
- EU (4.5 Trillion yuan\*; +5.3%)
- US (4.06 Trillion yuan\*; +8.8%)
- Japan (2.2 Trillion yuan\*; +1.2%)
- South Korea (1.97 Trillion yuan\*; +0.7%)

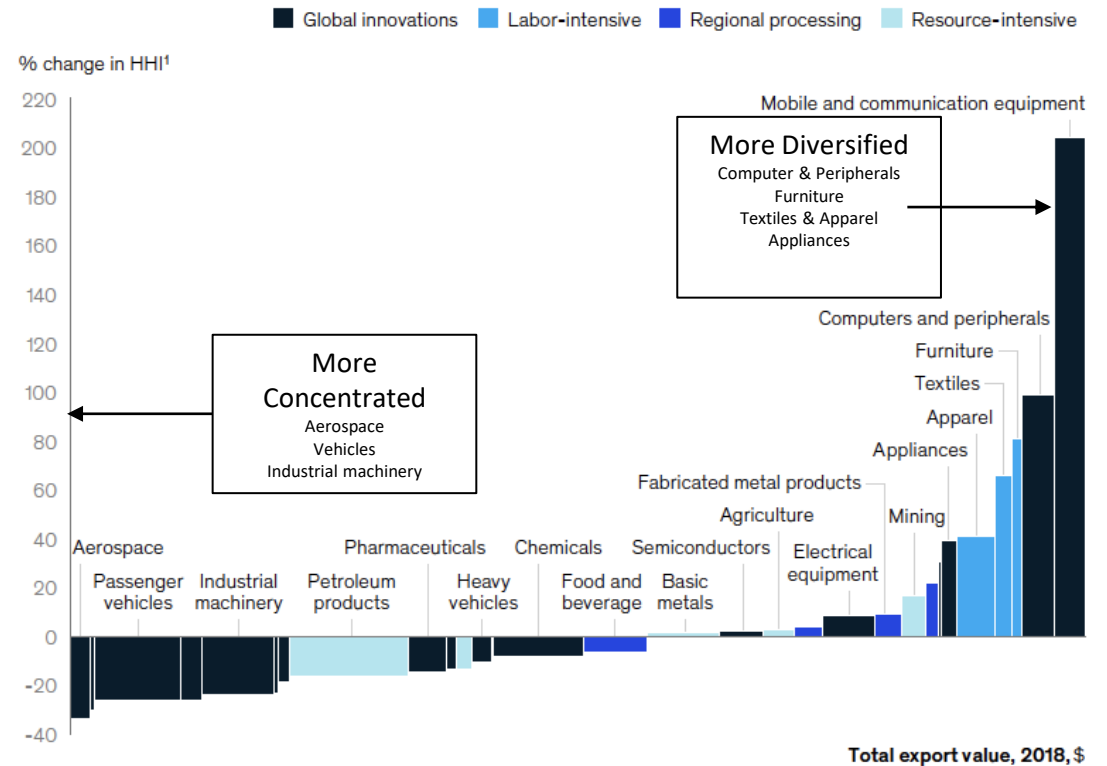
China's import and export to countries along the Belt and Road reached 9.37 Trillion yuan, up 1%.

Note: \* import & export value  
From: Global Times

Exhibit E4

Globalization has led to diversification of production across countries in some sectors, but others have grown more concentrated.

Change in geographic concentration by sector, 2000–18, measured by change in Herfindahl-Hirschman Index of exports (HHI)<sup>1</sup>



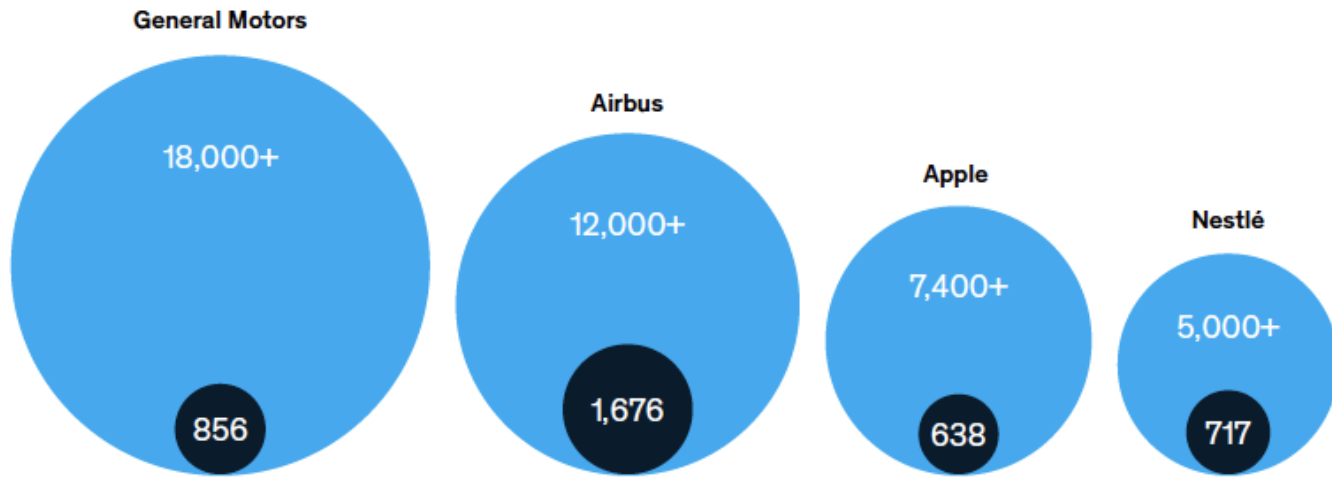
1. A measure of concentration that is the sum of the square of each country's share of exports.  
Note: Data includes 5,444 unique final and intermediate products from 2018 trade data. The weighted average is weighted by the share of trade for each product within each value chain. All other measurements of HHI are calculated using the raw, unweighted score.  
Source: UN Comtrade; McKinsey Global Institute analysis

Governments everywhere are **trying to build resilience** and self-reliance of key strategic products, such as ICs, aerospace products, etc. On the other hand, **consumer product supplies are diversifying**.

# Supply Chain Complexity

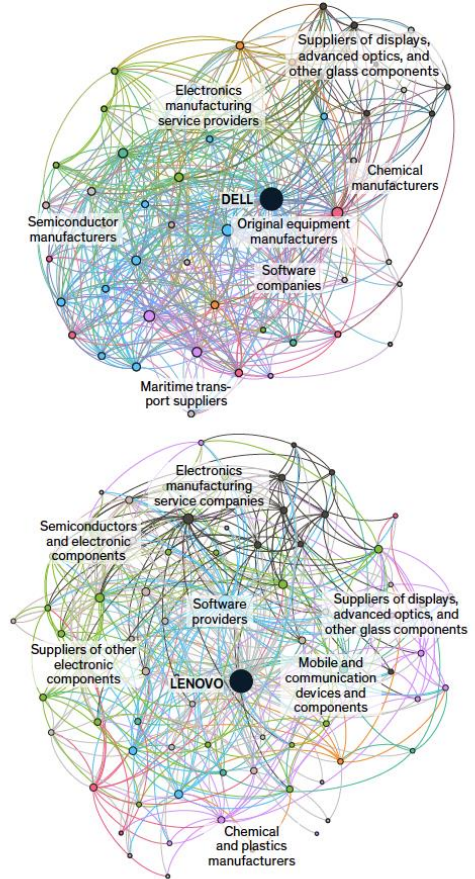
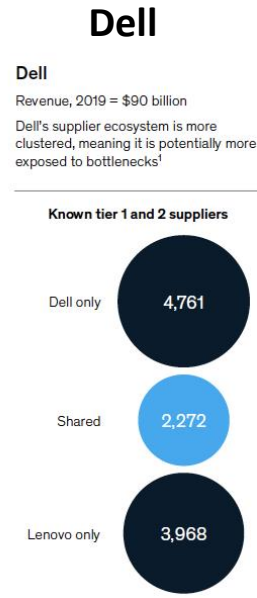
Beyond the first tier, companies rely on a network of thousands of suppliers

● Publicly disclosed tier-1 suppliers ● Tier-2 suppliers and below



1. Analysis based on 668 out of 1,371 companies in MSCI index; excludes 57 companies that did not have public information available on tier-1 suppliers and 645 companies that provide services. This constitutes an incomplete estimate of customer-supplier relationships based on public disclosures. Suppliers include providers of intermediate inputs, services, utilities, software, etc.  
 2. Median of simple average of tier-1 suppliers for each manufacturing industry considered.  
 Source: Bloomberg Supply Chain database; McKinsey Global Institute analysis

Companies rely on complex, multitiered, and interconnected networks  
 Example: Semiconductors, computers and electronics, and communication equipment



**Not Easy to Alter Supply Chain Quickly!**

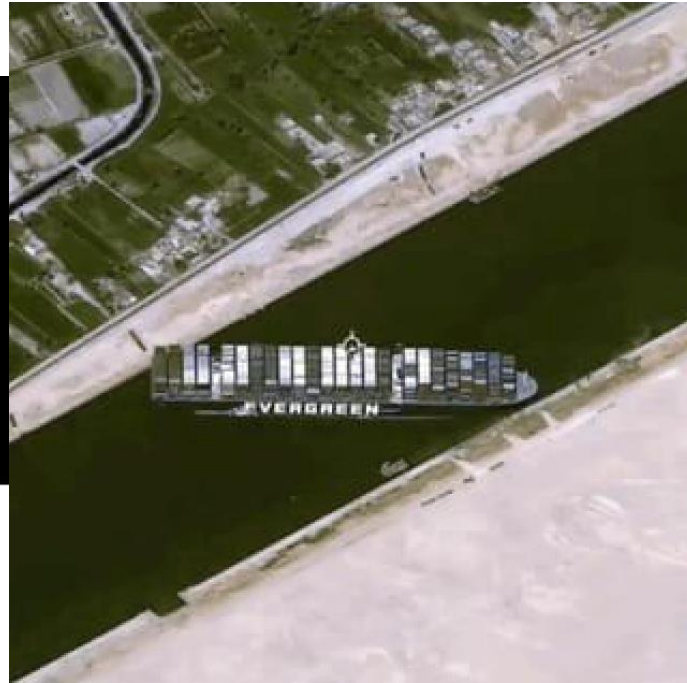
1. Clustering is based on the clustering coefficient, which is calculated with network analysis of all supplier-customer relationships. The clustering coefficient measures the degree to which nodes cluster together and form interconnected subgroups.  
 2. The level of network depth is measured through the network diameter, using network analysis of all supplier-customer relationships. The network diameter is a measurement of network size that accounts for the overall structure by measuring the longest shortest path in the network.  
 Source: Bloomberg Supply Chain database; McKinsey Global Institute analysis

# Supply Chain Disruption: The Challenge

LA Ports' jam in early 2021



Ever Given blocked Suez Canal



## Chip shortage: Toyota to cut global production by 40%

19 August | Comments



AUTOMOBILES

## Mazda halts two Japan factories due to torrential rain

Storm risks schedule for retrofitting line to handle EV production



**Added: Pandemic causes Massive Disruptions around the World!**



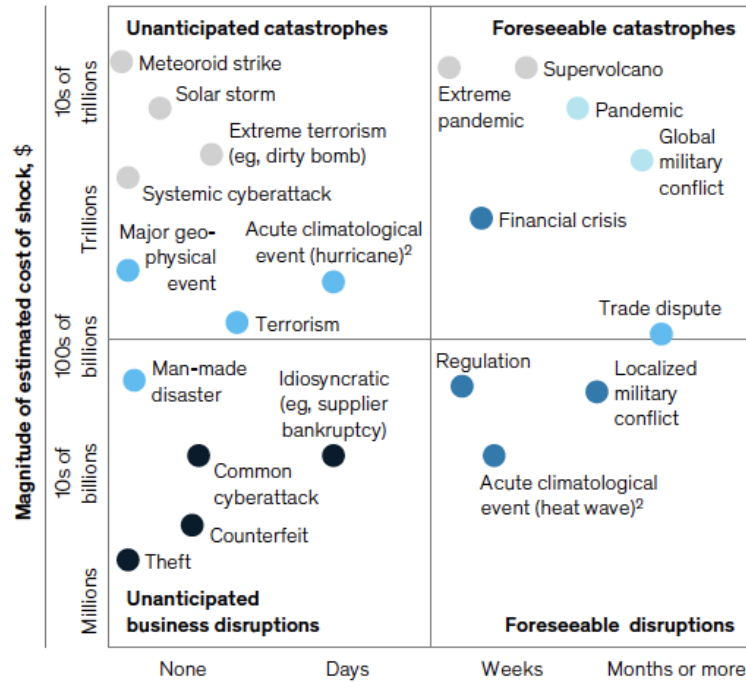
# Supply Chain Disruption: The Challenge

Exhibit E1

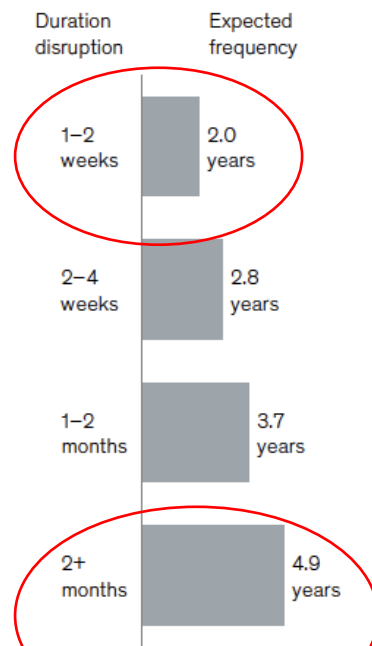
Disruptions vary based on their severity, frequency, and lead time—and they occur with regularity.

**Magnitude and ability to anticipate**

Historical frequency: More frequent (dark blue) to Less frequent (light blue) to Has not (yet) occurred at scale<sup>1</sup> (grey)



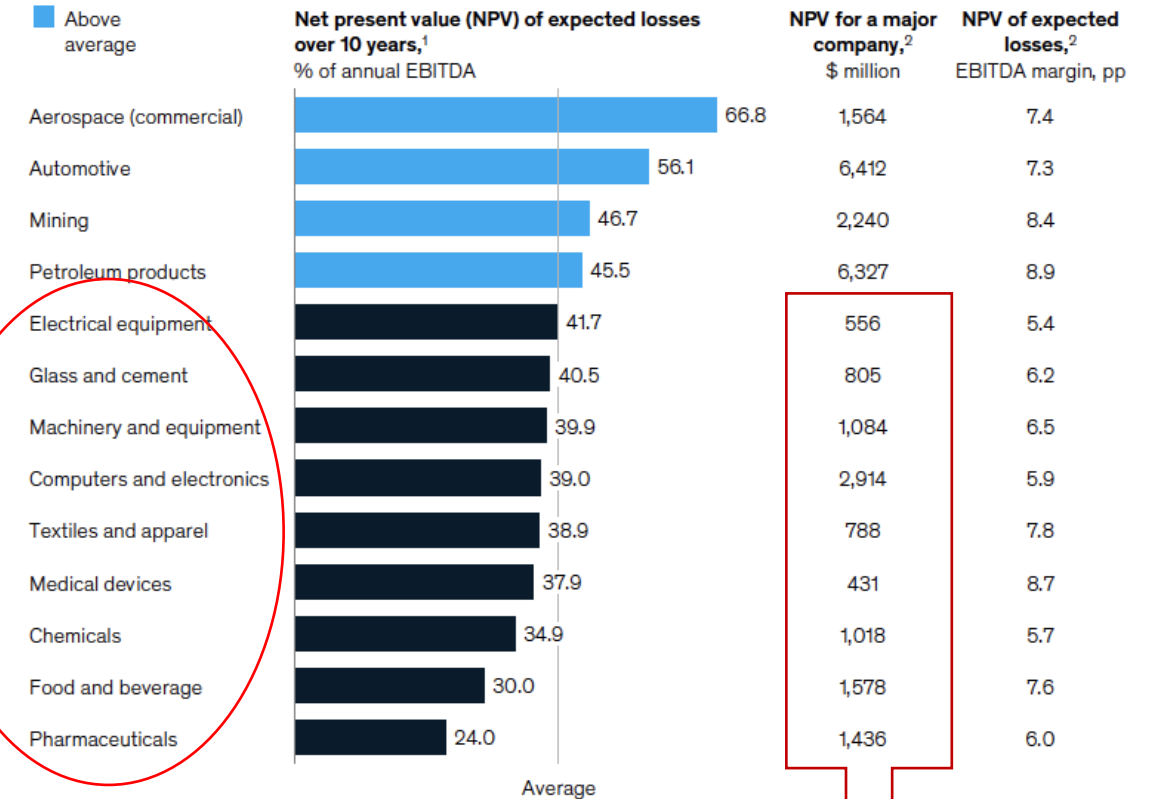
**Expected frequency of a disruption, by duration, years**  
Based on expert interviews, n = 35



**2 weeks disruption every 2 years, 2 months every 5 years!**

Exhibit E5

Expected losses from supply chain disruptions equal 42 percent of one year's EBITDA on average over the course of a decade.



1. Based on estimated probability of a severe disruption twice per decade (constant across industries) and proportion of revenue at risk due to a shock (varies across industries). Amount is expressed as a share of one year's revenue (ie, it is not recurring over modeled 10-year period). Calculated by aggregating cash value of expected shocks over a 10-year period based on averages of production-only and production and distribution disruption scenarios multiplied by probability of event occurring for a given year. Expected losses based on each industry's weighted average cost of capital.  
 2. Based on weighted average revenue of top 25 companies by market cap in each industry.  
 Source: S&P Capital IQ; McKinsey Global Institute analysis

**42% of EBITDA!**

**\$10.61 Bil**

# Opportunities and Challenges for Hong Kong

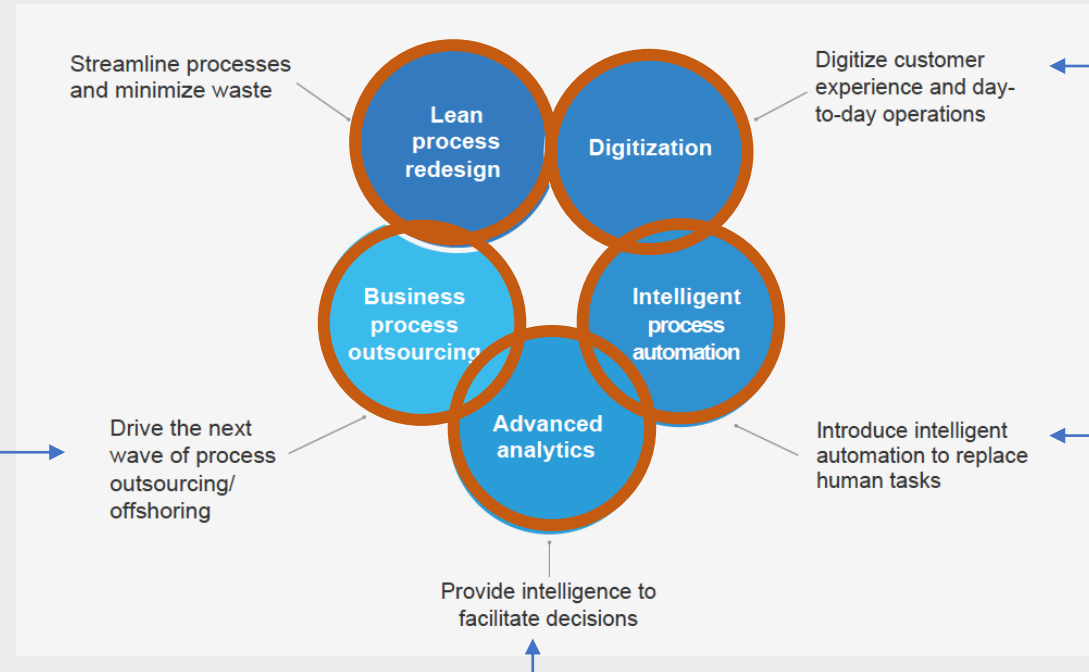
Hong Kong needs to offer solutions to help supply chain management by

1. Digitization for speed and flexibility
2. Enhanced Connectivity and Channels (particular with Mainland)
3. Innovations in business models such as eCommerce & eLogistics
4. Technologies in Logistics, Reindustrialization

***It is Time to Invest in Technologies, or to be left behind!***

# Logistics Winners: Digitized Company

Five approaches and capabilities to drive the next-generation operating model.



Source: MGI

- RFID Tracking System
- Smart Cargo Locating
- VR Technology for application and training
- IoT System integration

- Delivery robot
- Smart warehouse lifter
- Smart follow me stacker
- Warehouse AGV and planning system
- Smart future warehouse

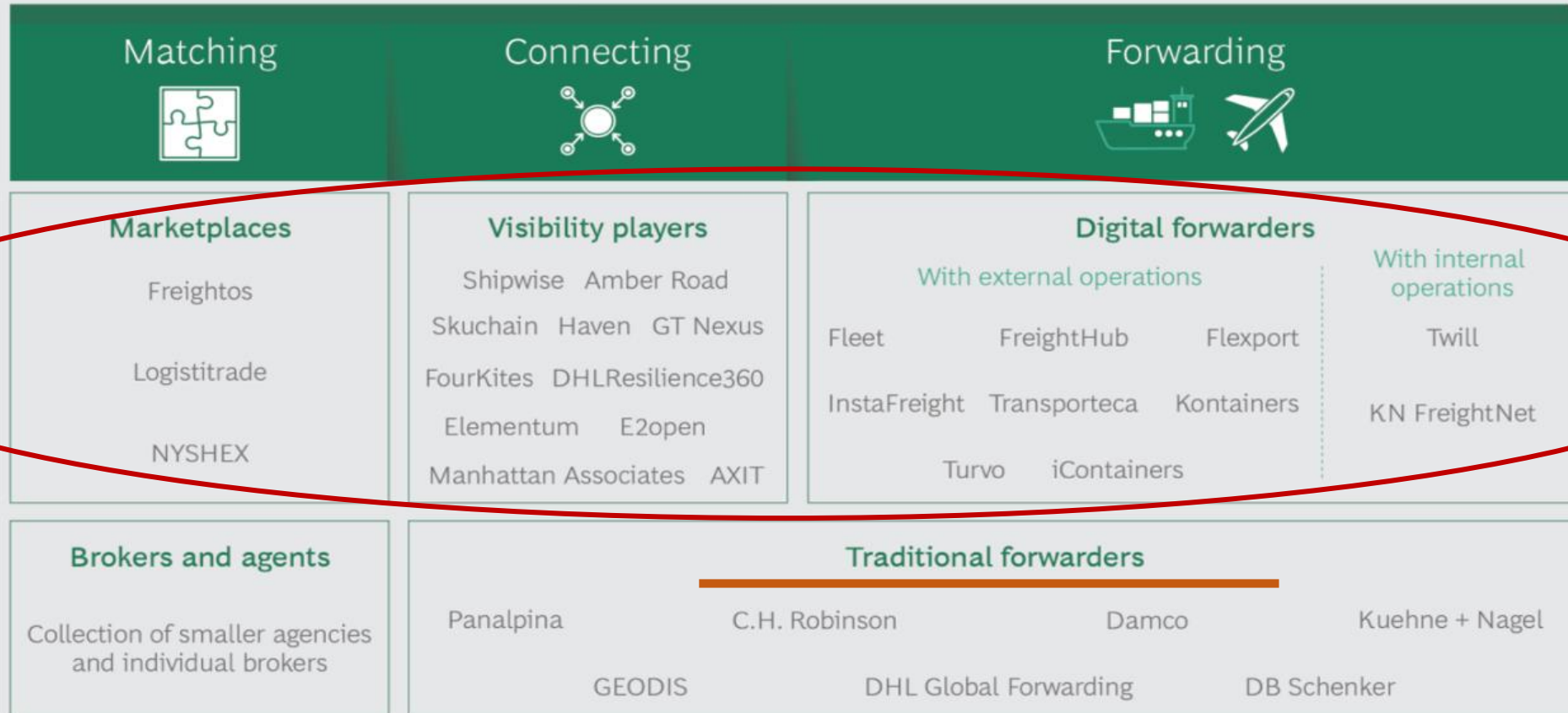
- eFTP (domain translation)
- eBRAM blockchain
- e-cheque
- Insurance (block)chain
- RFID-enabling food safety public information system

- Big Data for Dynamic Resources Management
- Advance truck arrival system
- Block chain track and trace
- Satellite Remote Sensing

***LSCM provides technologies in every step!***

# Logistics Winners: Digitized Company

EXHIBIT 3 | New Business Models Disrupt Traditional Freight Forwarding



Source: BCG analysis.

Note: Company examples provided for the purpose of illustration.

# Logistics Winners: Digitized Company

EXHIBIT 2 | Digitization Can Significantly Improve Customer Satisfaction and Profitability



DIGITAL IN  
FREIGHT  
FORWARDING



## Improved customer experience

- Develop pricing engine > Instant price quotation
- Build digital customer platform > Seamless end-to-end documentation handling
- Digitize operational shipment data > Easy shipment tracking
- Integrate financial systems > Automatic invoicing



## More efficient business operations

- Leverage big data and advanced analytics > Enhanced forecasting
- Link customer portal and operational systems > Automated shipment booking process
- Integrate operational systems with third parties > Reduced manual carrier booking
- > Instant updates on schedules and changes



Lower unit costs



Higher customer stickiness and satisfaction



Greater profitability

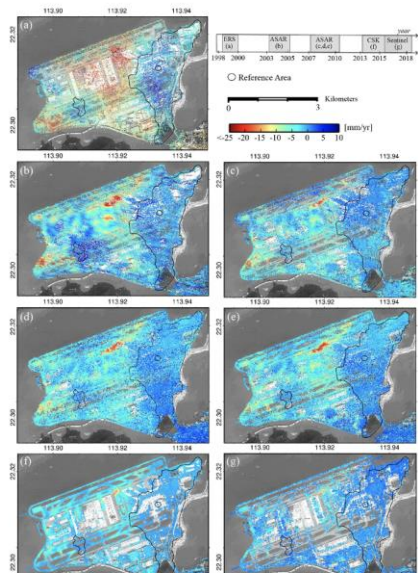
***Time to Change!***

# Technologies for Future Logistics

## Public Infrastructure Enhancement

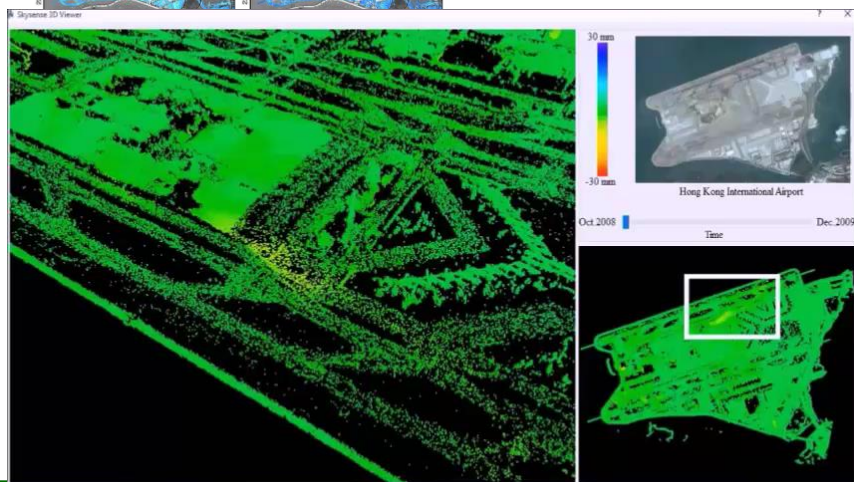
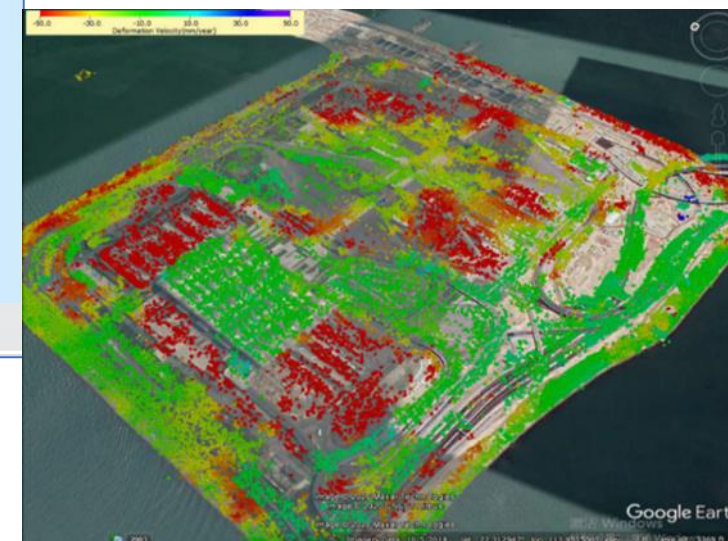
# Satellite Monitoring (InSAR)

Example: Land Subsidence of Hong Kong International Airport



- (a) ERS-2 descending (1998 – 2000)
- (b) ASAR descending (2003 – 2005)
- (c) ASAR descending (2007 – 2010)
- (d) ASAR ascending (orbit 25, 2007 – 2010)
- (e) ASAR ascending (orbit 297, 2007 – 2009)
- (f) CSK descending (2013 – 2017)
- (g) Sentinel-1A ascending (2015 – 2018)

Test of the algorithms, hardware and software developed will be carried out at the 3rd Runway of the Hong Kong International Airport



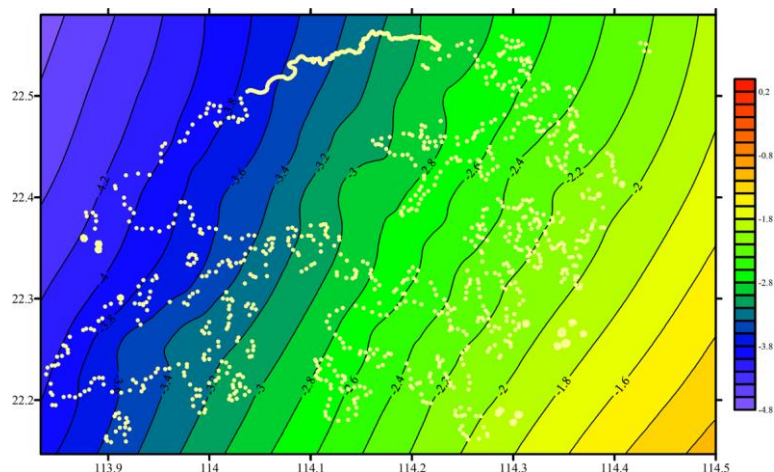
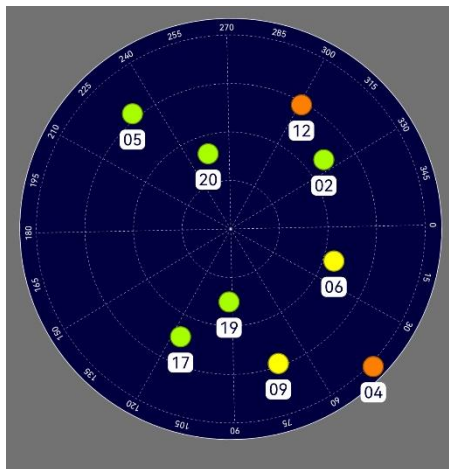
Hong Kong International Airport Runway 1



HK Boundary Crossing Facilities Island

# Hong Kong Positioning Infrastructure based on GPS, Beidou and Ground Based Augmentation System

GPS only: 13



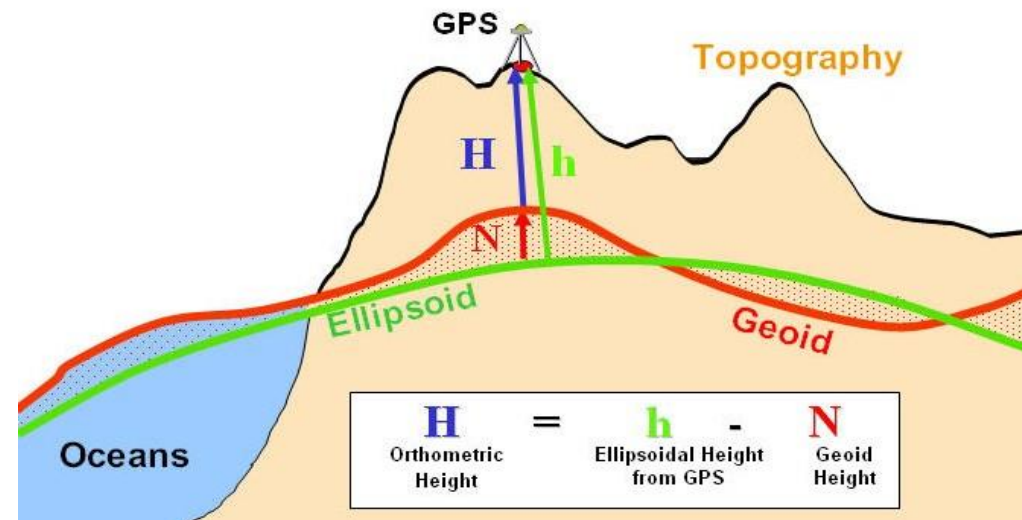
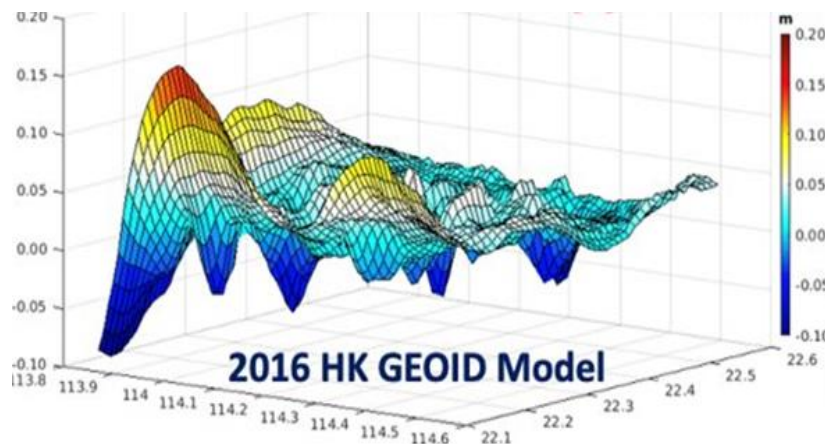
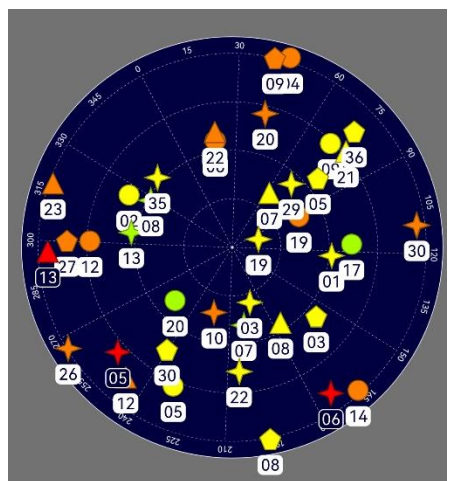
Hong Kong Geoid Model (1 cm)

- Integrating GPS and Beidou
- 1cm accuracy for Real-Time Kinematic (RTK) positioning



**80 million downloads per month!**

GPS+GLONASS+Beidou: 46





# Chinese New Generation of Beidou III

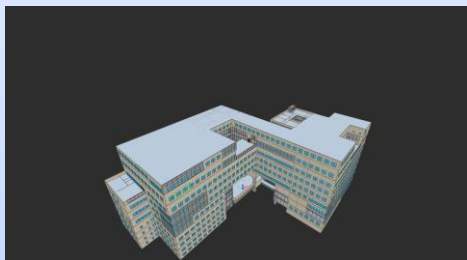
- Beidou III provided global coverage in 2019
- Global service in 2020
- Provide better services
  - Improve communication
  - Support Precise Point Positioning (PPP)
  - Only Beidou III
- Signal structure of Beidou III is different from Beidou II
  - Need new receivers to receive Beidou III signals



	Coverage	Communication	SBAS	PPP service
<b>GPS</b>	Global	No	No	No
<b>Beidou II</b>	Regional	200 characters /min	No	No
<b>Beidou III</b>	Global	At least 1000 characters/min, can be more	Yes	Yes (first in the world)

# Public Infrastructure Enhancement: 3D Geospatial Framework

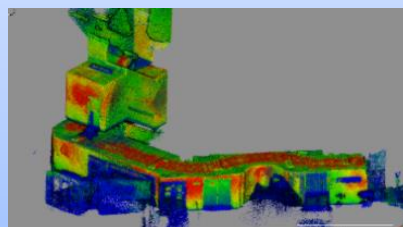
## 3D Geodatabase Framework



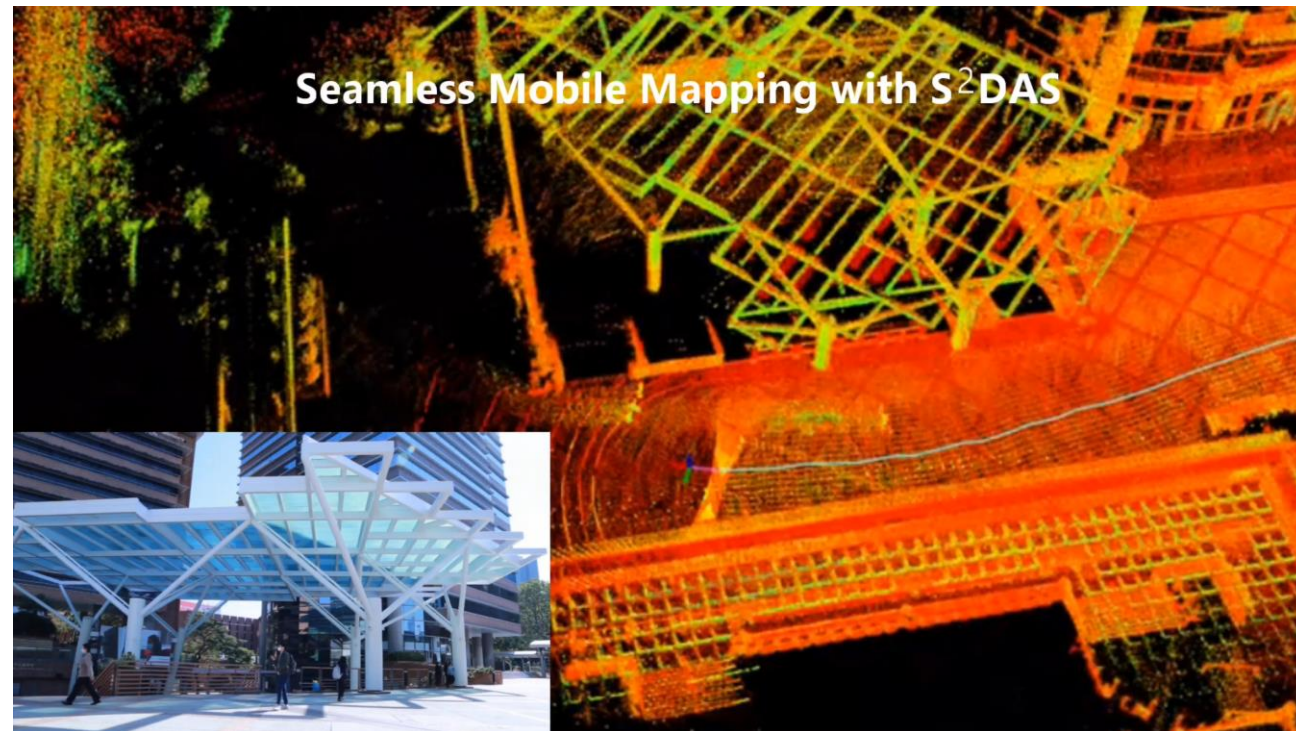
## Data Capture



## 3D Spatial Modeling

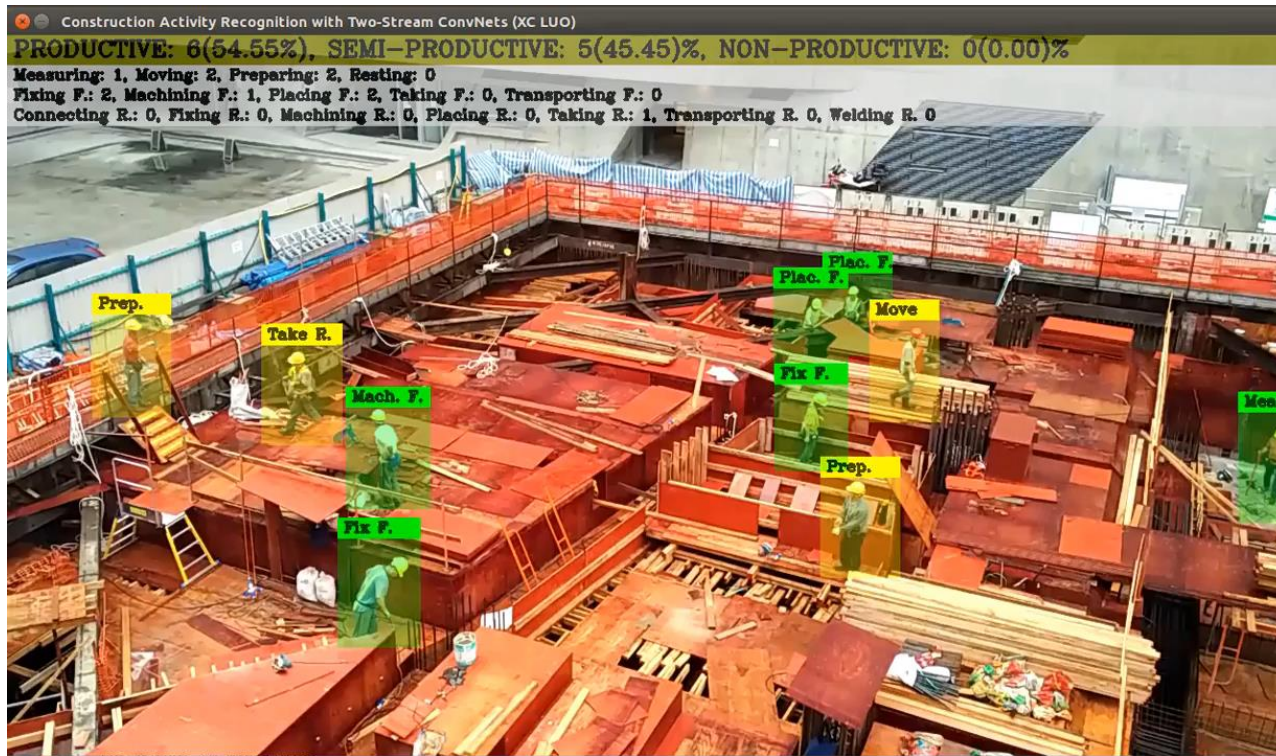


## Seamless Mobile Mapping with S<sup>2</sup>DAS



*Lightweight 3D Seamless Spatial Data Acquisition System (SSDAS) for 3D data capture*

# Large-scale Site Process-based Supervision with AI Vision Analytics



Activities Classification			
Classification	Working	Preparation	Idle
Description	Using Trade Tools	Supporting the main activity	Not contributing to the activity
Examples	Mason laying brick, laborer mixing mortar.....	Tradesman getting material, travelling to work location....	Waiting for equipment to be fixed, waiting for instructions....

活动类型  
Activity type

活动持续时间  
Activity duration

活动频率  
Activity frequency

活动间隔  
Activity interval

活动顺序  
Activity sequence

活动资源  
Activity resources

过程的质量控制 Process-based quality control

# Technologies for Future Logistics

**LSCM's Work in Public Logistics Infrastructure: Smart Mobility**

# Navigation System with Advanced BLE IoT Network

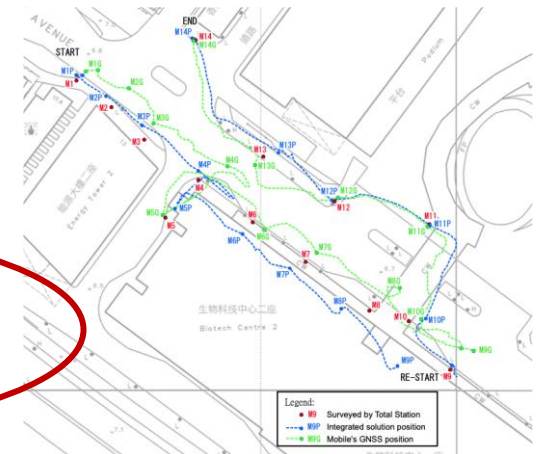
## Smart Lamppost with BLE IoT Network



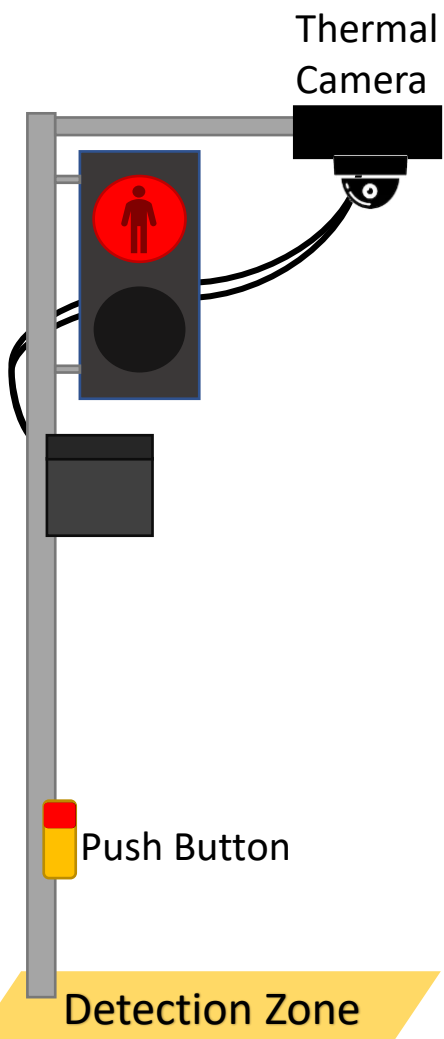
- Building blocks of Smart City and Smart Mobility .
- Only broadcasting geo-info.  
***No scanning, no privacy issue.***
- ***Even without satellite coverage, the system can provide positioning services.***

### Positioning Error Comparison Against Terrestrial Measurement (Trial at HKSTP)

	Pure GNSS Positioning	BLE Corrected Positioning
Root Mean Square Error	4.9m	<b>3.4m (even without satellite coverage)</b>



# LSCM Smart Traffic Light Pushbutton



Waiting: 2 / 0

Person (1)

Person (2)

1. Detect waiting pedestrian, even with umbrella

請等候

2. Trigger Pushbutton

This block illustrates the first two steps of the process. On the left, a thermal camera view shows two pedestrians, labeled 'Person (1)' and 'Person (2)', within a green detection zone. A red status bar at the top left indicates 'Waiting: 2 / 0'. A blue arrow points to the right, where a yellow pushbutton is shown with a red '請等候' (Please Wait) sign and a red starburst effect, indicating it has been triggered.

Person (31)

Waiting: 0 / 9

3. Detect pedestrian passing by

請等候

4. Cancel Request if no one waiting

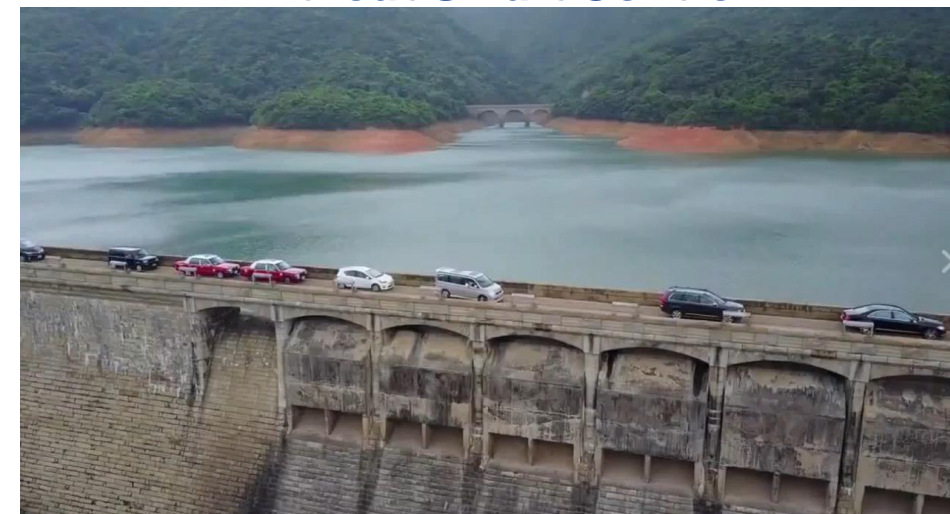
This block illustrates the final two steps. On the left, the thermal camera view shows a single pedestrian, labeled 'Person (31)', within a red detection zone. A red status bar at the top left indicates 'Waiting: 0 / 9'. A blue arrow points to the right, where the yellow pushbutton is shown with a red '請等候' sign, but without the starburst effect, indicating the request has been cancelled.

# Smart Traffic Control with LSCM AI & Vision

With Smart Control



Without Smart Control



安裝了八組交通探測器



Time to cross the dam reduced from 400s to 145s

# Smart Traffic Signal Control for Road Efficiency

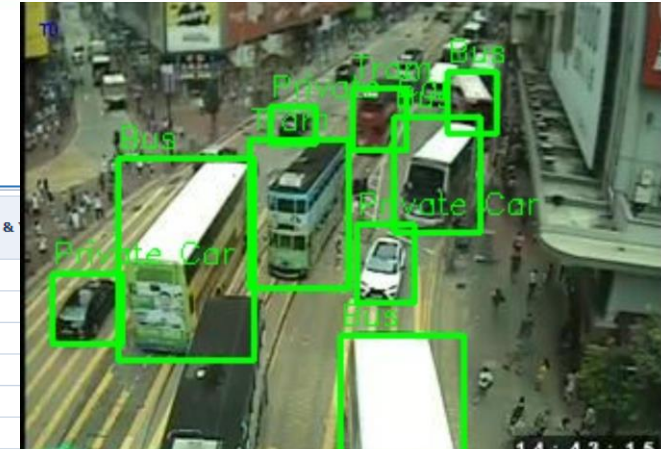
## Current pain points:

- No data storage
- No analysis for road efficiency improvement

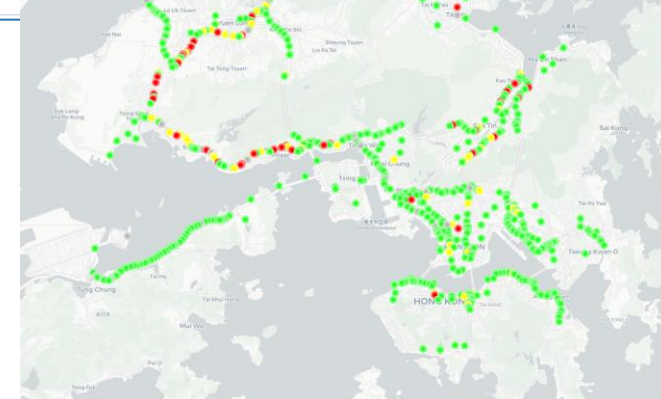
## LSCM's solution:

- Multi-sensor platform
- Predictive analytics
- Realtime junction traffic signal control

region	Hong Kong Island	Kowloon	Lantau	Shatin & Ma On Shan	Tai Po & North	Tin Shui Wai &
district						
Central & Western	3,048					
Eastern	5,080					
Islands			4,572			
Kowloon City		3,937				
Kwai Tsing			127			
Kwun Tong		7,493				
North						
Sai Kung		1,524				
Sha Tin				10,033		
Sham Shui Po		5,715				
Southern	635					
Tai Po						
Tsuen Wan			2,413			
Tsuen Wan01						
Tuen Mun						
Wan Chai	2,413					
Wong Tai Sin		1,397				
Yau Tsim Mong		5,080				
Yuen Long						
Totals	11,176	25,146	7,112	10,033		



- ✓ LSCM is the first to use video analytics technology for **realtime** traffic control
- ✓ LSCM is the first to make use of images from high mesh camera for data collection and analysis





# Technologies for Future Logistics

**Public Logistics Infrastructure: Cross-Boundary**

# Smart Customs: Green Lane, Seamless Clearance

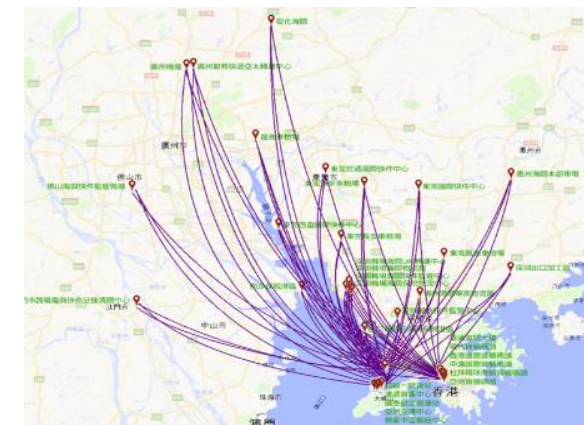
## E-LOCK



Hong Kong Customs

Mainland Customs

Example: Northbound air-land transportation



- Officially launched in March 2016
- Covering 63 customs clearance points in the Mainland and 13 customs clearance points in Hong Kong
- Over 800 routes between the Pearl River Delta and Hong Kong

Data as of 11 Dec 2020

Shorten 2 hours clearing time into 5 minutes!



# E-lock in Vaccination Logistic

**電子鎖追蹤技術**

實時追蹤及監察疫苗的運送過程  
確保疫苗安全地送達各個接種中心

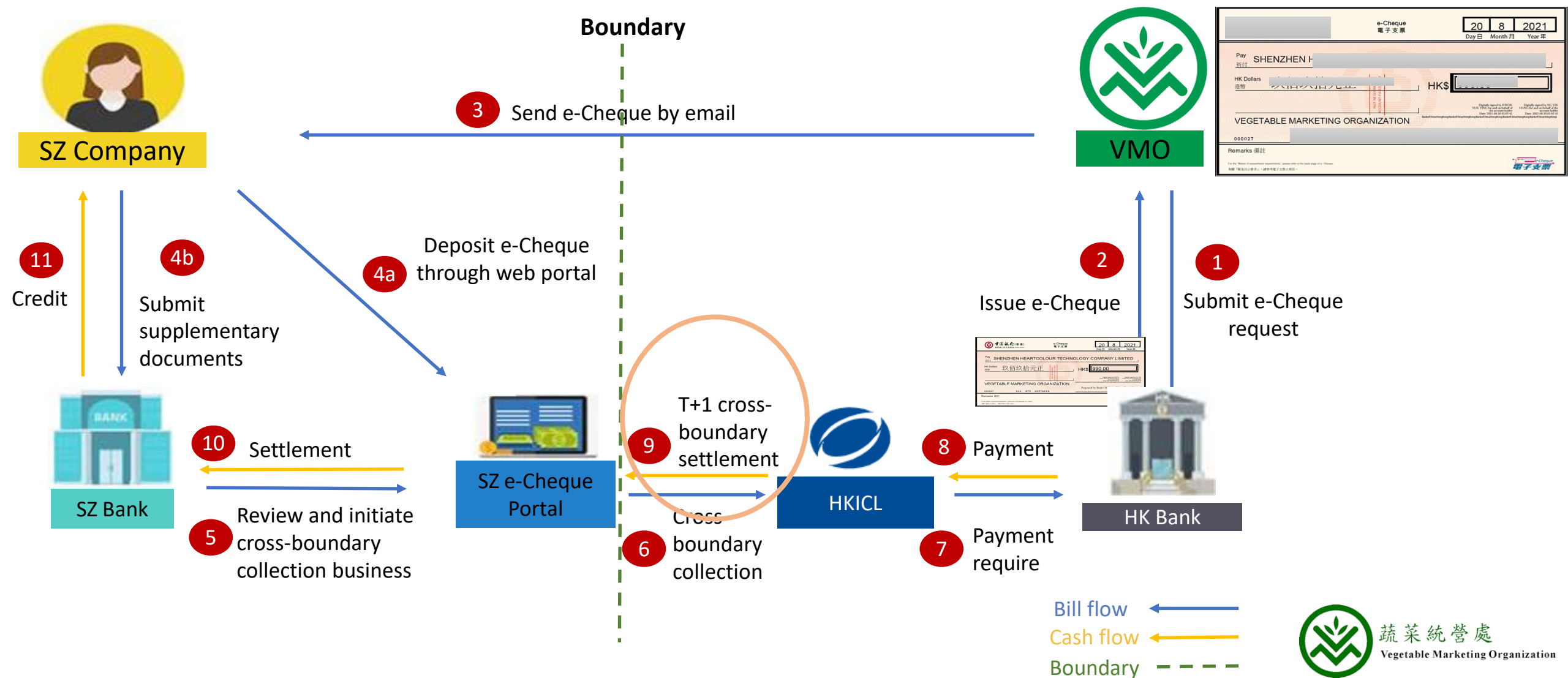


E-Lock-Secured Vaccine Safe Logistics

Date: 09/03/2021

VendorELockID	Date Time (L)	Location Locked	Date Time (U)	Location Unlocked
CNLS0001500688	9/3/2021 6:11	DCHA	9/3/2021 6:31	(26)聖保祿醫院
CNLS0001491224	9/3/2021 6:11	DCHA	9/3/2021 6:36	(22)教育局九龍塘教育服務中心
CNLS0001500437	9/3/2021 6:11	DCHA	9/3/2021 6:37	(25)鴨洲體育館
CNLS0001502484	9/3/2021 6:11	DCHA	9/3/2021 6:38	(23)將軍澳體育館
CNLS0001500176	9/3/2021 6:10	DCHA	9/3/2021 6:40	(13)東涌社區會堂
CNLS0001487376	9/3/2021 6:11	DCHA	9/3/2021 6:40	(12)何文田體育館
CNLS0001486609	9/3/2021 6:12	DCHA	9/3/2021 6:43	(8)友愛體育館
CNLS0001501971	9/3/2021 6:10	DCHA	9/3/2021 6:45	(29)龍琛路體育館
CNLS0001490198	9/3/2021 6:11	DCHA	9/3/2021 6:45	(10)西灣河體育館
CNLS0001500688	9/3/2021 6:39	(26)聖保祿醫院	9/3/2021 6:50	(17)香港養和醫院
CNLS0001500950	9/3/2021 6:10	DCHA	9/3/2021 6:52	(6)大埔墟體育館
CNLS0001500437	9/3/2021 6:57	(25)鴨洲體育館	9/3/2021 7:06	(24)港怡醫院
CNLS0001491224	9/3/2021 7:03	(22)教育局九龍塘教育服務中心	9/3/2021 7:13	(21)彩虹道羽毛球中心
CNLS0001500688	9/3/2021 7:05	(17)香港養和醫院	9/3/2021 7:14	(7)中山紀念公園體育館
CNLS0001490198	9/3/2021 7:04	(10)西灣河體育館	9/3/2021 7:14	(27)養和東區醫療中心
CNLS0001487376	9/3/2021 6:59	(12)何文田體育館	9/3/2021 7:16	(15)界限街體育館(一號及二號)
CNLS0001502484	9/3/2021 7:01	(23)將軍澳體育館	9/3/2021 7:22	(28)曉光街體育館
CNLS0001486609	9/3/2021 7:06	(8)友愛體育館	9/3/2021 7:23	(9)元朗體育館
CNLS0001500176	9/3/2021 7:01	(13)東涌社區會堂	9/3/2021 7:28	(19)荔枝角公園體育館
CNLS0001500950	9/3/2021 7:16	(6)大埔墟體育館	9/3/2021 7:33	(18)香港中文大學醫院
CNLS0001501971	9/3/2021 7:01	(29)龍琛路體育館	9/3/2021 7:34	(20)荃景圍體育館
CNLS0001500176	9/3/2021 7:33	(19)荔枝角公園體育館	9/3/2021 7:48	(14)林士德體育館

# Cross-Boundary: e-Cheque Deposit



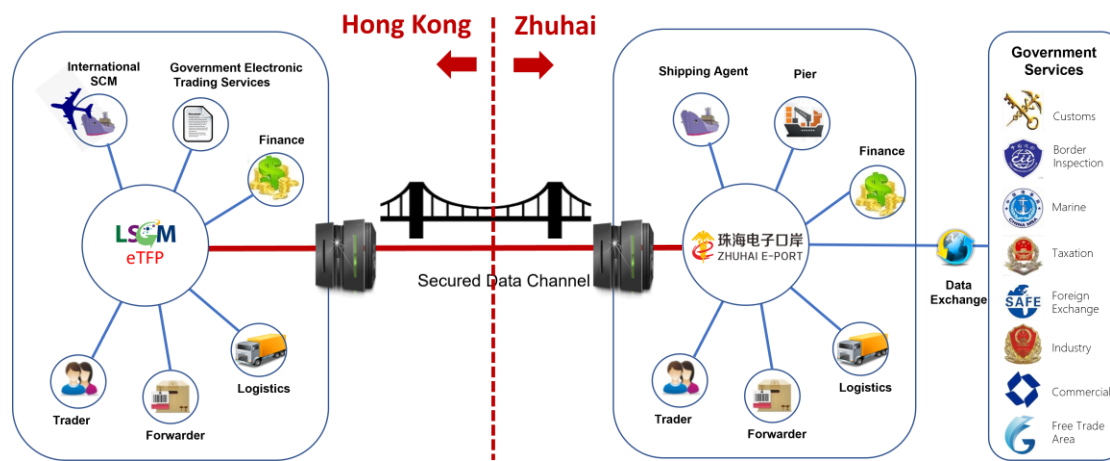
HK-Zhuhai Trade Facilitation Platform  
香港珠海貿易便利電子平台



中国（珠海）国际贸易单一窗口 | 珠海电子口岸  
China (Zhuhai) International Trade Single Window | Zhuhai Electronic Port

中央标准应用							
企业资质	许可证件	原产地	运输工具	舱单申报	货物申报	加工贸易	税费办理
海关原产地证书申请	贸促会原产地证书申请	原产地证书自助打印	进口在途农产品关税税率适用证明申	原产地综合服务平台	金伯利国际证书签发	原产地证书核查	
地方特色应用							
香港-珠海贸易便利电子平台	跨界车辆信息管理	粤澳货物申报一单两报平台	企业通关信息查询	金融服务	小微企业在线投保	加工贸易工单式核销系统	

LSCM – ePort: eTFP



# From eTFP to a “Super Window”

A single-entry portal to access useful information about doing business in Hong Kong, e.g.



Business Opportunity



Logistics and Declaration



Finance



Legal



Testing and Certification



Open Data



Logistics Association



Notes of Arriving HK



COVID-19

Search for Investment Info

Seek for Government Funding

Lodge Import and Export Document

Use e-Cheque to Settle Payment

Get Help about Dispute Resolution

GovHK

Home >

Su  
Fo

Logi

Go

Use

Home

Pas

e-C

The

Inn  
Tec  
Bet

This  
and  
will  
be  
com

the public, or th  
the needs of sp  
groups.

Log

Home

Need an affordable and simple way  
to resolve COVID-19 related disputes?

We help you to solve it in 6 weeks

at only HK\$200

Click to view the video

The Scheme is supported by the HKSAR Government. Visit our website for details

and more ...

# Super Window: COVID-19 Information

Provide COVID-19 current situation and **onset risk prediction** in different territories to facilitate operational decision making



COVID-19

Spatial Prediction of COVID-19 Onset Risk



WHO COVID-19



COVID-19 situation in Vietnam



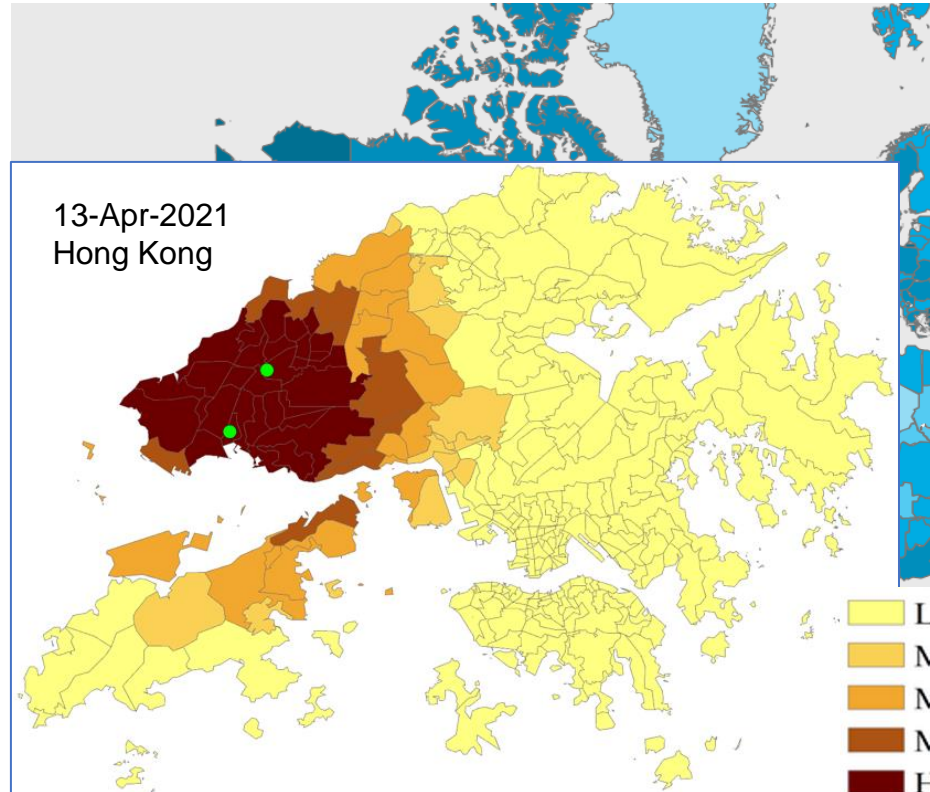
COVID-19 situation in Japan



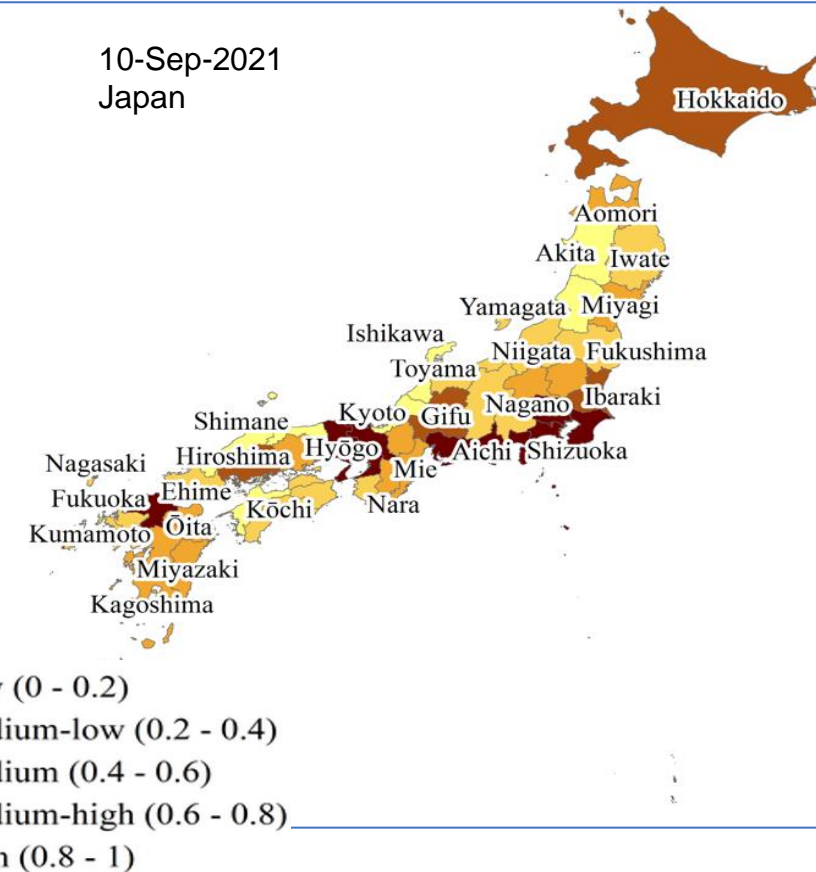
and more ...



Worldwide COVID-19 Cases Overview



10-Sep-2021 Japan



Onset Risk Prediction (Reference Only)

# Technologies for Future Logistics Enterprise Applications

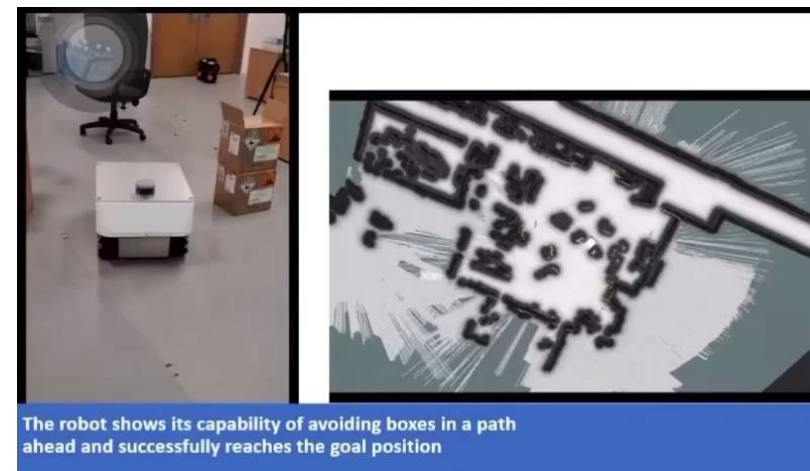
**Robotics & Automation**



# Service Robot Deployment



***Complete range of robots and navigation technologies!***



## Smart Follower- Stacker



- User location can be tracked by UWB sensors through triangulation
- The robot will follow the user and keep safety distance in follow me mode

# Smart Warehouse with AGV (Autonomous Guided Vehicles)



***Save 50% manpower and reduce the picking time by 50%!***



***More convenience and service excellence to customers!***

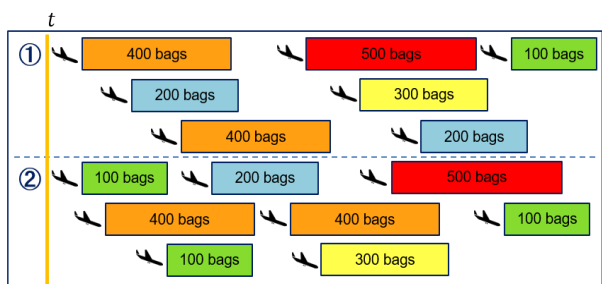
# Technologies for Future Logistics

## AI and Big Data Analytics

# Big Data Approach for Dynamic Baggage Distribution Management

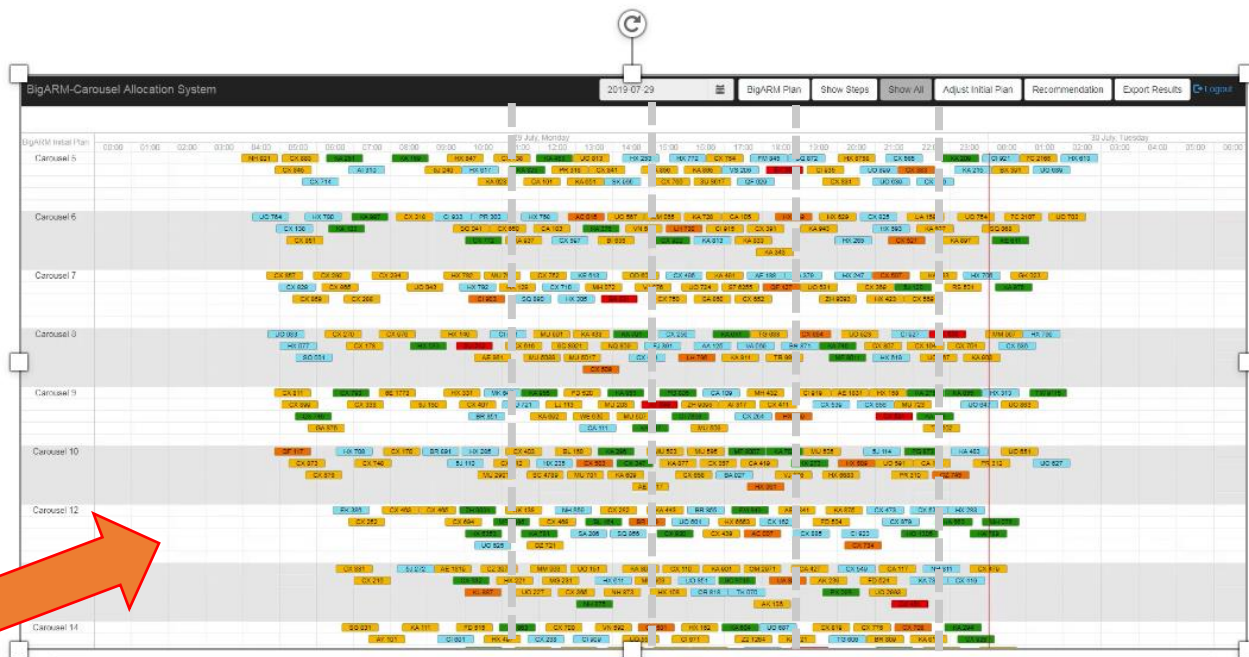


72.9 million passengers in 2017  
(1150 flights daily)



✓ Automation ✓ Improved plan ✓ Load is balanced

Application for reclaim belts allocation



## Top 20 important factors:

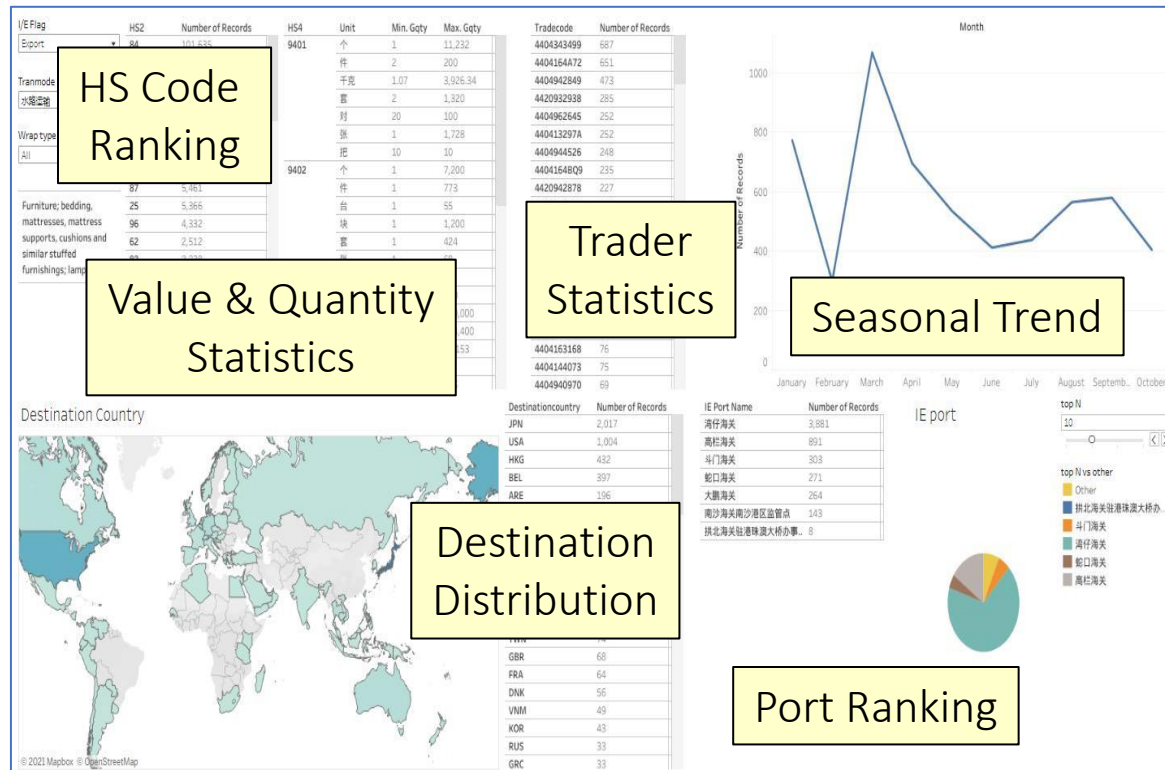
- RHO\_JAT
- Est. number of passengers
- Travel time from stand to carousel
- Esti number of bags
- ETO\_hour
- ETO\_dayofmonth
- Humidity
- Wind
- Barometer
- Temperature
- ETO\_dayofweek
- Airline\_Emirates
- Airline\_British Airways
- Origin\_Asia/Shanghai
- Origin\_Asia/Tokyo
- weather\_Passing clouds
- weather\_Scattered clouds
- Origin\_Asia/Ho\_Chi\_Minh
- Airline\_Hong Kong Airlines
- weather\_Clear

**Proven AI Technology to Optimize Complex Operation!**

# Trade Facilitation Data Analytics

Research for Tools to find trade patterns and trends of port traffic and logistics

Technology Pilots with HK C&ED



- What are the seasonal and trade pattern of various types of goods imported to / exported from HK?
- What are countries / markets of export distribution of certain goods from HK?
- What are the most active ports to import/export certain goods?
- and more ...

導系統

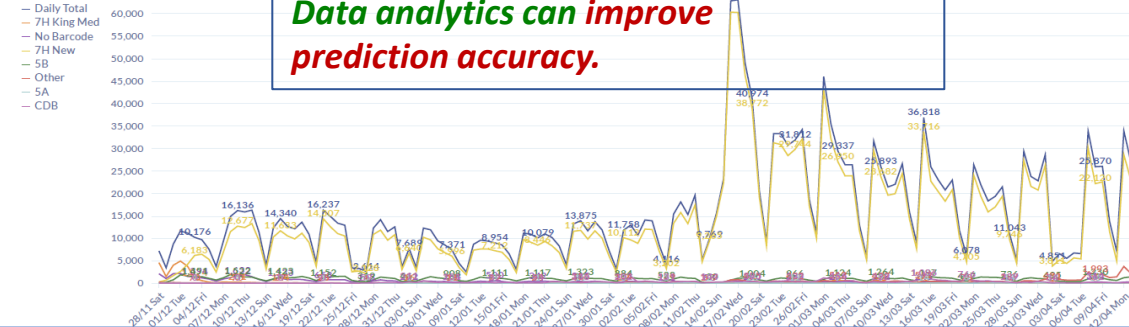
the Cargo Big Data System

# Public Health COVID-19 Surveillance Test – Data Analytics

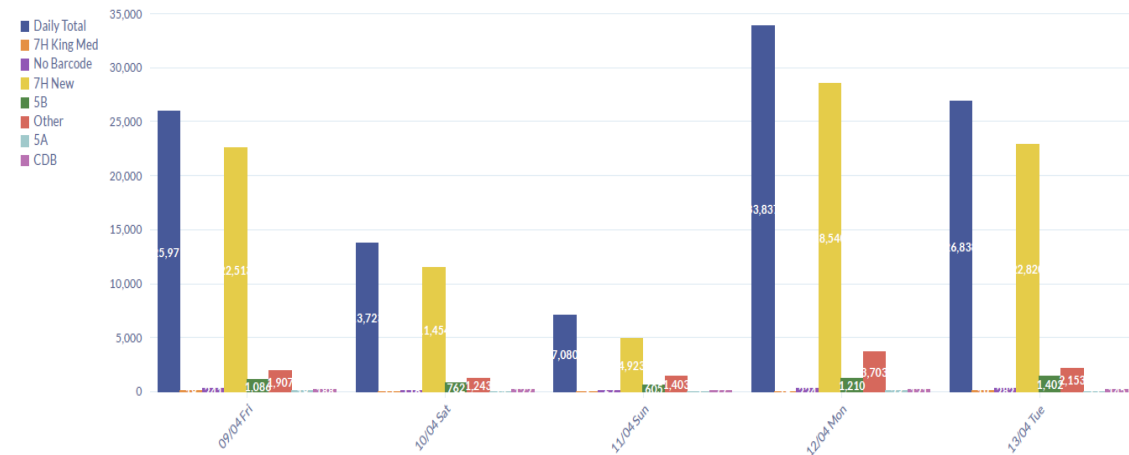
Total no. of Specimen Collected with Figures up to 1800hrs, Apr 13, 2021

TSA	TSB	T7H (King Med)	T7H (New code)	CDB (99)	No Barcode	Other code	Total
1,194	129,148	25,060	1,876,996	32,439	58,135	42,535	2,165,506

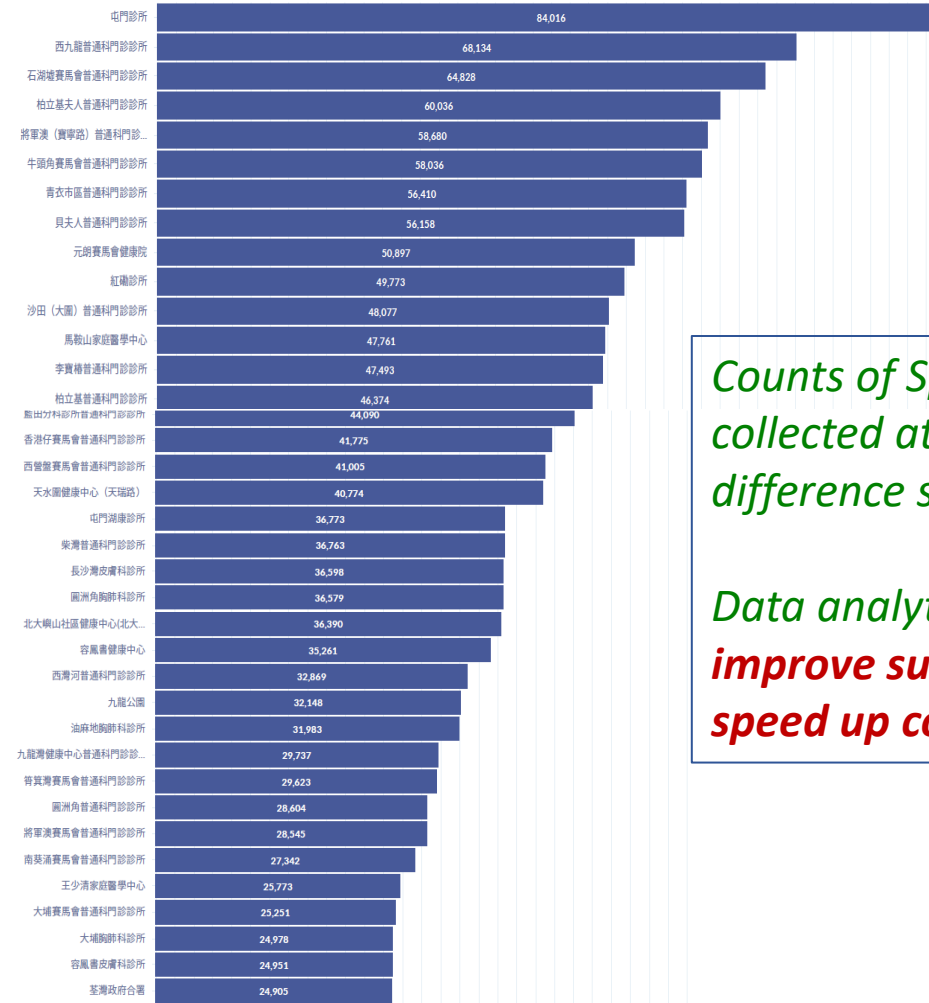
No. of Specimen Collected by Date



No. of Specimen Collected by Date (Last 5 days)



No. of Specimen Collected at each Collect Point (Cumulative)

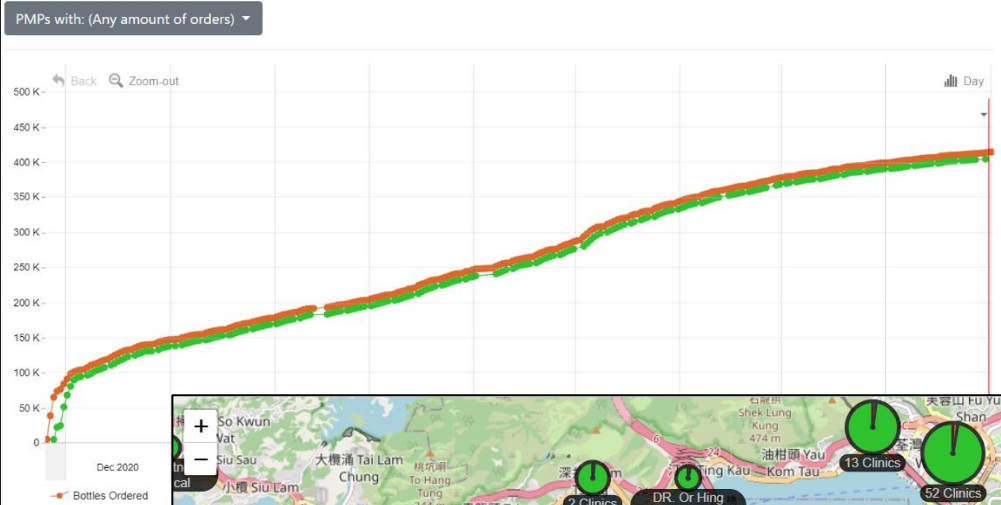


**Counts of Specimens collected at difference spots.**

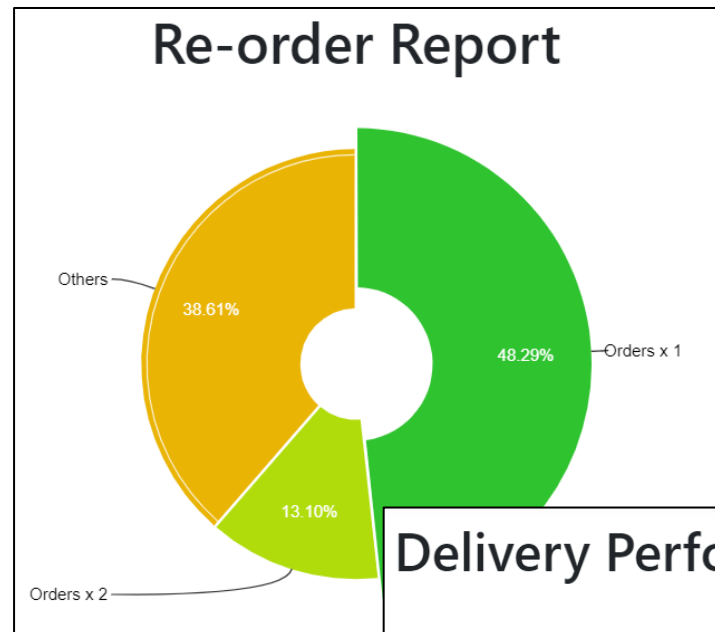
**Data analytics can improve supply and speed up collection.**

# Public Health COVID-19 Surveillance Test – Realtime Dashboard

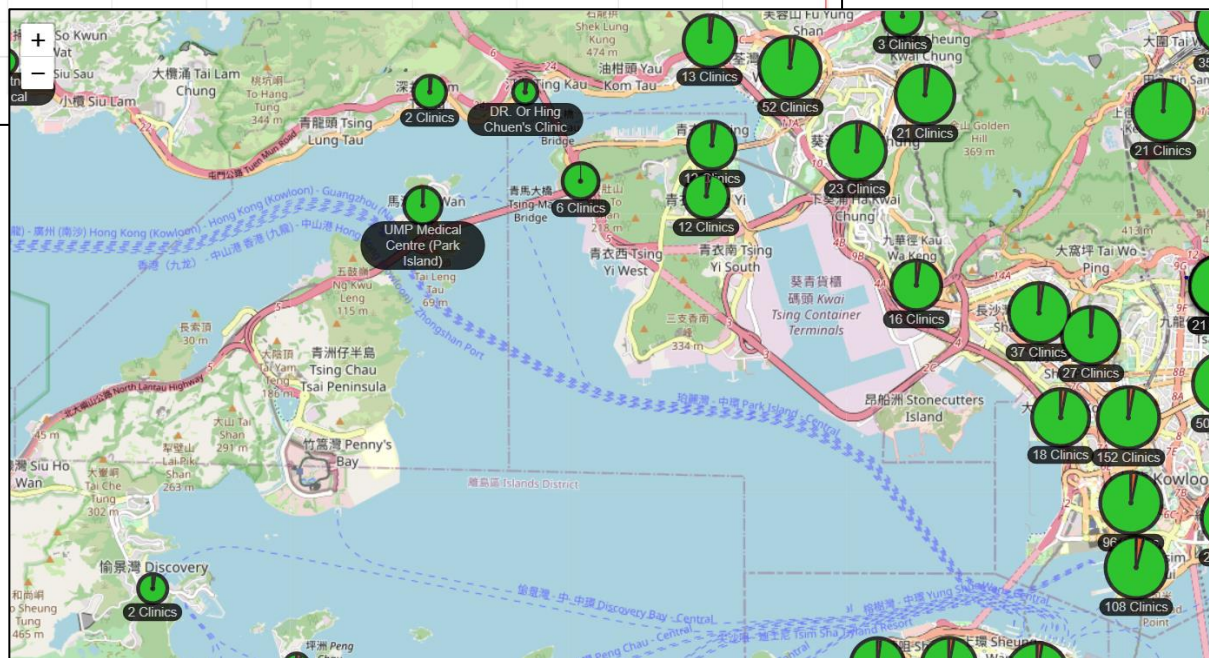
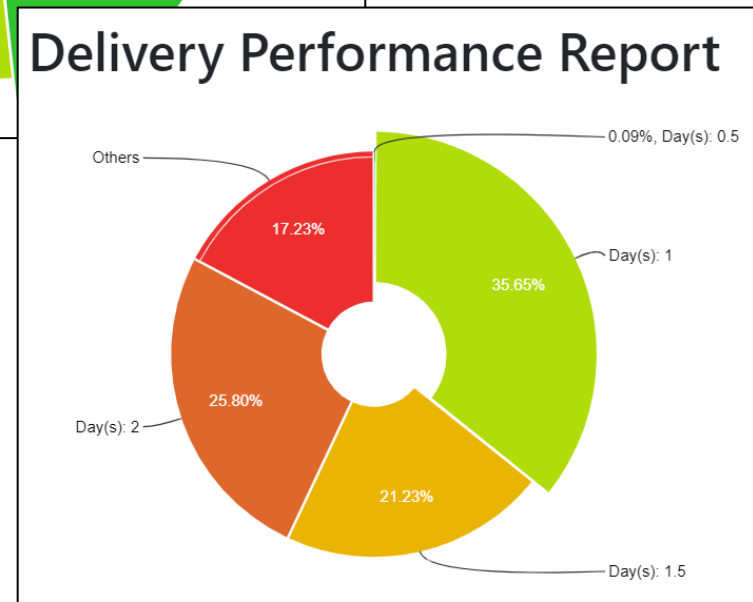
Bottles Ordered, Delivered and Collected Report



Re-order Report



Delivery Performance Report





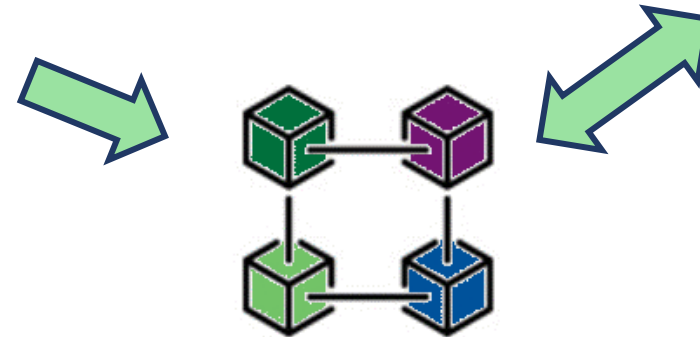
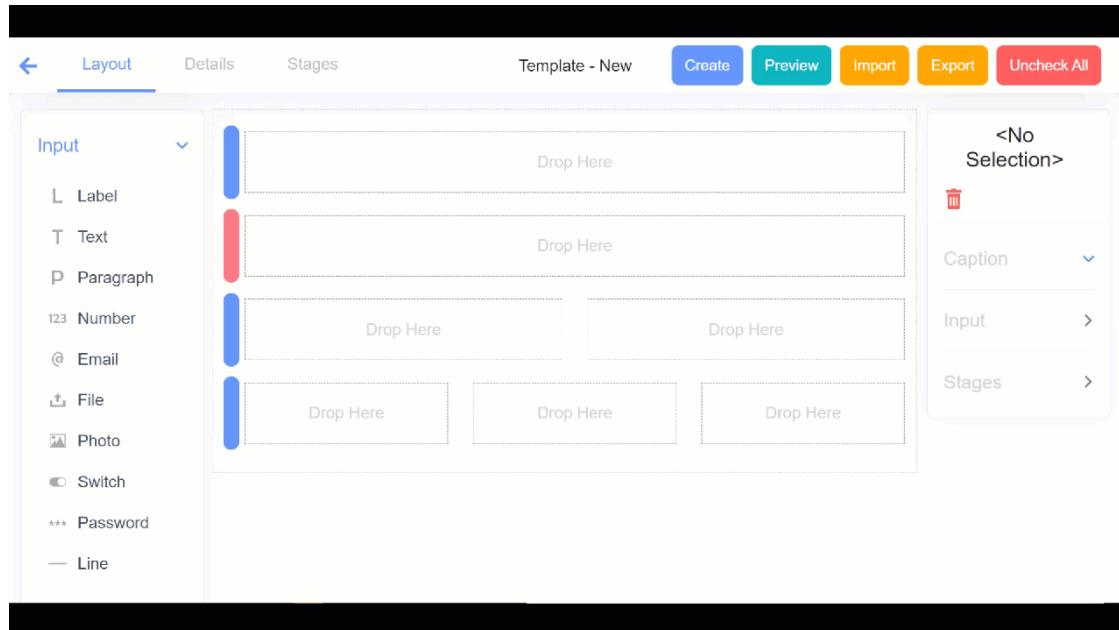
# Technologies for Future Logistics

## Blockchain Technologies

# Digitized Form for Workflow Management

Allow non-technical user to easily design and customized electronic form and workflow for their own use.

*Customized electronic form allows workflow process to easily implement across multiple companies without a centralized system.*



**Test e-Form**

Name

Org. Name

Quantity

Email

English Speaker

File  
 No file selected.

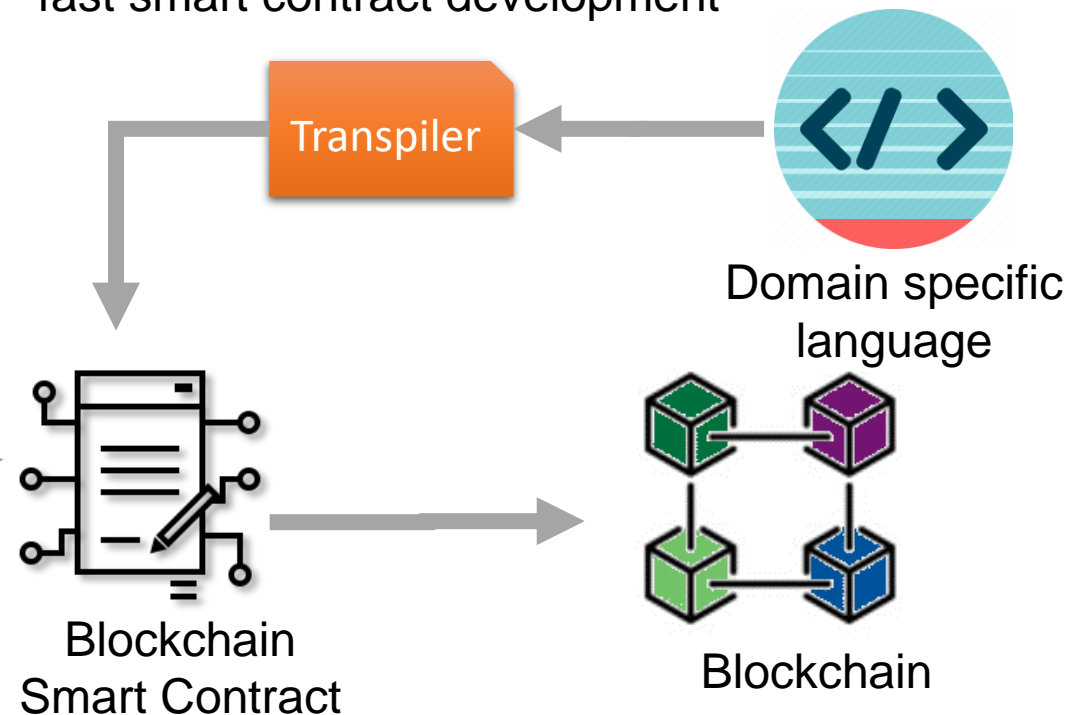
All data are stored on a decentralized blockchain network with immutable record log for auditing.

# Healthcare Community Support System

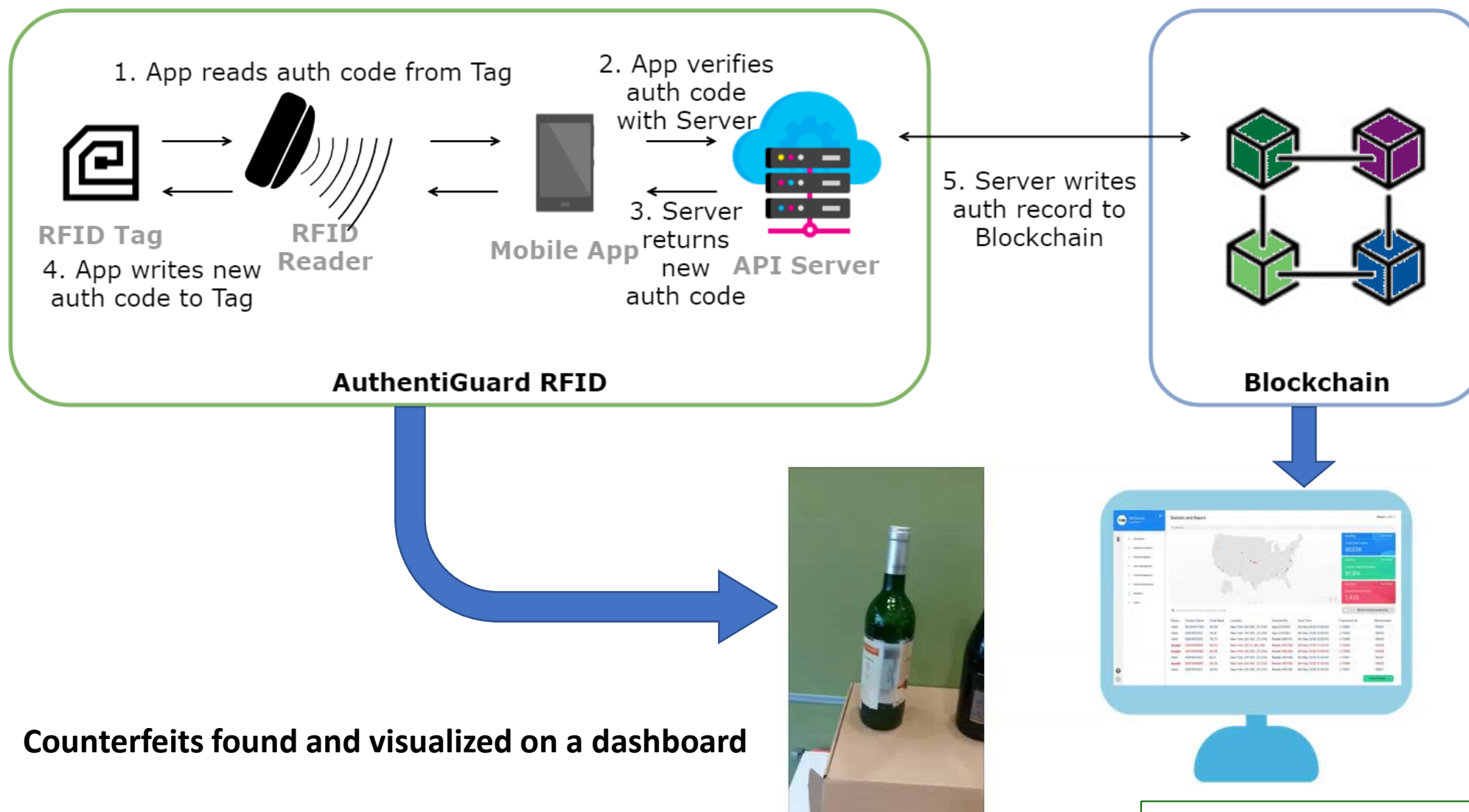
Individual health records are stored on blockchain to provide a reliable personal health journey with **easy information sharing to different doctors with patient's authorization.**

Information store on blockchain through LSCM designed domain specific language which allow fast smart contract development

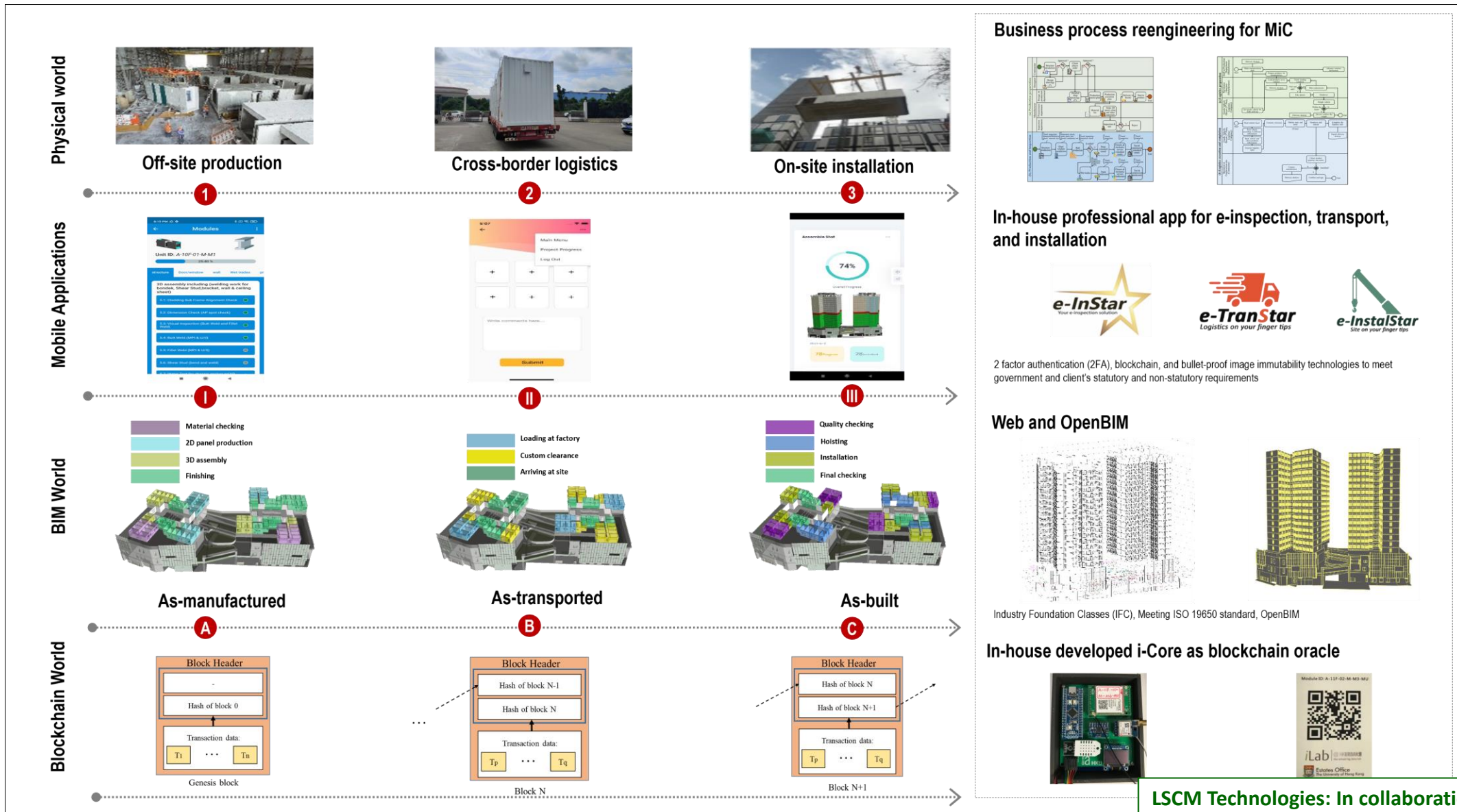
The screenshot shows a patient's profile for Song InSu (宋寅守) on 01/09/2021. The interface includes a 'Diagnosis' section with a 'Testing' input field and a 'Prescription' section for 'ACTEMRA ASSD VIAL SC 162MG/0.9ML 1'. The 'Patient's Feedback' section on the right, dated 25/08/2021, contains 9 questions about daily activities with radio button options for difficulty levels.



# Blockchain as a service for Product Track & Trace



# BIM and Blockchain for MiC



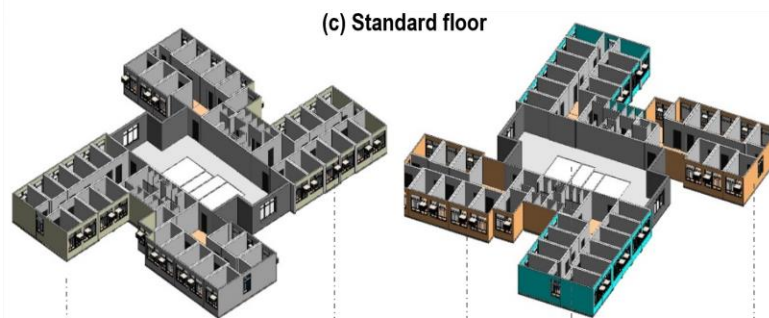
# Pilot project: HKU Wong Chuk Hang Student Residence MiC project



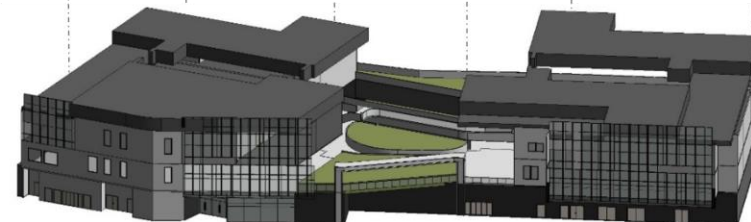
(a) Site location plan



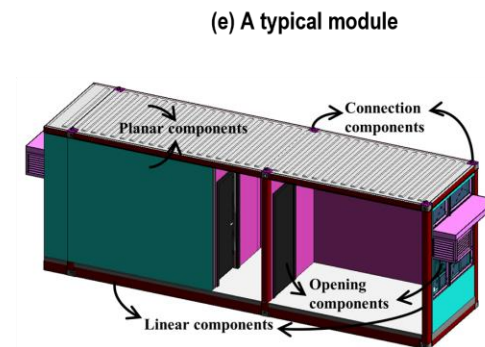
(b) Overall view of HKU's WCH Student Residence project



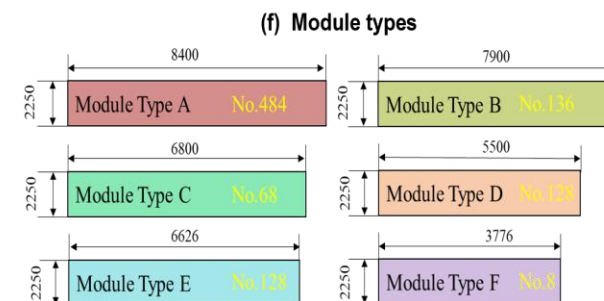
(c) Standard floor



(d) 3-storey podium



(e) A typical module



### Project Brief

**Project Name:** HKU's Wong Chuk Hang Student Residence  
**Functions:** A total of 1224 student places and supporting facilities such as canteen, common room, laundry rooms and car park  
**CFA:** 28,176m<sup>2</sup>  
**Contract sum:** ~HK\$1.1 billion  
**Address:** Police School Road, Wong Chuk Hang, Hong Kong

### Construction Technology

**Overall Structure:** Two 17-storey tower buildings on top of a 3-storey podium  
**Standard Floors:** MiC technology for 17 Standard floors  
**Podium:** Traditional cast in-situ method for 3 non-standard floors and core structures

### Module Type

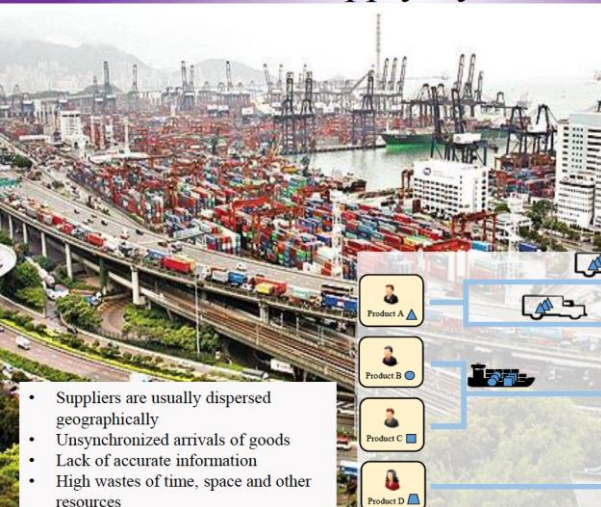
**Module Type A:** Bedroom + Corridor (18 tonnes)  
**Module Type B:** Bedroom + Community Lobby (17 tonnes)  
**Module Type C:** Bedroom + Bathroom (18 tonnes)  
**Module Type D:** Bathroom (16 tonnes)  
**Module Type E:** Bedroom + Community Lobby (14 tonnes)  
**Module Type F:** Balcony/Bathroom (10 tonnes)

# Technologies for Future Logistics

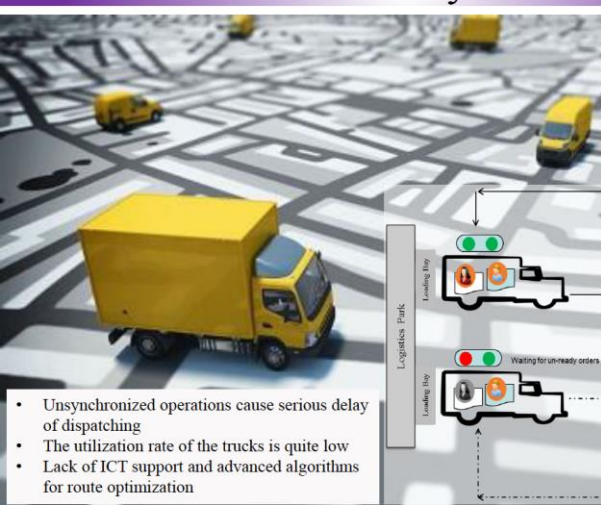
## AIoT Technologies

# Intelligent e-Commerce Logistics Park

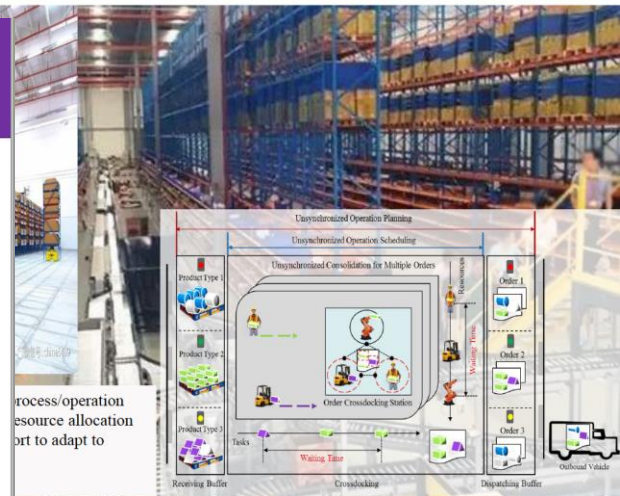
## Scenario 1: Supply Synchronization



## Scenario 3: Order Synchronization



## Scenario 2: Operation Synchronization



## iPark: Core Technologies of Intelligent E-commerce Logistics Parks 智慧電商物流園物聯網



## iPark: Core Technologies of Intelligent E-commerce Logistics Parks

Manufacturing

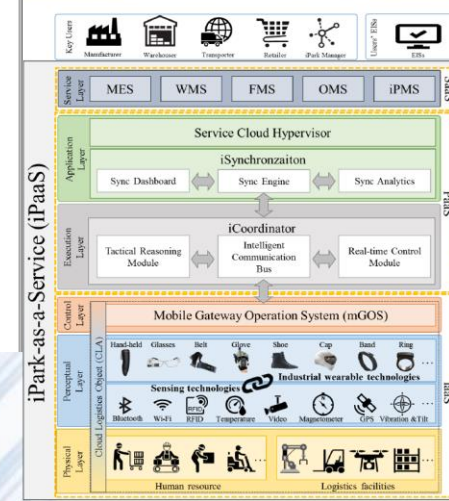
Warehousing

Transportation

Retailing

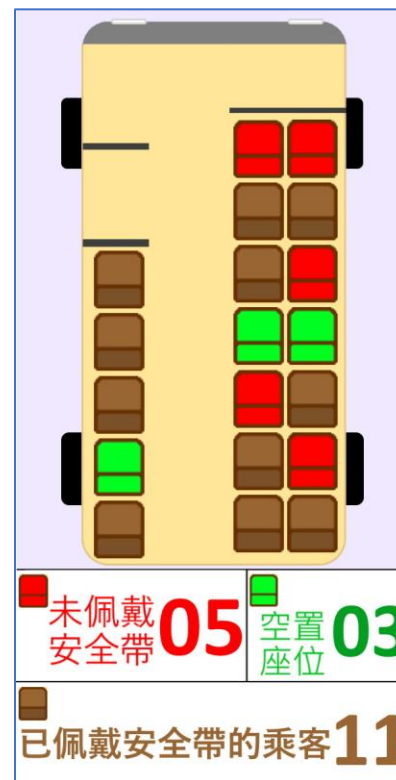
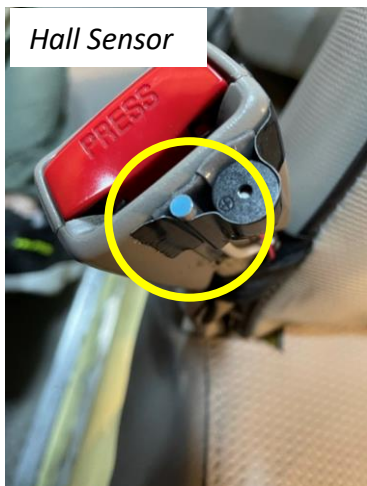


## Architecture of PI-enabled iPark Platform



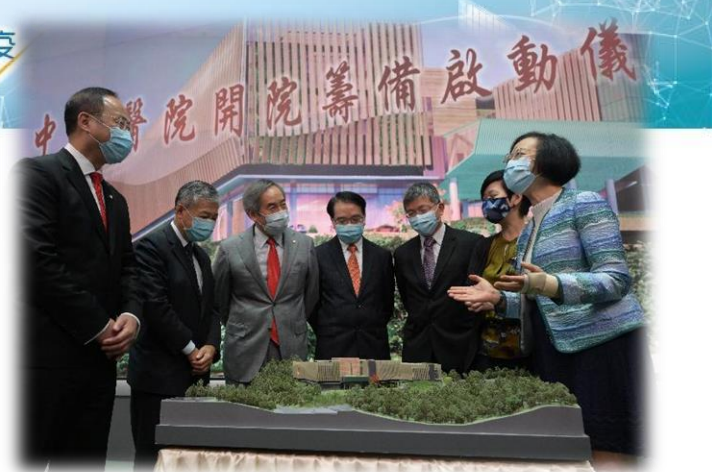


# Seat Occupancy and Seat Belt Fastening Detection for Green Minibus



## Key Deliverables:

- Alert passengers without seat belt fasten
- Shows available seats and the corresponding locations
- Improved the seat belt fastening rate from 4% to 35%**



# 香港中醫院中藥物流科技

香港政府於本年六月啓動中醫醫院開院籌備工作

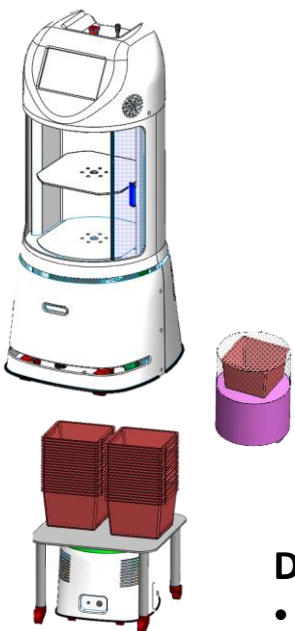
LSCM 聯同 HKUSPACE 提供中藥物流的技術研發，以實行中藥房運作的現代化

## Smart 百子櫃

- E-prescription driven
- Picker's indication
- Drawer status monitoring

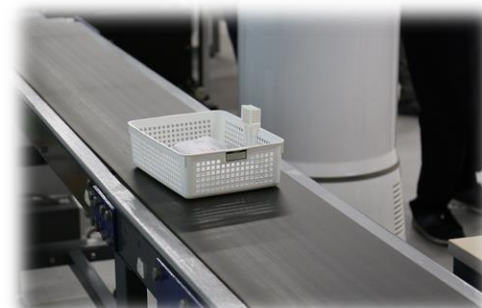


AI assisted  
TCM Dispensing



## Delivery Robots Fleet

- choreography of different purposes robots



RFID enabled workflow management



食物及衛生局  
Food and Health Bureau

LSCM VA System 1.0

Camera device: (Logitech BRIO) (Width=2560, Height=1440)

Scale Trigger Auto Debug



百合  
21.1g

	藥材名稱	重量
1	百合	20g
2	側柏葉	10g
3	廣藿香	20g
4	麥冬	15g
5	南棗	25g
6	佩蘭	15g
7	澤蘭	10g
8	紫花地丁	15g

中藥處方 1/8



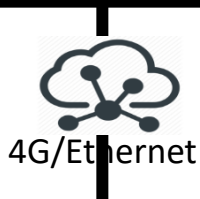
AI assisted TCM Dispensing



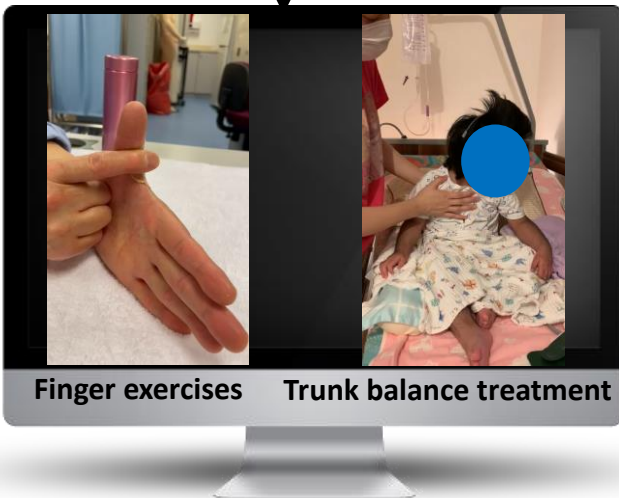
# Tele-Practice Platform System - Service Offering



Tele-Practice Platform



4G/Ethernet



Finger exercises    Trunk balance treatment

Conduct Tele-Rehab Therapy:  
Occupational/ Physical/  
Speech/ Cognitive etc



Rehab Device Rental



AI Video Call Caring

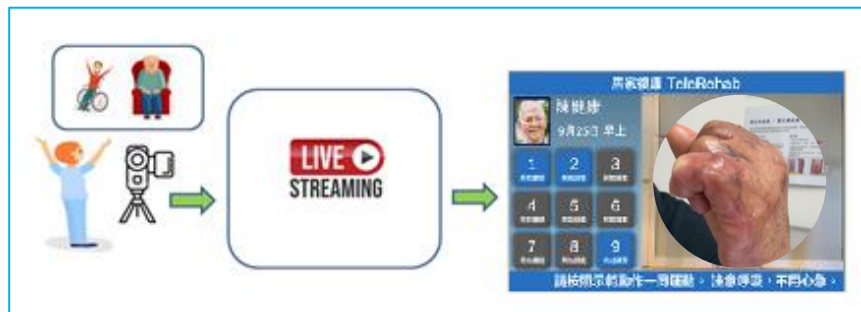


Service User  
Assessment

In collaboration with HKCSS

# Tele-practice Platform System - Core Functions

Tele-Practice Platform



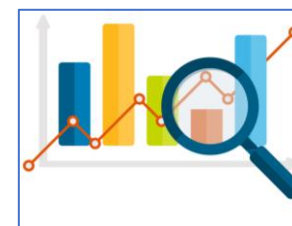
Video Recording, Editing,  
Streaming and Scheduling  
for Rehabilitation Therapy



Integrated with Market Available  
Products for Rehabilitation Therapy



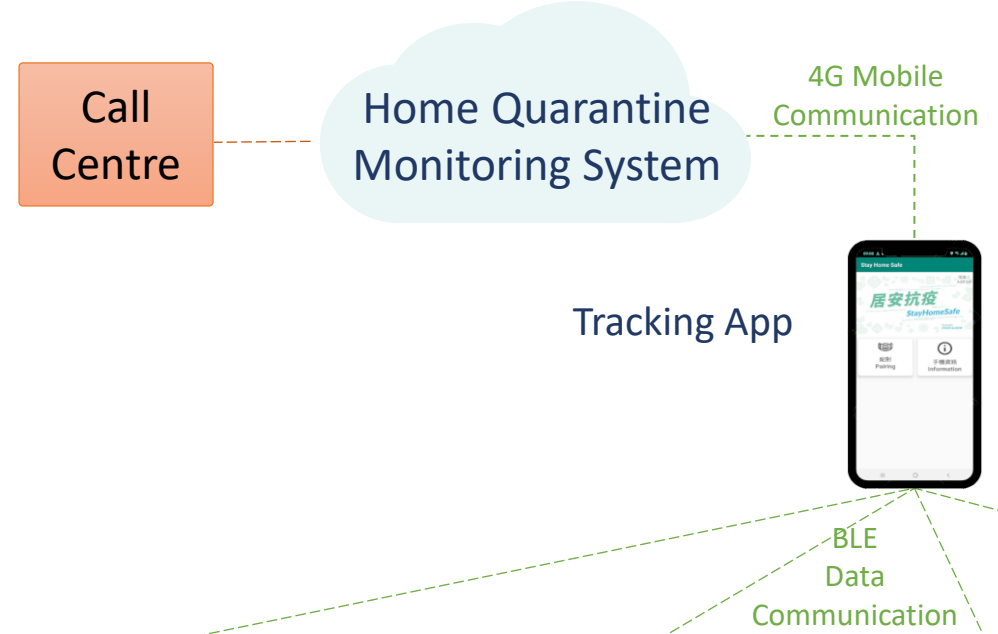
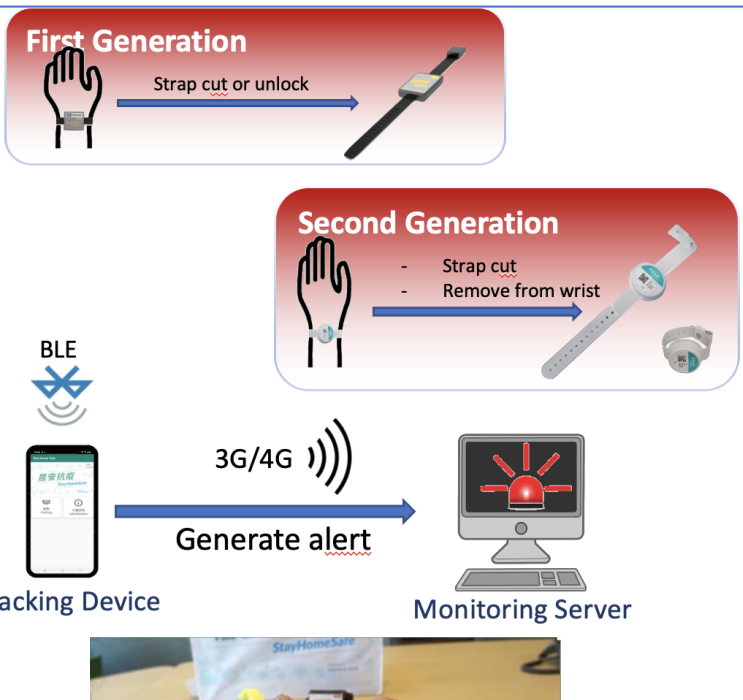
Call Caring with  
AI Technology



Reporting &  
Data Analytics

# Battle Ground AIoT Technologies 現場實戰

# e-Wristband for Hong Kong Quarantine Work



- Features:**
- Anti-Tamper
  - Waterproof
  - Comfortable
  - Easy for self-wearing
  - Home range coverage
  - > 20 days operation time
  - 1 signal per second



Big Bull Turtle 1.0



Skytech / Neosen



WiSilica



Heart Color

首頁 > 即時港聞

其他文章

點擊查看新聞列表

### 港產50萬條檢疫手帶 部分銷夏威夷

2021年09月05日 17:30



星島

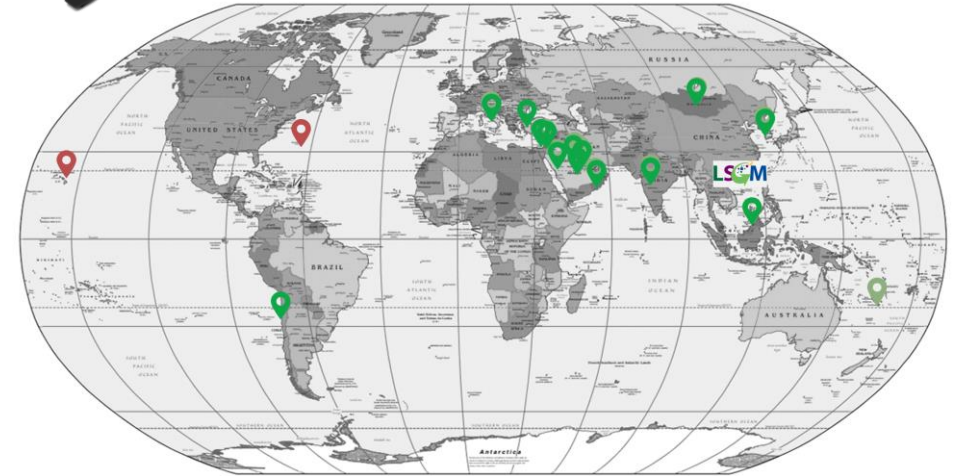


(星島日報報道) 新冠肺炎去年爆發之初，創新科技集團轄下的「物流及供應鏈多元技術研發中心」牽頭研發藍牙電子手環，協助政府推行家居檢疫。中心研發及技術開發總監鄭進雄表示，去年初設計家居檢疫藍牙手帶首個模型(見圖)，面對生產及原材料等難題，負責研發的博士及碩士亦要落手落腳參與生產，結果成功在七日短時間內完成。他透露，中心至今已生產五十萬條檢疫手帶，部分更出售到百慕達及夏威夷。

製?



# Home Quarantine Work



■ Fanout this solution globally

- Delivered over 500,000pcs
- Under sample evaluation
- Shared Experience

Timbers Kauai Resort, Hawaii





# AIoT Logistics Support in Universal Community Test Programme

One Year Anniversary!



- **148 Testing Centres**
- 3 fleet lines, over 200 vehicles
- 14 days operation
- Less than 1.5 hours delivery from all centres
- **1.78 million tests, one of the largest voluntary test programs in the world**

2019 冠狀病毒病  
普及社區檢測計劃  
Universal Community Testing Programme  
COVID-19

**LSGM**  
Logistics and Supply Chain MultiTech R&D Centre  
物流及供應鏈多元技術研發中心

**指揮中心**  
Command Centre



Specimen delivery to Fire-eye lab – 100%!



普及社區檢測計劃 收集箱物流管理系統



Logistics and Supply Chain Multi  
物流及供應鏈多元技術研發

今日數量

累計總數

Powered by LSGM

🏠 檢測實驗室

進行中

0

累積總數

7512

🏠 空箱儲存點

可用空箱

3744

累積總數

16246

📦 樣本運送

進行中

0

累積總數

7128

📦 空箱運送

進行中

0

累積總數

10689

所有樣本收集點

📦 已收樣本箱數

已處理

0

累積總數

7513

📦 已收空箱數

待用

0

累積總數

9339

# Public Health COVID-19 Surveillance Test



Realtime Dashboard & Management Reports



- Trackable test pack
- Statistics gathering
- No personal data



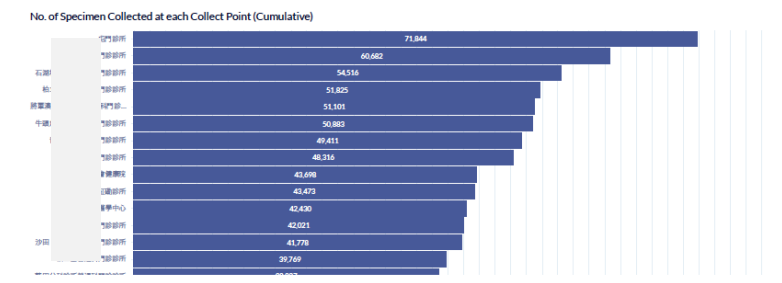
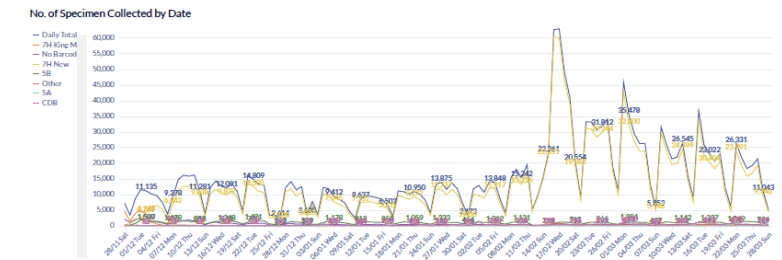
**Logging Device**

Specimen Collection Management Summary

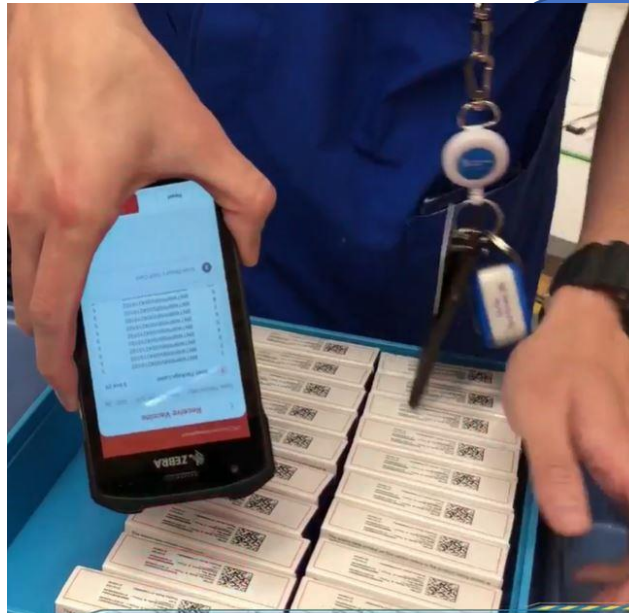
CHART10

Total no. of Specimen Collected with Figures up to 1800hrs. Mar 28, 2021

15A	15B	T7H (King Mo)	T7H (New code)	CDB (P9)	No Barcode	Other code	Total
948	115,741	24,807	1,614,914	30,087	55,614	22,110	1,863,902



# CVC Vaccination Operation



# Vaccination Work – Management Report and Dashboard

## Data-Driven Monitor & Control

### Hong Kong Vaccination Dashboard

(as at 02 September 2021 8pm, unless otherwise stated)

Total Doses Administered

7,685,413

Total Population with 1<sup>st</sup> Vaccine Dose: 4,182,838 (62.1%)

Total Population with 2<sup>nd</sup> Vaccine Dose: 3,502,575 (52.0%)

Latest Daily Figure of Doses Administered

47,688

1<sup>st</sup> vaccine dose: 20,729

2<sup>nd</sup> vaccine dose: 26,959

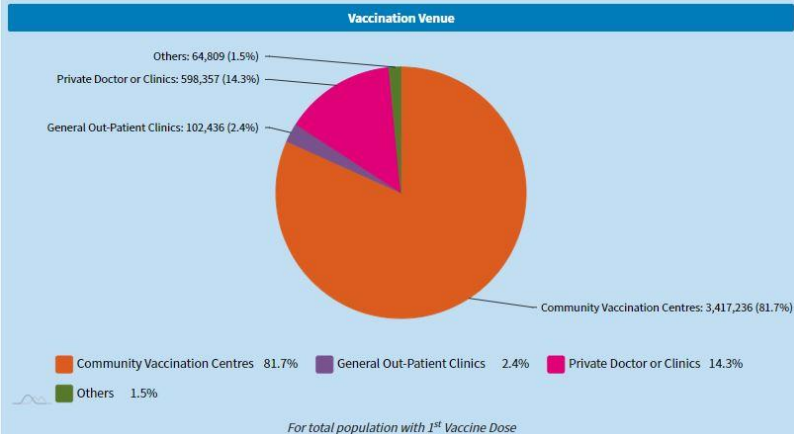
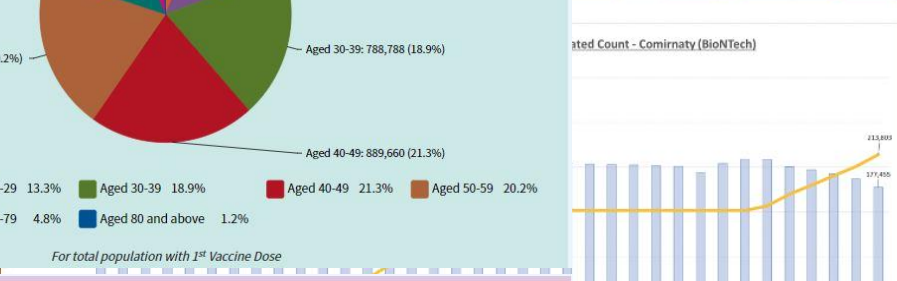
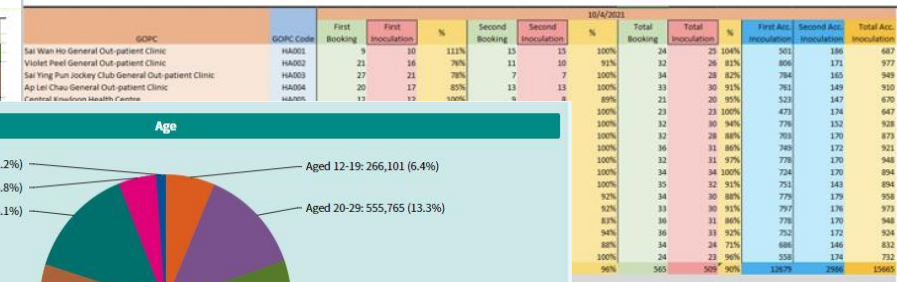
56,771 (7-day moving average)

Click to Download JSON data  
Click to Download CSV data

Click to Download JSON data  
Click to Download CSV data

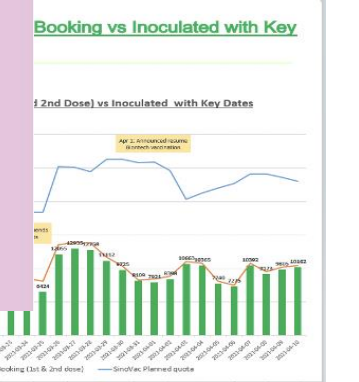
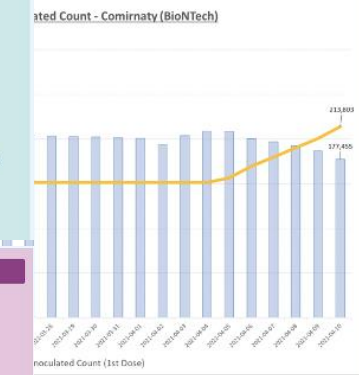
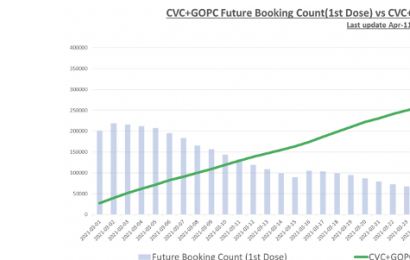
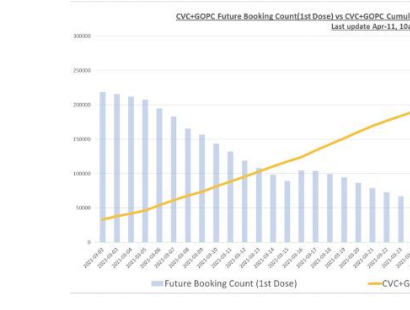
Inoculation Group Summary 2021/04/10 as at 2020 (Total Dose)

Age Group	Accumulated	1 <sup>st</sup> Dose	2 <sup>nd</sup> Dose
0-4	1,310,000	1,310,000	0
5-9	1,310,000	1,310,000	0
10-14	1,310,000	1,310,000	0
15-19	1,310,000	1,310,000	0
20-24	1,310,000	1,310,000	0
25-29	1,310,000	1,310,000	0
30-34	1,310,000	1,310,000	0
35-39	1,310,000	1,310,000	0
40-44	1,310,000	1,310,000	0
45-49	1,310,000	1,310,000	0
50-54	1,310,000	1,310,000	0
55-59	1,310,000	1,310,000	0
60-64	1,310,000	1,310,000	0
65-69	1,310,000	1,310,000	0
70-74	1,310,000	1,310,000	0
75-79	1,310,000	1,310,000	0
80 and above	1,310,000	1,310,000	0
<b>Total</b>	<b>13,100,000</b>	<b>13,100,000</b>	<b>0</b>



CVC Daily Status

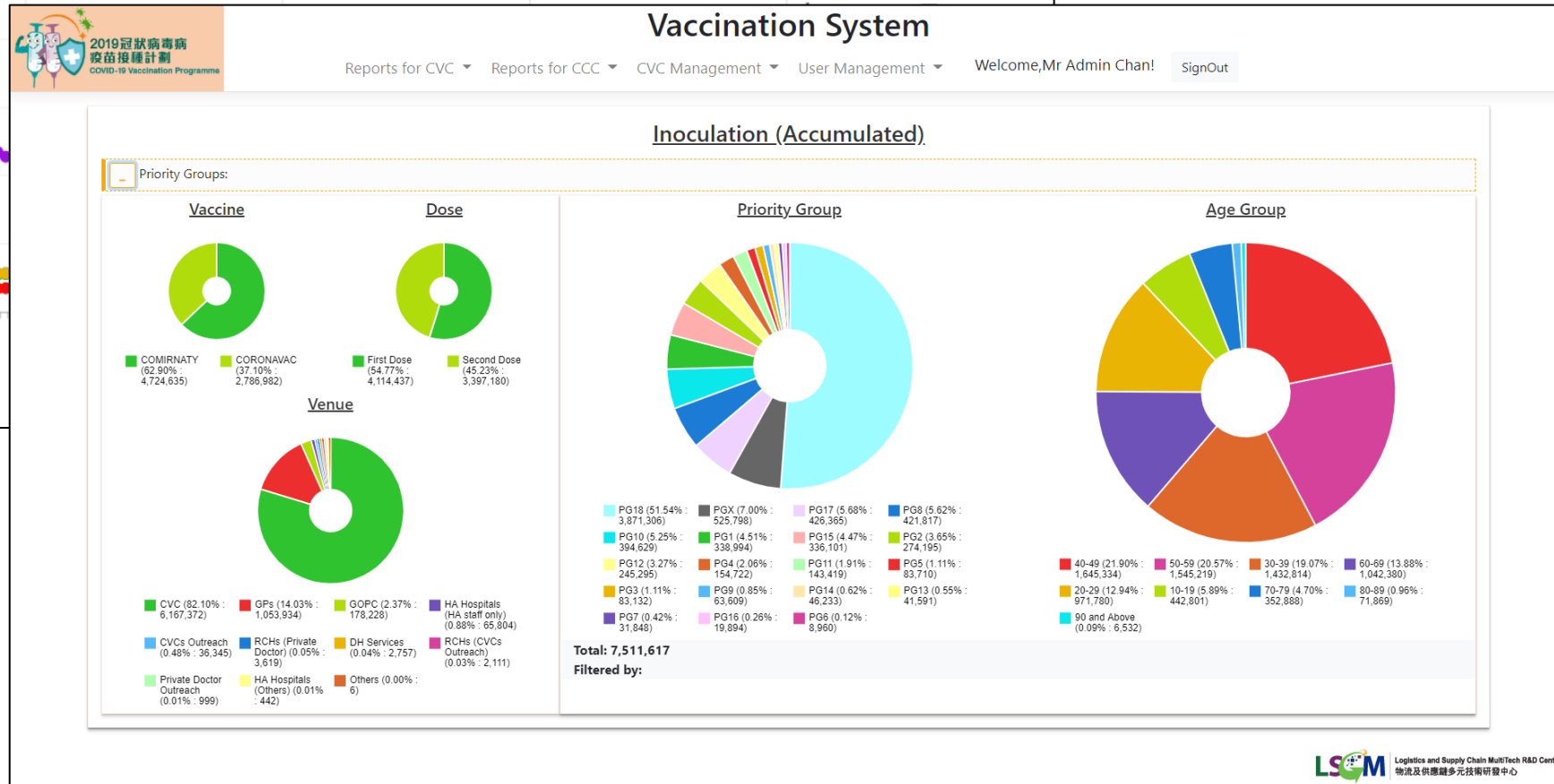
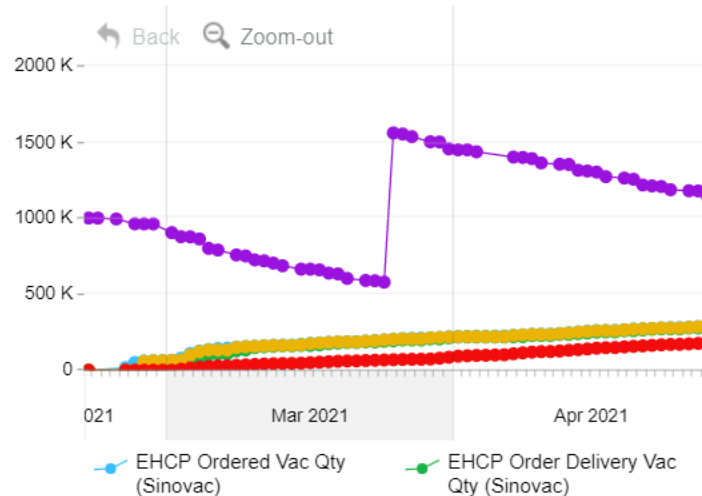
CVC	Booked	Inoculated
CVC001: Hong Kong Central Library (Sheungshun Gallery)	104	104
CVC002: Kowloon Bay Sports Centre	252	252
CVC003: Tuen Mun Road Sports Centre	238	238
CVC004: Kwun Chung Sports Centre	188	188
CVC005: Tin Hau Sports Centre	83	83
CVC006: Yau Oi Sports Centre	8	8
CVC007: Queen Mary Sports Centre	8	8
CVC008: Tsing Yi Sports Centre	8	8



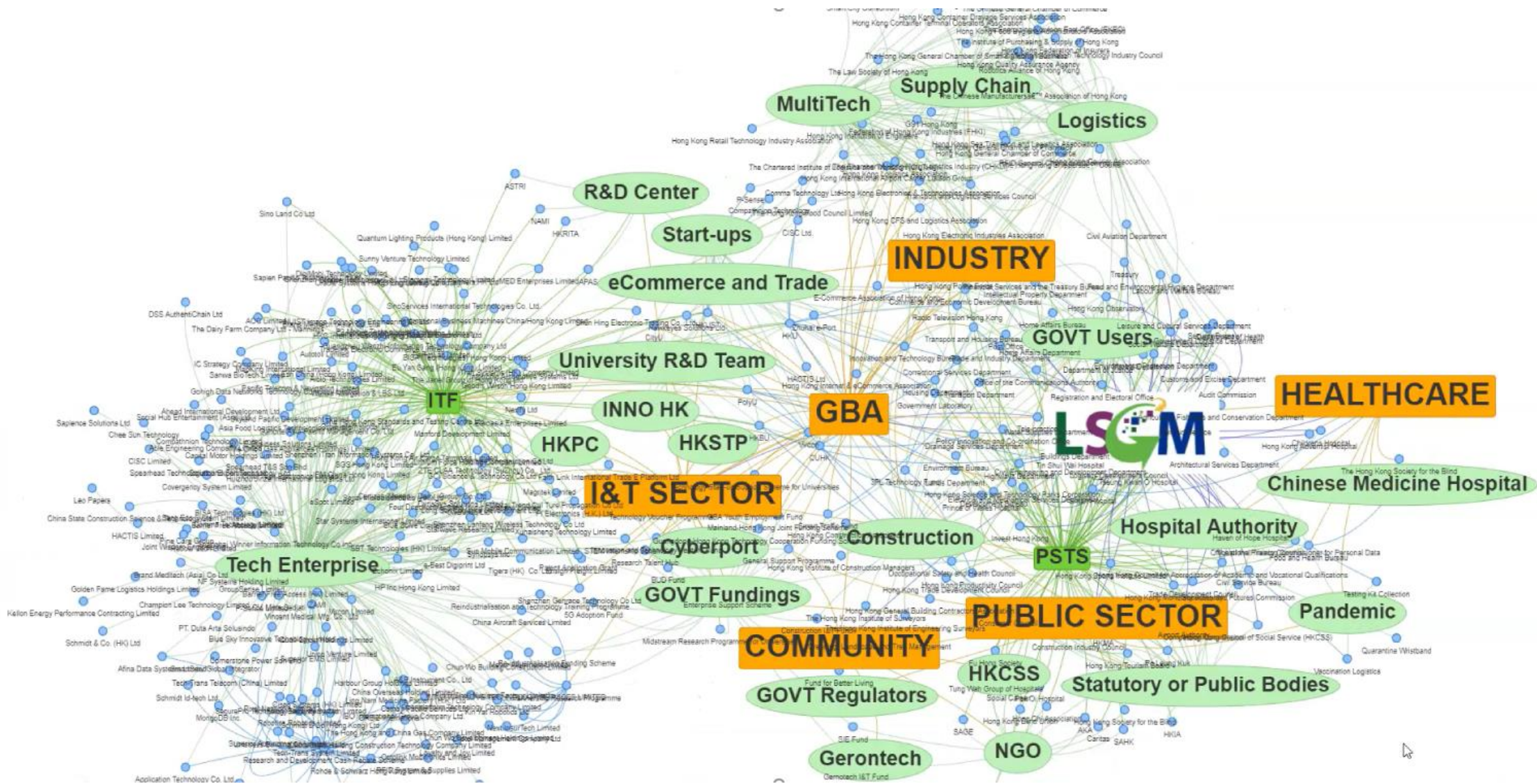
# Vaccination Work – Management Report and Dashboard

## Data-Driven Monitor & Control

### D. EHCP Vaccine Order, Delivery, Inoculation and Stock Overview



# LSCM 15<sup>th</sup> Anniversary!



# Hong Kong Innovation and Technology Ecology

## Research

*Universities,  
R&D Centres...*

## Innovation & Technology

*InnoHK Centres, Startups,  
Tech Companies...*

## Government

*Bureaux, Departments,  
Public Bodies...*

## Industry

*Trade Associations,  
MSMES, MNCs...*

Research Collaboration

Industry Bridging

ITF Funding Support

Technology Showcase  
and Publicity

Technology Transfer  
and Productization

Novel and Innovative  
Technology

Proof-of-Concept Pilots

Technology Verification

Industry Upgrading

Tech and IP Acquisition

***Fully Committed to Support Hong Kong I&T Development!***



# Summary

*Innovation and Technology*

*Collaboration*

*Gratitude*

*Hope*

**Thank you!**  
[www.lscm.hk](http://www.lscm.hk)