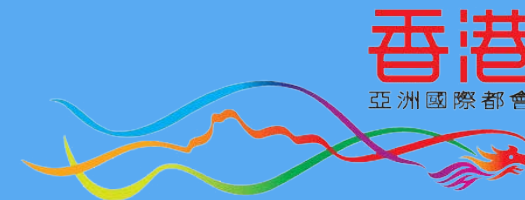




Office of the Government Chief Information Officer
The Government of the Hong Kong Special Administrative Region



Tapping Innovation & Technology in the Prevention and Control of COVID-19 in Hong Kong, China

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*Together,
We Fight the Virus!*

4 May 2020

Office of the Government Chief Information Officer

responsible for formulating information technology strategies, programmes and measures, to help sustain Hong Kong, China's position as Asia's leading digital city.



Fight the Virus in HK, China

- Under the directive of the inter-departmental Steering Committee cum Command Centre chaired by the Chief Executive
- The application of innovation and technology has played an important part in the control and prevention of the novel COVID-19 in Hong Kong, China.
- Through our concerted efforts in tackling COVID-19, we have managed to keep the number of confirmed cases at a relatively low level in this pandemic, and prevent community outbreak.



Fight
the Virus
Together

Support
Hong Kong
Together



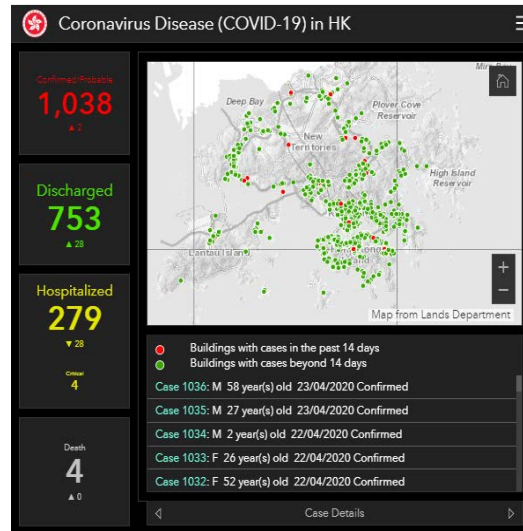
The Government of the
Hong Kong Special Administrative Region

Application of I&T to Combat COVID-19

The Government has been employing various local R&D results and I&T solutions to support our anti-epidemic efforts on different fronts.



Tech support on compulsory home quarantine



Disseminating latest epidemic information

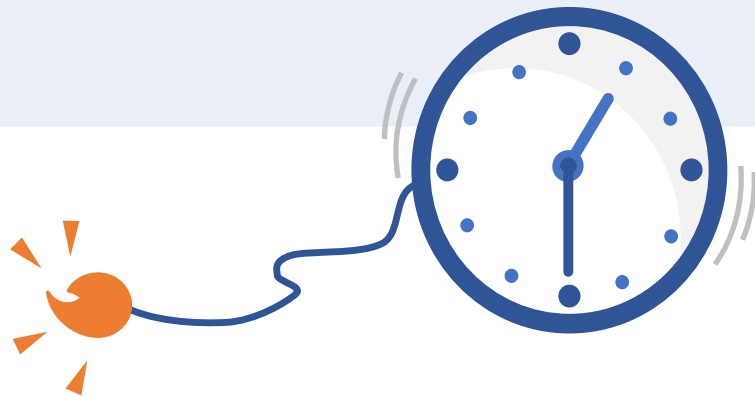


Use of Local R&D Results and New Technologies

Collaboration among Government, R&D centre, tech start-up and university, Mainland, local / overseas solution providers & manufacturers

Home Quarantine Timeline

Date	Event	OGCIO's response
Jan 29		OGCIO commenced work to support Home Quarantine right after the Chinese New Year holiday
Feb 4	Compulsory home quarantine requirement for Hubei returnees	Made ready 500 handmade e-wristband & IT monitoring system within a week
Feb 8	Extended the 14-day compulsory home quarantine to all the people entering Hong Kong, China from the Mainland (new subsidiary legislation Cap. 599C)	Monitored by location sharing through Whatapps or Wechat, supported by spot check video calls and surprise home visits Set up Centre 1 to monitor location sharing Set up service desks at 3 control points
Feb 24		Set up Centre 2 to support increasing workload on location sharing



Home Quarantine Timeline

Date	Event	OGCIO's response
Mar 9		Introduced "StayHomeSafe" mobile app
Mar 14	Extended compulsory quarantine orders (under the Prevention and Control of Disease Regulation Cap. 599A) to people arriving in Hong Kong, China who have been in Italy, France, Germany, Japan in the past 14 days	Deployed mobile app + e-wristband at Airport control point
Mar 17	Further extended compulsory home quarantine to people arriving in Hong Kong, China who have been in Korea and Schengen Area in Europe in the past 14 days under Cap. 599A	
Mar 19	Compulsory home quarantine regulation (Cap. 599E) came into force mandating persons arriving in Hong Kong, China from all foreign places outside China to undergo quarantine	Deployed mobile app + QR code monitoring strap to cope with huge demand Set up Centre 3 to support mobile app monitoring
Mar 25	The home quarantine requirement has been expanded to cover all arrivals from all places at all boundaries.	Deployed mobile app + e-wristbands Setup service desks at Airport to support app installation
Mar 31		Introduced disposable e-wristbands at Airport for all persons returning from foreign places outside China



Home Quarantine Timeline

Date	Event	OGCIO's response
Apr 4		Set up Centre 4 to support data analysis for case investigation and spot checking
Apr 8	Wuhan lifted outbound travel restrictions, home quarantine arrangement for returnees from Wuhan and Hubei Province	Deployed mobile app + disposable e-wristband for all returnees via Airport, and Hubei returnees from all 3 control points
Apr 14		Deployed mobile app + disposable e-wristband for all returnees via all 3 control points

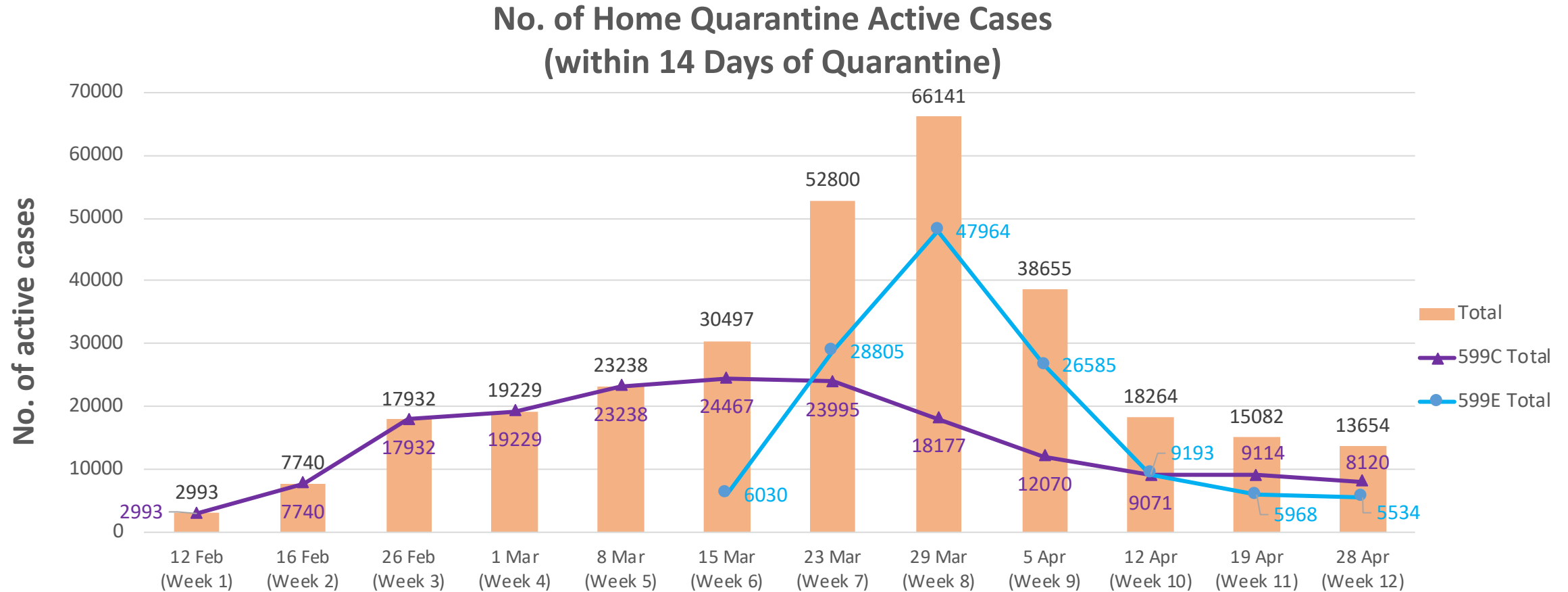


Home Quarantine in Numbers

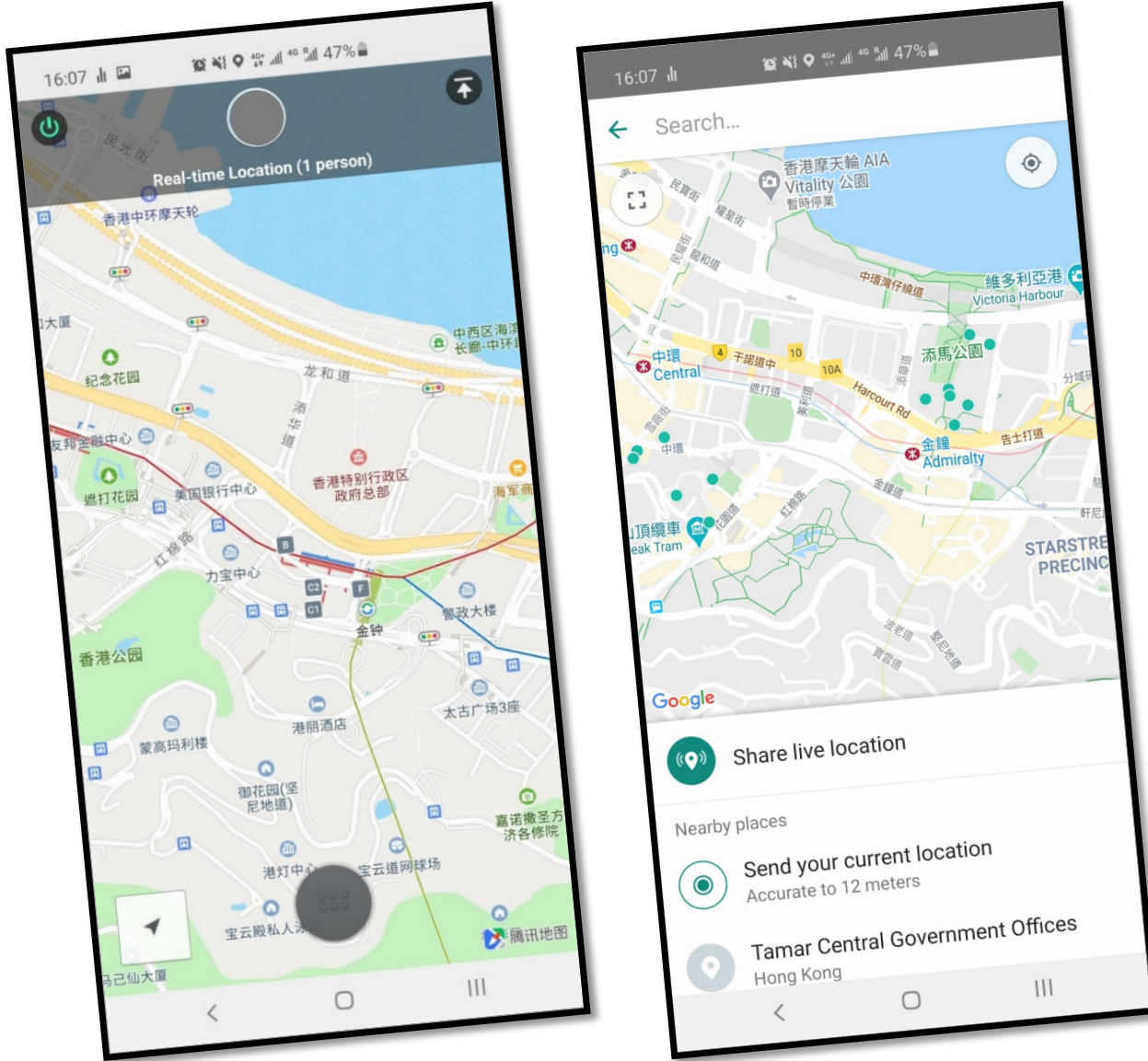
People under home quarantine (cumulative since 4 Feb):	>160 000
• No. of people quarantined under Cap. 599A:	~1 000
• No. of people quarantined under Cap. 599C:	>98 000
• No. of people quarantined under Cap. 599E:	>65 000
No. of wristbands issued:	>75 000
No. of people under location sharing	>80 000
No. of spot check calls (including video calls)	>180 000

(as at end April 2020)

Home Quarantine in Numbers



Location Sharing



- Monitored over 80,000 people under home quarantine
- Simple arrangement
- Convenient to users as most returnees from the Mainland or overseas are familiar with WhatsApp or WeChat mobile app
- Only a location on a 2D map
- Supplement with spot check by video calls
- Labour-intensive, need daily contact to each and every confinee for location sharing

Electronic Wristbands & Geo-fencing Technologies

- Developed with Logistics and Supply Chain MultiTech R&D Centre (“LSCM”)
- Wristband using Bluetooth Low Energy (“BLE”) technology
- Good for in-door environment
- Coupled with smart phone app with geo-fencing technology
- Smart phone must connect to home power supply
- Wristband cannot be removed at will
- If wristband is damaged or lost signal, smart phone is off, removed from home or power supply disconnected, the central monitoring system will be alerted
- Wristband is waterproof, rechargeable and reusable
- Do not track people’s location or movement, safeguarding privacy



“StayHomeSafe” Mobile App

- Developed by local tech startup at Hong Kong Science Park, Compathnion Technology Limited
- Technology innovation of the Hong Kong University of Science and Technology
- Detect and analyse change of wireless signals and their strengths (WiFi, Bluetooth, GPS, telecom, etc.) in the environment using AI and big data analytics
- Paired with disposable e-wristband and with the BLE as prime signal
- Convenient to apply, dispose after use
- Over 75,000 installed since March 2020

Disposable BLE
e-wristband



QR Code
monitoring strap



14-day Home Quarantine



Upon arrival, staff will help put on a wristband and install the SHS app



During the quarantine period, the SHS app will detect and analyse the environmental signals



If quarantined person is found to have left the dwelling place without permission, the Government will take further actions



Quarantined person can take shower, but should avoid soaking the wristband in water for too long



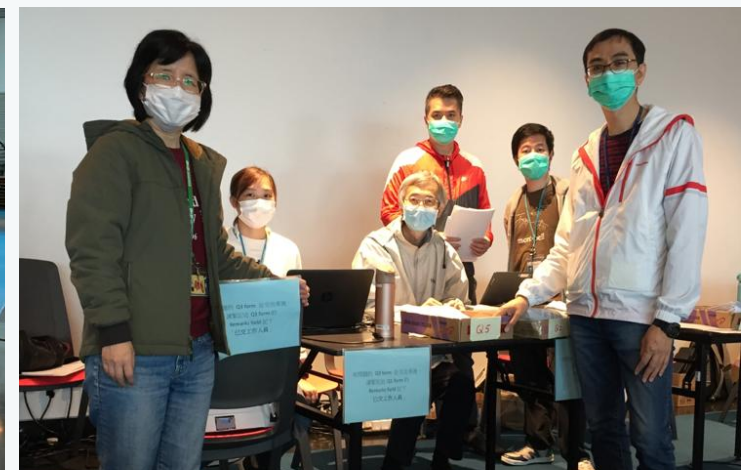
Upon expiry of the quarantine period, quarantined person can uninstall the SHS app and remove the wristband. A gentle SMS reminder will be sent on the last day of quarantine.

Monitoring Centres

Centre 1 (8 Feb) – location sharing & spot checking



Centre 2 (24 Feb) - location sharing & spot checking



Monitoring Centres

Centre 3 (19 Mar) – Helpdesk & mobile app user support



Centre 4 (4 Apr) – Data analysis and case investigation



Service Desk at 3 Control Points

HK International Airport



HK-Zhuhai-Macau Bridge



Shenzhen Bay



e-Wristband Support via Home Visits



OGCIO Home Quarantine Operation at a Glance

- Support by over 700 OGCIO staff and civil service volunteers (serving and retired) on 7-day shift operation
- Assist people in wearing wristbands and install mobile app at control points
- Manage user support helpdesk (phone, SMS, email) on various tech solutions
- Conduct daily location sharing and spot check calls to ensure people under quarantine are staying at their dwelling places
- Perform data analysis of potential non-compliance cases
- Operate IT systems for data capturing, analysis, mobile app and e-wristband

Home Quarantine with the aid of Technologies and People

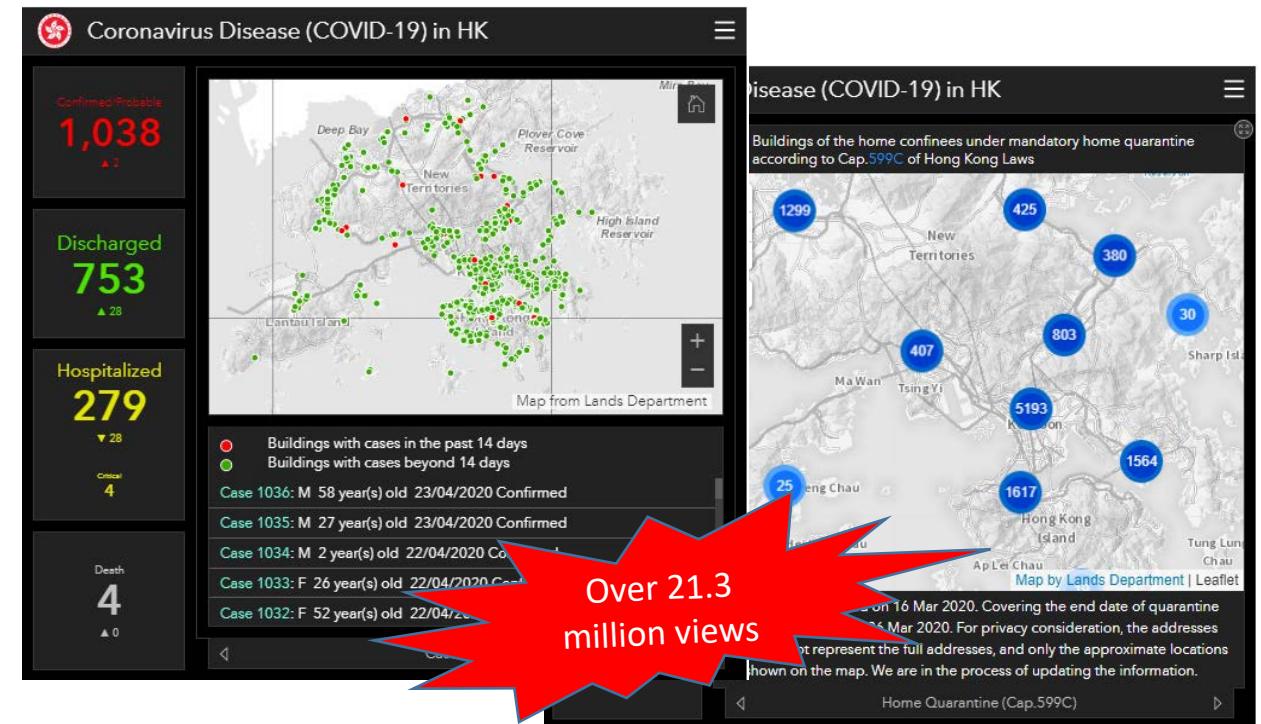


Interactive Map Dashboard on the Latest Situation of COVID-19 in Hong Kong, China



<https://chp-dashboard.geodata.gov.hk>

Interactive Map Dashboard



as Open Data and
APIs in



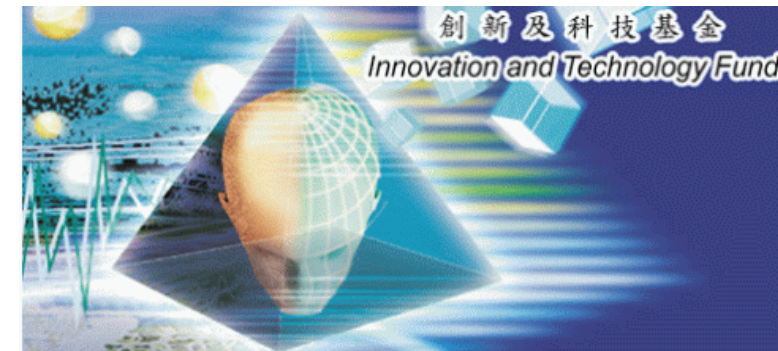
Use of Local R&D Results



Nanofiber technology developed by the Nano and Advanced Materials Institute (NAMI)



創新科技署
Innovation and
Technology Commission



A special call under Public Sector Trial Scheme (PSTS) Under Innovation and Technology Fund was launched on 9 March 2020 to combat the COVID-19 epidemic

Use of New Technologies



發展局
Development Bureau



Development Bureau has utilised Modular Integrated Construction (“MiC”) for the speedy construction of additional quarantine facilities



醫院管理局
HOSPITAL
AUTHORITY



Hospital Authority is testing the use of meal delivery robots developed by a local start-up at the Science Park

機電工程署
EMSD



To provide more hospital wards that can serve patient isolation purpose, a Mobile Modular “High-Efficiency Particulate Air” (HEPA) Unit was jointly developed by Hospital Authority, Electrical and Mechanical Services Department and the industry

同心抗疫 *Together,
We Fight the Virus!*



政府資訊科技總監辦公室

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