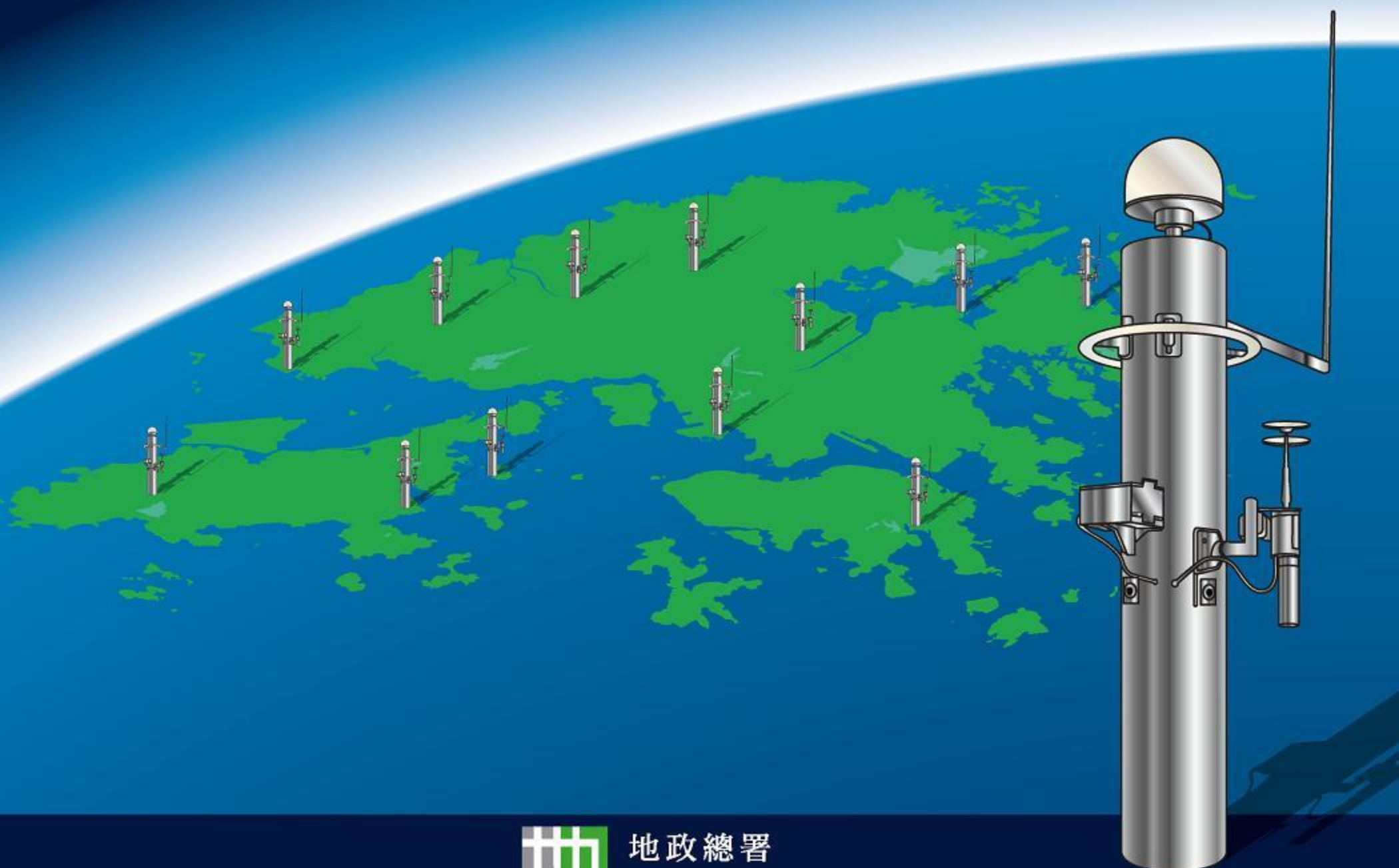




**The Hong Kong Satellite Positioning
Reference Station Data Services**

**香港衛星定位參考站
數據服務**



地政總署
Lands Department

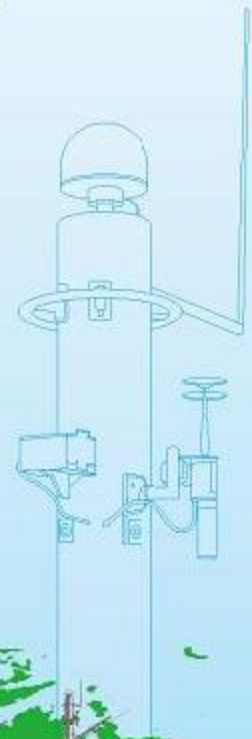


The Hong Kong Satellite Positioning Reference Station Data serves you

- Improve positioning accuracy
- Reduce operation cost
- Enhance efficiency
- Increase productivity
- Improve management capability
- Deliver value added services to your customers
- Improve quality of life

香港衛星定位參考站數據為你服務

- 優化定位精度
- 減低運作成本
- 提高效率
- 提升生產力
- 加強管理能力
- 為客人提供增值服務
- 改善生活質素



Application of satellite positioning

Land surveying

(Control survey, topographic survey, land boundary survey, mapping)

Engineering and construction

(Major infrastructure project, construction of railway, highway, bridge, drainage works)

Land resource management, environmental management, facility management

(Field data collection, facility inspection)

Town planning

(Land use survey)

Deformation monitoring

(Bridge, slope, large building)

Earth science

(Plate movement of the earth, sea level changes)

Weather studies

(Rainfall forecast)

Emergency service and disaster response

(Deployment of personnel and resources)

Navigation and management of vehicles

(Intelligent transportation, logistic management, container management)

Mobile phone satellite positioning and information guide

(Personal navigation and consumer information)

衛星定位的應用

土地測量 (控制測量、地形測量、地籍測量、地圖測繪)

工程建設 (大型基建、鐵路、公路、橋樑、渠務工程)

土地資源管理、環境管理、設施管理 (現場數據採集、設施巡查檢驗)

城市規劃 (土地用途調查)

變形監測 (橋樑、斜坡、大型建築物)

地球科學 (地球板塊運動、海平面變化)

氣象研究 (暴雨預報)

應急救災 (人員物資調度)

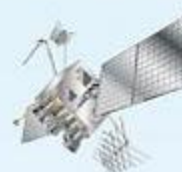
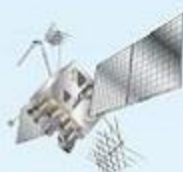
導航、車輛監控 (智能交通、物流管理、貨櫃運輸管理)

流動電話衛星定位及資訊指南 (個人導航系統、消費資訊)

The Effect of Using Satellite Positioning Reference Station 衛星定位參考站的作用

Using one satellite positioning receiver to determine position, the accuracy is 10 to 20 metres.

利用一台衛星定位接收機能測定位置，精度可達10米至20米



Positioning satellites broadcasting signals
定位衛星發送訊號

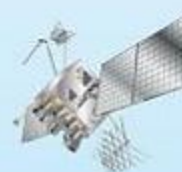
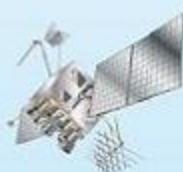
**10 to 20 metres
accuracy
10 米至 20 米精度**



Satellite positioning receiver
衛星定位接收機

By using two receivers, users can improve the accuracy to 1-2 metres level or centimetre level.

利用兩台接收機可提升定位精度至1米至2米級或厘米級



One receiver is placed on a reference point with accurately known position (**the reference station**)

將一個接收機裝於一個已知精確位置的點上
(參考站)



Another receiver is placed on the point with unknown position.
將另外一個接收機裝於一個未知位置的點上

**1 to 2 metres or
centimetre level
accuracy**

1 米至 2 米級、厘米級精度

The Hong Kong Satellite Positioning Reference Station Network

The Positioning Infrastructure

香港衛星定位參考站網 定位基礎設施



Reference Station
參考站



Users can use only one receiver and the data of the reference station to measure accurate position
用戶只需用一台接收機和參考站數據便可作準確的定位



Hong Kong Satellite Positioning Reference Station Network
香港衛星定位參考站網

The Lands Department has set up 12 reference stations covering the territory of Hong Kong. This system is the Hong Kong Satellite Positioning Reference Station Network (SatRef). The reference stations receive satellite positioning data continuously.

Users can use the satellite data collected at the reference stations to perform accurate positioning without setting up their own reference station.

The SatRef is the satellite positioning infrastructure of Hong Kong. It helps the users to save time, reduce cost and improve positioning accuracy.

地政總署建立了12個參考站，覆蓋全香港。這系統名為香港衛星定位參考站網 (SatRef)。參考站不停地接收衛星定位數據。

用戶可使用參考站的數據作準確定位，因而不需要自己設置參考站。

SatRef 是香港的定位基礎設施，它幫助用戶節省時間、減低成本、優化定位精度。

The Hong Kong Satellite Positioning Reference Station Data Services

香港衛星定位參考站數據服務



Hong Kong Satellite Positioning Reference Station Network
香港衛星定位參考站網



Satellite data received at the reference stations are sent to the data centre
接收到的衛星數據由參考站傳到數據中心

Data Centre
數據中心



Control Centre
控制中心

The processed satellite data are transmitted to the users through Internet and mobile phone network
經過處理的衛星數據經互聯網及無線電話網絡傳送到用戶



User's computer
(download the reference station data through Internet)
用戶的電腦（經互聯網下載參考站數據）



Professional grade receiver
專業接收機



Professional grade receiver
專業接收機



Consumer grade receiver
大眾市場級接收機



Mobile phone with satellite positioning function
設有衛星定位功能的流動電話

How to get the reference station data

You can visit the following website of Lands Department and register as a user of the data services.

<http://www.geodetic.gov.hk/SatRef>

If you need any assistance, you can contact us:

Email : geodetic@landsd.gov.hk

Tel. : (852) 2231 3497

Fax : (852) 2116 0778

What type of data service is available

Being a registered user, you can obtain the following data of the Hong Kong Satellite Positioning Reference Station Network:

1. RINEX Data Service

For highly accurate and reliable applications (using the data for post processing):

You need to use the Receiver Independent Exchange Format (RINEX) Data.

2. Network RTK Data Service

For centimetre-level accuracy real-time applications :

You need to use the Network Real Time Kinematic (Network RTK) Data.

3. DGPS Data Service

For metre-level accuracy real-time applications :

You need to use the Differential Global Positioning System (DGPS) Data.

怎樣取得參考站數據

你可以到下列地政總署的網頁，登記成為使用數據服務的用戶。

<http://www.geodetic.gov.hk/SatRef>

如需要協助，可聯絡我們：

電郵：geodetic@landsd.gov.hk

電話：(852) 2231 3497

傳真：(852) 2116 0778

有甚麼數據服務可提供

已登記的用戶，可以取得以下香港衛星定位參考站網的數據：

1. RINEX 數據服務

高精度、高可靠性的應用 (使用數據作後處理):

可使用 Receiver Independent Exchange Format (RINEX) 數據

2. 網絡實時動態數據服務

厘米級精度的實時定位應用：

可使用網絡實時動態 (網絡 RTK) 數據服務

3. 差分定位數據服務

米級精度的實時定位應用：

可使用差分定位 (DGPS) 數據服務



Survey and Mapping Office
Lands Department
地政總署測繪處

