



積極準備迎接5G時代

在多條頻帶提供5G頻譜

隨着全球及區域層面劃一5G頻譜編配的工作完成，以及商用5G設備和消費者產品開始推出，市場預期商用5G服務將於2020年內面世。憑藉高速、大容量、超可靠、大規模連接和低時延等超卓的技術特性，5G服務將革新流動服務用戶的使用體驗。業界普遍預期，5G將為各種商業服務和智慧城市的應用開闢巨大發展潛力。

在2018年5月至9月期間，通訊辦協助通訊局聯同商經局局長分別就3.5吉赫頻帶、26吉赫及28吉赫頻帶、3.3吉赫以及4.9吉赫頻帶的頻譜編配、指配安排和相關頻譜使用費事宜，進行了三次公眾諮詢。經全面考慮在公眾諮詢期間收到的所有看法和意見，商經局局長和通訊局在2018年12月13日發布了三份聯合聲明，公布他們分別就上述頻帶內的頻譜編配和指配安排及相關頻譜使用費所作的決定。

扼要言之，在上述多條頻帶內額外供應的約4 500兆赫頻譜由2019年4月起可用作提供5G服務。在所有這些頻譜中，由於高頻帶頻譜供應充足，故在26吉赫及28吉赫頻

帶內4 100兆赫的頻譜以行政方式推出市場；在3.3吉赫、3.5吉赫及4.9吉赫頻帶內合共380兆赫的頻譜，由於很可能有競爭性需求，將於2019年最後一季以拍賣方式指配。

重新編配3.5吉赫頻帶

3.5吉赫頻帶現正用於固定衛星服務。通訊局決定由2020年4月起重新編配該頻帶予流動服務。一如2018年3月28日發出的《通訊局聲明》所載，為了讓在同一頻帶和相鄰頻帶操作的現有衛星站和未來的流動基站並存，因此必須在重新編配安排的生效日期前實施相關緩解措施。

有關緩解措施包括在遙測、追蹤及控制在軌持牌衛星的現有衛星地球站（遙測、追蹤及控制站）一帶設立限制區。為回應流動業界對限制區的關注，通訊辦於2018年6月在轄下的無線電頻譜及技術標準諮詢委員會成立了一個工作小組，研究在限制區內設置在3.5吉赫頻帶內操作的無線電基站的技術安排。工作小組成員為相關持份者，包括流動網絡營辦商、遙測、追蹤及控制站的營辦商、香港科技园和香港應用科技研究院的代表。工作小組研究不同的緩解措施和進行實地測試，以核實有關措施是否能讓限制區

Active Preparations for the 5G Era

Making 5G Spectrum Available in Multiple Frequency Bands

With the global and regional harmonisation of 5G spectrum allocations and the start of supply of commercial 5G equipment and consumer products, the market expects commercial 5G services to be available at some time in 2020. 5G services will revolutionise the mobile user experience empowered by its excellent technical capabilities for high speed, high capacity, high reliability, massive connectivity, and low latency communications. It is widely expected that 5G will open up vast potential for various commercial and smart city applications.

Between May and September 2018, OFCA assisted the CA in conducting three separate joint public consultations with SCED in relation to frequency allocation, assignment arrangements and the related spectrum utilisation fee (SUF) for the spectrum in the 3.5 GHz band, 26 GHz and 28 GHz bands, 3.3 GHz and 4.9 GHz bands. Having thoroughly considered all the views and comments received in the public consultations, SCED and the CA promulgated three joint statements on 13 December 2018 to announce their respective decisions on the frequency allocation and assignment arrangements for the spectrum in these frequency bands, as well as the related SUF.



In gist, an additional total amount of about 4 500 MHz of spectrum in multiple frequency bands has been made available starting from April 2019 for the provision of 5G services. Among the total, 4 100 MHz of spectrum in the 26 GHz and 28 GHz bands are put to the market by way of administrative assignment in view of the ample supply of spectrum in the high frequency

bands. 380 MHz of spectrum in the 3.3 GHz, 3.5 GHz and 4.9 GHz bands will be assigned by way of auction in the last quarter of 2019 as there are likely to be competing demands.

Re-allocation of the 3.5 GHz Band

At present, the 3.5 GHz band is being used for fixed satellite services. The CA has decided to re-allocate the band to mobile services starting from April 2020. As set out in the CA Statement issued on 28 March 2018, to enable the co-existence of the existing satellite stations and future mobile stations operating in the same and adjacent bands, relevant mitigating measures should be adopted before the effective date of the re-allocation.

Among others, restriction zones will be set up around the existing satellite earth stations for telemetry, tracking and control of the licensed satellites in orbit (TT&C stations). To address the concern raised by the mobile industry on the restriction zones, OFCA established a working group in June 2018 under its Radio Spectrum and Technical Standards Advisory Committee to study technical arrangements for the deployment of radio base stations operating in the 3.5 GHz band within the restriction zones. The working group comprises relevant stakeholders including representatives of mobile network operators, operators of the TT&C stations, Hong Kong Science and Technology Park, and Hong Kong Applied Science and Technology Research Institute. The working group explored different mitigating measures and conducted field trials to verify the feasibility of such measures to allow controlled co-existence of the TT&C stations and radio base stations inside the restriction zones. The CA endorsed a report submitted by the working group with recommended guidelines on the implementation of mitigating measures for CA's consideration in June 2019. Relevant information and requirements have been included in the Information Memorandum for the auction of the spectrum in the 3.5 GHz band.

Assignment of the Spectrum in 26 GHz and 28 GHz Bands

Among the 4 100 MHz of spectrum in the 26 GHz and 28 GHz bands, 3 700 MHz of spectrum has been set aside as non-shared spectrum for the provision of large scale public mobile services. OFCA invited applications for administrative spectrum

內的遙測、追蹤及控制站和無線電基站在特定的情況下並存。通訊局已於2019年6月通過工作小組提交予通訊局考慮的報告，包括實施緩解措施的建議指引。相關資料和規定已載於有關3.5吉赫頻帶頻譜拍賣的《資訊備忘錄》內。

指配26吉赫及28吉赫頻帶內的頻譜

在26吉赫及28吉赫頻帶內4 100兆赫的頻譜當中，有3 700兆赫的頻譜已預留作非共用頻譜，以提供大規模公共流動服務。通訊辦於2018年12月邀請有興趣人士提交該兩條頻帶頻譜的行政指配申請，最終接獲現有流動網絡營辦商提交共三份申請。2019年3月，通訊辦決定根據三名申請人的申請向各人要約指配400兆赫的頻譜。每名申請人均於2019年4月獲發綜合傳送者牌照，以獲指配頻譜用作提供大規模5G服務。

通訊辦已經在26吉赫及28吉赫頻帶內預留400兆赫的頻譜，並會以按地區劃分的共用模式指配，以供在各指定地點（例如大學校園、工業邨、機場、科技園等）提供地區性無線寬頻服務。有關共用安排可促進創新5G和智慧城市應用的發展。

600兆赫及700兆赫頻帶

通訊局計劃在終止模擬廣播後，於2021年內在600兆赫（617–698兆赫）及700兆赫（703–803兆赫）頻帶內騰出最多160兆赫的頻譜，用作提供室內公共流動服務，當中700兆赫頻帶內的20兆赫頻譜可供戶外使用。與內地當局進一步協調後，700兆赫頻帶內或會有更多頻譜可供5G服務作戶外使用。

供5G使用的新頻帶

通訊辦會繼續致力選定更多頻譜，以支持香港發展5G服務。通訊辦尤其會密切留意於2019年年底舉行的世界無線電通信大會的結果，包括在24.25吉赫至86吉赫之間確定用於5G服務的頻帶。屆時，通訊局會視乎市場需求，考慮向業界提供這些新確定的頻譜。

推動業界進行5G技術和應用測試

為協助業界作好準備，推出5G服務，通訊局截至2019年3月31日，向流動網絡營辦商及設備供應商合共發出了25個測試許可證，臨時指配頻譜供他們免費作測試用途。通訊辦歡迎其他有興趣人士申請進行更多5G測試。

便利5G網絡鋪設

流動網絡營辦商在香港推展5G服務，將需設置較以往幾代流動服務更多的無線電基站。為便利5G網絡迅速和有效地鋪設，通訊辦於2019年3月推行先導計劃，開放超過1 000個合適的政府場所予流動網絡營辦商裝設無線電基站，並簡化相關審批程序。通訊辦已成立專責小組，負責在有關事宜上協調流動網絡營辦商與相關政府部門，並發出《在選定政府場地安裝無線電基站先導計劃的申請須知》，闡釋該計劃下的相關原則、要求和簡化的申請及審批程序。該計劃廣受業界歡迎，截至2019年6月底，流動網絡營辦商已選定293和672個政府場所，將分別於2019年年底及2020年前裝設無線電基站。通訊辦將參照所得的經驗於2019年年底檢討該計劃，以期把計劃擴展至其他合適的政府場所。

通訊辦亦一直與業界緊密合作，物色適合設置無線電基站的街道裝置及設施，例如公眾收費電話亭、巴士站上蓋等；並與相關政府部門協調，以便利營辦商為於這些街道裝置及設施裝設無線電基站進行技術測試，以及制訂相關申請程序和訂定審批要求。

促進無線物聯網服務的發展

物聯網是新興技術，提供通訊平台及服務，讓各式各樣的互聯智能裝置無須經人手操作而能自動產生、交換和處理數據。通訊局在2017年12月就使用920–925兆赫共用頻帶提供無線物聯網平台及服務設立了新牌照制度，至今已發出三個無線物聯網牌照。另一方面，現有流動網絡營辦商亦可使用根據綜合傳送者牌照獲指配的頻譜，採用流動

assignment in the two bands in December 2018, and a total of three applications from incumbent MNOs were received. In March 2019, OFCA decided to offer the assignment of 400 MHz of spectrum to each of the three applicants as per their applications. A Unified Carrier Licence (UCL) was granted to each of them in April 2019 to effect the assignment of spectrum for the provision of large scale 5G services.

400 MHz of spectrum in the 26 GHz and 28 GHz bands is set aside and will be assigned on a geographically shared basis for providing localised wireless broadband services in different specified locations such as university campuses, industrial estates, the airport and technology parks, etc. Such a sharing arrangement will facilitate the development of innovative 5G and smart city applications.

600 MHz and 700 MHz Bands

The CA plans to make available a maximum of 160 MHz of spectrum in the 600 MHz (617 – 698 MHz) and 700 MHz (703 – 803 MHz) bands after ASO for the provision of indoor public mobile services within 2021, including 20 MHz spectrum in the 700 MHz band for outdoor use. More spectrum in the 700 MHz band may be used for outdoor use by 5G services upon further coordination with the Mainland authorities.

New Frequency Bands for 5G

OFCA will continue its efforts in identifying more spectrum to support the development of 5G services in Hong Kong. In particular, OFCA will keep in view the outcome of the World Radiocommunication Conference to be convened in end 2019 on, among others, identification of frequency bands between 24.25 GHz and 86 GHz for 5G services. Subject to market demand, the CA will then consider making available this newly identified spectrum to the industry.

Facilitating the Industry to Conduct Trials for 5G Technologies and Applications

To better prepare for the launch of 5G services, as of 31 March 2019, the CA had issued a total of 25 trial permits to mobile network operators and equipment vendors with temporary, free-of-charge spectrum assignment for test purposes. OFCA

welcomes applications from other interested parties for conducting further 5G trials.

Facilitating the Rollout of 5G Networks

For deployment of 5G services in Hong Kong, mobile network operators will need to establish a larger number of radio base stations as compared with previous generations of mobile services. To facilitate the expedient and effective rollout of 5G networks, OFCA has since March 2019 launched a pilot scheme to open up more than 1 000 suitable government premises for mobile network operators to install radio base stations with a streamlined approval process. OFCA has set up a dedicated team to coordinate with mobile network operators and relevant government departments on the matters concerned, and issued the “Guidance Notes for Submission of Applications under the Pilot Scheme for Installation of Radio Base Stations at Selected Government Venues” to set out the principles, requirements and streamlined procedures in respect of the applications under the scheme. The scheme has been well received by the industry. By the end of June 2019, mobile network operators had selected about 293 and 672 government premises for installation of radio base stations by end 2019 and 2020 respectively. OFCA will review the scheme in late 2019 in the light of experience gained with a view to extending the scheme to other suitable government premises.

OFCA has also been working closely with the industry to identify suitable street level furniture and facilities for the installation of radio base stations, such as at public payphone kiosks, bus passenger shelters etc., and is coordinating with relevant government departments to facilitate the conduct of technical trials, formulation of relevant procedures and sorting out of approval requirements for use of these street furniture and facilities to install radio base stations.

Facilitating Development of Wireless Internet of Things Services

Internet of Things is an emerging technology that enables the provision of communications platforms and services for interconnected devices to generate, exchange and consume data with minimal human intervention. Since the creation of a

技術（例如窄頻帶物聯網）提供無線物聯網服務。隨着綜合傳送者牌照下引入的新無線物聯網裝置收費由2019年1月31日起生效，每個在該牌照下運作的無線物聯網裝置的收費大幅調低至二元，與無線物聯網牌照下的收費水平相同。通訊辦會繼續支援通訊局促進無線物聯網服務在香港的發展，以及使該服務的供應具競爭性。



重新指配在900兆赫及1800兆赫頻帶內的頻譜

在900兆赫頻帶內50兆赫的頻譜及在1800兆赫頻帶內150兆赫的頻譜的現有指配期將分別於2021年1月及9月屆滿。四名現有頻譜受配者於2018年9月獲賦予優先權，各獲暫定指配20兆赫的頻譜。至於餘下120兆赫的頻譜亦已於2018年12月舉行的拍賣中，由該四名現有頻譜受配者以總額60億元的頻譜使用費成功投得。連同透過優先權以行政方式重新指配1800兆赫頻帶頻譜所涉及的43.2億元頻譜使用費，頻譜受配者須就為期15年的新指配期繳付合共103.2億元的頻譜使用費。

為確保有關頻譜於2021年移交時可順利過渡，通訊辦於2019年5月成立技術工作小組，當中包括所有現有及新頻譜受配者的代表，以協調重新配置現有網絡及／或鋪設新網絡基礎建設的相關技術安排。

政府進行電訊規管架構檢討

在2018／19年度，通訊辦支援商經局檢討《電訊條例》下的電訊規管架構，以迎接5G及物聯網科技的來臨，並便利業界營商。通訊辦會繼續就商經局所進行的電訊規管架構檢討，以及因應檢討期間收到的持份者意見而將會對《電訊條例》作出的法例修訂，為通訊局提供所需支援。同時，通訊辦亦會協助通訊局引入各種簡化的行政措施，以進一步便利業界營運。

檢討要約提供電訊服務類別牌照制度

通訊局依據《電訊條例》第8(1)(aa)條設立的類別牌照授權任何符合牌照內訂明的準則或條件的人士，在沒有設置、操作或維持任何電訊設備的情況下向公眾要約提供電訊服務。鑑於新科技面世，加上市場參與者採用新的業務模式和營商手法，通訊辦協助通訊局在2019年1月進行公眾諮詢，收集公眾對通訊局建議更新類別牌照相關條件（包括對客戶羣較大的類別牌照持有人引入登記規定）的看法和意見。經考慮在公眾諮詢期間收到的看法和意見，通訊局在2019年4月26日發出聲明，公布決定更改類別牌照條件，以加強對類別牌照持有人的規管，為消費者提供更佳保障。

為了讓現時的類別牌照持有人有充足時間對業務系統及程序作出所需的調整以符合規定，經修訂的類別牌照將由2019年10月26日起生效，而新增的登記規定則由經修訂的類別牌照生效日期起計另加三個月的寬限期，即由2020年1月26日起執行。

下調電訊牌照費

通訊辦協助通訊局，聯同商經局局長就調低根據《電訊條例》發出的五類牌照的牌照費，以及在綜合傳送者牌照下

new licensing regime for the provision of Wireless Internet of Things (WIoT) platforms and services using the shared frequency band of 920 – 925 MHz by the CA in December 2017, three WIoT licences have been issued. On the other hand, the existing mobile network operators may also provide WIoT services by adopting mobile technology such as Narrowband Internet of Things with the use of their frequency spectrum assigned under the UCL. With the introduction of a new WIoT device fee under the UCL effective from 31 January 2019, any WIoT device operated under the UCL is subject to a much reduced level of \$2 for each WIoT device, which is set at the same level as the fee under the WIoT Licence. OFCA will continue to support the CA to facilitate the development and competitive supply of WIoT services in Hong Kong.

Re-assignment of Frequency Spectrum in the 900 MHz and 1800 MHz Bands

The current assignments of 50 MHz of spectrum in the 900 MHz band and 150 MHz of spectrum in the 1800 MHz band will expire in January and September 2021 respectively. Provisional assignments of 20 MHz of spectrum have been made to each of the four incumbent spectrum assignees through the offer of a right of first refusal in September 2018. Auction for the remaining 120 MHz of spectrum was conducted in December 2018 and the spectrum was successfully auctioned off to the four incumbent spectrum assignees at a total SUF of \$6 billion. Together with the SUF for the spectrum in the 1800 MHz band re-assigned administratively through the right of first refusal at \$4.32 billion, the spectrum assignees are required to pay a total SUF of \$10.32 billion for the new 15-year term of assignments.

To ensure a seamless transition when the spectrum is changed over in 2021, OFCA convened a technical working group in May 2019 comprising representatives of all the incumbent and new spectrum assignees, to coordinate the relevant technical arrangements to reconfigure their existing networks and/or roll out additional network infrastructures.

Review of the Telecommunications Regulatory Framework by the Government

In 2018/19, OFCA provided support in the review of the telecommunications regulatory framework under the TO, which was conducted by CEDB with a view to embracing the arrival of 5G and Internet of Things technologies and facilitating the trade. OFCA will continue to provide necessary support to the CA in relation to the review of the telecommunications regulatory framework conducted by the CEDB and any future legislative amendments to the TO having regard to stakeholders' views received in the exercise. In parallel, OFCA will provide support to the CA in respect of the introduction of various streamlined administrative measures with the aim of further facilitating the operation of the industry.

Review of the Class License Regime for Offer of Telecommunications Services

CLOTS created by the CA pursuant to section 8(1)(aa) of the TO authorises any person meeting the criteria or conditions set out therein to offer any telecommunications services to the general public without establishment, operation or maintenance of any means of telecommunications. In view of the emergence of new technologies and the adoption of new business models and commercial practices by market players, OFCA assisted the CA in conducting a public consultation in January 2019 so as to solicit views and comments from the public on its proposals to update the relevant conditions of the CLOTS, including the introduction of a registration requirement for CLOTS licensees serving a large customer base. Taking into account views and comments received therein, the CA issued a statement on 26 April 2019 to promulgate its decision to vary the conditions in the CLOTS with a view to enhancing regulatory oversight and providing better consumer protection.

To allow existing CLOTS licensees sufficient time to make necessary adjustments to their business systems and procedures for compliance, the revised CLOTS will take effect from 26 October 2019, while the newly introduced registration requirement will further be subject to a three-month grace period after the effective date, i.e. by 26 January 2020.

引入一項無線物聯網新收費項目以促進無線物聯網服務發展的建議，進行公眾諮詢。該諮詢於2018年6月至8月進行。

經審慎考慮在諮詢期間收到的看法及意見，通訊局與商經局局長於2018年10月聯合公布決定推行調低費用及在綜合傳送者牌照下引入無線物聯網收費項目的建議。綜合傳送者牌照下每100個顧客接駁點的顧客接駁費用由700元調低至500元；用於提供公共無線電傳呼服務的公共無線電通訊服務牌照和服務營辦商牌照（第三類服務）（流動虛擬網絡營辦商）的移動電台費用由每組100個移動電台收費700元調低至500元。至於移動無線電系統移動電台牌照和專用移動無線電系統牌照，每個移動電台的牌照費由270元調低至220元。

新牌照費在《2018年電訊（傳送者牌照）（修訂）規例》獲通過後，已由2019年1月31日起生效。

檢討根據全面服務責任提供的公眾收費電話機數目

公眾收費電話機是基礎電話服務之一，由全面服務供應商按其全面服務責任提供。在全面服務責任下提供公眾收費電話機服務所需的成本，由固定及流動服務營辦商分擔。鑑於對公眾收費電話機服務的需求近年持續減少，通訊局於2017年6月29日公布展開檢討，以決定在全面服務責任下的公眾收費電話機的合理數目。

通訊辦根據通訊局定下的指導原則進行檢討。就室內公眾收費電話機而言，諮詢場地擁有人／管理人的工作已於2018年2月完成。基於場地擁有人／管理人的意見，通訊辦決定從全面服務責任中剔除約35%（515個）室內公眾收費電話機。至於電話亭公眾收費電話機，諮詢全部18個區議會的工作已於2019年3月完成。基於區議會的意見，通訊辦決定從全面服務責任中剔除約50%（765個）電話亭公眾收費電話機。



實施擴展光纖網絡至偏遠地區鄉村資助計劃

為加快電訊商在香港的偏遠地區擴展網絡的進度，行政長官在2017年《施政報告》中宣布政府將會向電訊商提供資助，鼓勵他們擴展光纖網絡至位於偏遠地區的鄉村（資助計劃）。該資助計劃由通訊辦負責推行。

資助計劃涵蓋新界及離島九個地區235條鄉村，該等鄉村遠離固網營辦商現有光纖主幹網，村民只可選用以銅線網絡提供、速度只有每秒10兆比特或以下的寬頻服務。

立法會財務委員會已批出為數7.744億元的撥款以推行資助計劃。通訊辦正進行招標工作，以選出固網營辦商參與資助計劃。獲選的固網營辦商將會獲資助鋪設連接線路至有關鄉村的村口附近。視乎工程進度及村民的意見，獲資助鋪設的連接線路預期可由2021年起分階段擴展至有關鄉村。

固網寬頻服務的發展

隨着固網營辦商持續鋪設網絡，香港市民得以享用近乎覆蓋全港並採用各種技術提供的寬頻服務。截至2019年3月，香港約有271萬住宅及商業固網寬頻用戶，住戶滲透率為93%。目前寬頻服務的速度可高達每秒10吉比特。大

Reduction of Telecommunications Licence Fees

OFCA supported the CA in preparing a joint public consultation with the SCED on proposals to reduce the licence fees for five types of licences issued under the TO and to introduce a new fee component for WIoT under the UCL to facilitate the development of WIoT services. The consultation was conducted from June to August 2018.

Having carefully considered the views and comments received during the consultation exercise, the CA and SCED jointly promulgated their decisions in October 2018 to proceed with the fees reduction proposals and introduction of the WIoT fee component under the UCL. Customer connection fee under UCLs is reduced from \$700 to \$500 for each 100 customer connections; and mobile station fee of public radiocommunications service licences for public radio paging services and services-based operator licences (Class 3) (mobile virtual network operators) is reduced from \$700 to \$500 for each set of 100 mobile stations. For mobile radio system mobile station licences and private mobile radio system licences, the licence fee for each mobile station is reduced from \$270 to \$220.

Following the enactment of the Telecommunications (Carrier Licences) (Amendment) Regulation 2018, the new licence fees became effective on 31 January 2019.

Review of the Number of Public Payphones under the Universal Service Obligation

Public payphone is a form of basic telephone service which the universal service provider is required under its USO to provide. The cost of providing a public payphone service subject to the USO is shared by the fixed and mobile services operators. In view of the diminishing demand for public payphone service in recent years, the CA announced on 29 June 2017 that a review would be conducted to determine the reasonable number of public payphones that should be subject to the USO.

OFCA has since conducted the review in accordance with the guiding principles laid down by the CA. For in-building type public payphones, consultations with the owners/managers of the sites were completed in February 2018. Based on the

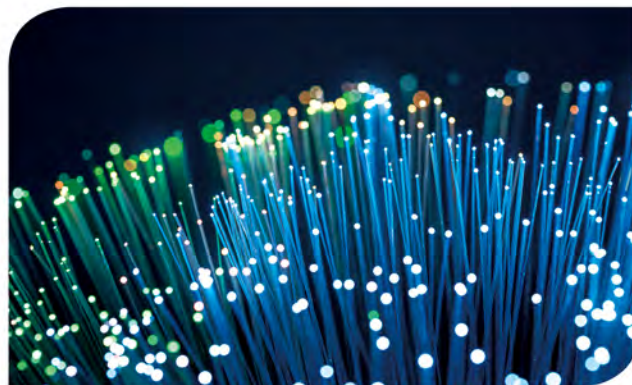
feedback from the owners/managers of the sites, OFCA decided to exclude about 35% (515) of the in-building type public payphones from the USO. For kiosk type public payphones, consultations with all 18 District Councils were completed in March 2019. Based on the feedback of the District Councils, OFCA decided to exclude about 50% (765) of the kiosk type public payphones from the USO.

Implementation of the Subsidy Scheme to Extend Fibre-based Networks to Villages in Remote Areas

To speed up the progress of extending network coverage by telecommunications companies in remote areas in Hong Kong, the Chief Executive announced in the 2017 Policy Address that the Government would provide subsidies to telecommunications operators to encourage the extension of fibre-based networks to villages in remote areas (Subsidy Scheme). OFCA has been tasked to implement the Subsidy Scheme.

The Subsidy Scheme covers 235 villages across nine districts in the New Territories and outlying islands, which are located far away from the existing fibre-based backbone networks of fixed network operators, where villagers can only choose broadband services delivered over copper-based networks at a speed of 10 Mbps or below.

A funding of \$774.4 million has been approved by the Finance Committee of the Legislative Council for the implementation of the Subsidy Scheme. OFCA is conducting a tender exercise for selection of fixed network operators to participate in the Subsidy Scheme. Selected fixed network operators will be subsidised to roll out lead-in connections to the vicinity of the entrances of



約80%的固網寬頻用戶使用速度達每秒100兆比特或以上的寬頻服務。

根據歐洲光纖到戶議會於2019年3月發出的報告，香港住戶連接光纖到戶／光纖到樓的滲透率在全球64個經濟體系中排名第六。

新的海底電纜系統在香港登陸

在通訊辦提供的綜合聯絡服務協助下，五個區域及洲際系統（即Pacific Light Cable Network、Hong Kong-Guam Cable System、Hong Kong-Americas Cable System、South East Asia-Japan 2 Cable System及Bay to Bay Express Cable System）和兩個本地系統（即Ultra Express Link及TKO Connect）正在興建或籌劃中，並計劃在2019年至2021年投入服務。通訊辦將繼續協助營辦商申請在香港興建新海底電纜系統所需的法定許可。

香港衛星網絡的發展

衛星頻譜和軌道位置屬珍貴天然資源。在香港註冊的通訊衛星在使用該等資源時須符合國際電聯的協調及通知規定。就此，通訊辦支援香港持牌衛星營辦商不時出席與外國當局舉行的衛星網絡協調會議，並協助處理發射衛星和

操作在軌衛星的牌照事宜。在2018／19年度，通訊辦參與了四個分別與挪威、美國、日本和阿拉伯聯合酋長國有關當局舉行的衛星網絡協調會議。隨着新衛星亞太6C號於2018年發射，現時共有12枚在軌衛星由香港兩家提供衛星通訊服務的持牌公司操作。

制訂和執行電訊標準

通訊辦密切監察電訊技術標準化的國際發展趨勢，並更新本地技術標準，以滿足業界和公眾需要。在2018／19年度，通訊局經諮詢無線電頻譜及技術標準諮詢委員會後，批准和發出了新訂及經修訂的技術標準各一項。

現時，合資格的本地和海外測試實驗室根據通訊局訂定的技術標準提供電訊設備測試和驗證服務，而獲通訊局認可為本地認證機構的本地實驗室更可提供全面的電訊設備測試和驗證服務。在2018／19年度，本地和海外認證機構簽發了550份設備認證，以應付電訊設備市場需求。

為確保提供電訊設備測試和驗證服務的所有本地認證機構符合通訊辦規定的服務質素及表現標準，通訊辦會繼續密切監察認證機構的表現，包括定期查核文件、視察實驗場所和檢查他們的工作。目前，所有本地認證機構的表現均符合通訊辦訂明的要求。



the villages concerned. Depending on the works progress and views of the villagers, it is expected that the subsidised lead-in connections can be extended to the villages concerned by phases from 2021 onwards.

Development of Fixed Broadband Services

With the continuous network rollout of fixed network operators, the Hong Kong community is able to enjoy nearly ubiquitous coverage of broadband networks deploying various technologies. As of March 2019 there were around 2.71 million residential and commercial fixed-broadband subscriptions, with a household penetration rate of 93%. Broadband services are now available at speeds of up to 10 Gbps. Around 80% of the fixed broadband subscriptions are supported by broadband services with speeds of 100 Mbps or above.

According to a report issued by the Fibre to the Home Council Europe in March 2019, Hong Kong ranked the sixth worldwide in fibre to home/building household penetration among the 64 economies under comparison.

Landing of New Submarine Cable Systems in Hong Kong

With the support of OFCA's single-point-of-contact service, five regional and transcontinental systems (namely, Pacific Light Cable Network, Hong Kong-Guam Cable System, Hong Kong-Americas Cable System, South East Asia-Japan 2 Cable System and Bay to Bay Express Cable System), as well as two domestic systems, (namely, Ultra Express Link and TKO Connect) are being constructed and planned for putting into service between 2019 and 2021. OFCA will continue to assist operators in applying for the necessary statutory approvals for construction of new submarine cable systems in Hong Kong.

Development of Hong Kong's Satellite Networks

Satellite spectrum and orbital positions are scarce natural resources. Use of these resources by communications

satellites registered in Hong Kong should also comply with the coordination and notification requirements of the ITU. In this regard, OFCA supports the licensed satellite operators of Hong Kong to attend satellite network coordination meetings with foreign administrations from time to time, and assists in the processing of licences for the launching and operation of satellites in space orbits. In 2018/19, OFCA participated in four satellite network coordination meetings with the administrations of Norway, the United States of America, Japan and the United Arab Emirates respectively. Following the launch of the new satellite APSTAR 6C in 2018, there are now 12 satellites in orbit operated by two Hong Kong companies licensed to provide satellite communications services.

Setting and Enforcing Telecommunications Standards

OFCA closely monitors international developments in telecommunications standardisation, and updates local technical standards in order to meet the needs of the industry and the public. In 2018/19, one new and one revised technical standard were approved and issued by the CA after consulting the Radio Spectrum and Technical Standards Advisory Committee.

Qualified local and overseas testing laboratories are now providing testing and certification services for telecommunications equipment against technical standards prescribed by the CA. In particular, local laboratories accredited by the CA as local certification bodies (LCBs) can offer a full range of telecommunications equipment testing and certification services. In 2018/19, LCBs and foreign certification bodies issued 550 equipment certificates to meet the needs of the telecommunications equipment market.

To ensure that all LCBs providing telecommunications equipment testing and certification services meet the service quality and performance standards required by OFCA, OFCA will continue to closely monitor their performance by conducting documentary checks, plant visits and reviews on a regular basis. So far, all LCBs have been performing up to the requirements set by OFCA.