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迎接電訊市場新挑戰

Meeting the New Challenges of the Telecommunications Market

便利5G發展

在多段頻帶提供頻譜

5G技術的推出為各行各業和智慧城市的應用帶來巨大發展潛力，例如智能監測、遙距操作、遠程醫療及智能運輸。在香港，5G覆蓋無遠弗屆，流動用戶可享受到高速、高容量、高可靠性、大規模連接和低時延通訊等顯著改善的服務。

截至2023年3月，通訊局已在低、中、高頻帶（包括700兆赫、3.3吉赫、3.5吉赫、4.9吉赫，以及26吉赫及28吉赫）內指配共2 130兆赫的無線電頻譜作公共流動電訊服務用途，包括提供5G服務。商用5G服務已於2020年4月1日在香港推出。截至2023年3月，香港5G覆蓋率已超過九成，在核心商業區的覆蓋率更達99%，涵蓋市區主要地點及港鐵全線。

●提供更多5G頻譜以滿足營辦商的需求

為滿足5G的創新應用對速度、容量和覆蓋範圍與日俱增的需求，通訊辦協助通訊局向市場供應更多不同頻帶的頻譜。於2022年6月，通訊辦協助通訊局按照2021年10月舉行的拍賣結果，指配700兆赫頻帶內70兆赫的頻譜予流動網絡營辦商。通訊辦亦會協助通訊局，在6/7吉赫頻帶騰出400兆赫頻譜，以便在2025年年初適時向市場推出頻譜。

●落實重新指配2.5/2.6吉赫頻帶內的頻譜

待現有指配期於2024年3月屆滿後，2.5/2.6吉赫頻帶內的90兆赫頻譜將按照2021年10月舉行的拍賣結果重新指配予三家流動網絡營辦商，因此部分在2.5/2.6吉赫頻帶內的頻譜將會於為期15年的新指配期開始時易手。通訊辦於2022年9月召開了由三家有關流動網絡營辦商代表組成的技術工作小組會議，以協調相關技術安排。通訊辦會繼續確保2.5/2.6吉赫頻帶內的頻譜於2024年3月重新指配時可以無縫交接。



通訊辦職員實地測試一家流動網絡營辦商的網絡覆蓋，以核實該營辦商是否符合關於提供5G網絡及服務的牌照要求。

A staff member of OFCA conducting a field measurement on a mobile network operator's network coverage for verification of its compliance with the licence requirements for 5G network and service rollout.

Facilitating 5G Developments

Making Spectrum Available in Multiple Frequency Bands

The advent of 5G technology opens up vast potential for various commercial and smart city applications such as smart surveillance, remote operation, telemedicine and intelligent transportation. With the ubiquitous availability of 5G in Hong Kong, mobile users are now enjoying vastly improved services with high speed, high capacity, high reliability, massive connectivity and low latency communications.

As of March 2023, the CA had assigned a total of 2 130 MHz of radio spectrum in various low, mid and high frequency bands, namely 700 MHz, 3.3 GHz, 3.5 GHz, 4.9 GHz, and 26 GHz and 28 GHz for public mobile telecommunications use, including the provision of 5G services. Commercial 5G services were launched in Hong Kong on 1 April 2020. As of March 2023, 5G coverage in Hong Kong reached over 90% and even up to 99% in core business districts, covering major locations in urban areas and all MTR lines.



• Making Available Additional 5G Spectrum to Meet the Demand of Operators

In order to meet the growing needs of innovative 5G applications in terms of speed, capacity and coverage, OFCA supported the CA to release additional spectrum in different frequency bands to the market. In June 2022, OFCA assisted the CA in assigning 70 MHz of spectrum in the 700 MHz band to MNOs following an auction held in October 2021. OFCA will also assist the CA in making available 400 MHz of spectrum in the 6/7 GHz band to facilitate timely release of the spectrum to the market in early 2025.

• Implementation of Re-assignment of Frequency Spectrum in the 2.5/2.6 GHz Band

Upon expiry of the current assignment in March 2024, 90 MHz of spectrum in the 2.5/2.6 GHz band will be re-assigned to three MNOs following an auction held in October 2021, resulting in some of the frequency assignments in the 2.5/2.6 GHz band that will be changing hands when the new 15-year term of assignments commences. OFCA convened a meeting of the technical working group comprising representatives of the three MNOs concerned in September 2022 to coordinate the relevant technical arrangements. OFCA will continue to ensure a seamless changeover at the time of re-assignment of the spectrum in the 2.5/2.6 GHz band in March 2024.



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●為重新指配850／900兆赫和2.3吉赫頻帶內的頻譜作準備

850／900兆赫頻帶內20兆赫頻譜和2.3吉赫頻帶內90兆赫頻譜的現有指配期將分別於2026年5月和2027年3月屆滿。在通訊辦協助下，通訊局與商經局局長於2022年11月進行聯合公眾諮詢，並於2023年5月2日就重新指配安排及相關頻譜使用費發出聯合聲明。根據上述決定，預計有關頻譜將於2024年以拍賣方式重新指配。

實施鼓勵及早使用5G技術資助計劃

政府於2020年5月透過「防疫抗疫基金」推出的「鼓勵及早使用5G技術資助計劃」，反應十分踴躍。該計劃旨在鼓勵各行各業及早使用5G技術，以提升效率、生產力和服務質素。在此計劃下，每個獲批的項目可獲資助與使用5G技

術直接相關的實際開支的50%，上限為港幣50萬元。政府已為該計劃預留合共港幣一億元的撥款。

截至2022年12月31日申請期限屆滿為止，獲批的項目合共173個，涵蓋不同行業，包括農業、林業及漁業、建造、設計、教育、環保、電競及休閒、活動及展覽、金融及保險、物流、製造、醫療、保健及公共衛生、專業服務、物業及設施管理、維修、保養及監測、市場營銷、電訊、紡織及交通運輸。部分表現出眾的獲批項目包括大學教學醫院遙距手術指導及教學系統、STEM（科學、科技、工程和數學）教育系統、建築地盤安全監測系統、智能乘車人流分析系統、智能保安系統、遙距操控吊機系統等。該計劃成功推動社會不同界別及早將5G普及化，促進智慧城市發展，利便市民日常生活，亦為初創企業開拓更多商機和發展空間。



5G分享會主禮嘉賓商務及經濟發展局副局長陳百里博士在分享會上致開幕辭。

The officiating guest of the 5G seminar, the Under Secretary for Commerce and Economic Development, Dr Bernard CHAN, gave an opening speech at the seminar.



通訊辦同事與嘉賓講者在5G分享會上合照。

Group photo of OFCA staff and guest speakers at the 5G seminar.

● *Preparing for Re-assignment of Frequency Spectrum in the 850/900 MHz and 2.3 GHz bands*

The current assignment of 20 MHz of spectrum in the 850/900 MHz band and 90 MHz of spectrum in the 2.3 GHz band will expire in May 2026 and March 2027 respectively. OFCA supported the CA and SCED to conduct a joint public consultation in November 2022 and issue a joint statement on 2 May 2023 on the re-assignment arrangements as well as the related SUF. Pursuant to the above decision, it is expected that the spectrum concerned will be re-assigned by way of auction in 2024.

● *Implementation of the Subsidy Scheme for Encouraging Early Deployment of 5G*

The “Subsidy Scheme for Encouraging Early Deployment of 5G” under the Government’s Anti-



通訊事務總監梁仲賢先生在5G分享會上致歡迎辭。

Director-General of Communications, Mr Chaucer LEUNG, gave a welcome-speech at the 5G seminar.

epidemic Fund was well received with enthusiastic response when it was launched in May 2020. The Scheme aims to encourage early deployment of 5G technology across trades and industries for improving efficiency, productivity and quality of service. Under the Scheme, each approved project is subsidised with 50% of the actual cost directly related to the deployment of 5G technology, subject to a cap of HK\$500,000. The total amount of funding earmarked for the Scheme is HK\$100 million.

As at its deadline for application on 31 December 2022, a total of 173 applications were approved, covering various sectors including agriculture, forestry and fishery, construction, design, education, environmental protection, e-sports and recreation, event and exhibition, finance and insurance, logistics, manufacturing, medical, healthcare and public health, professional services, property and building facilities management, repair, maintenance and monitoring, sales and marketing, telecommunications, textiles, and transport. Some prominent approved projects include remote surgery consultation and training system for university teaching hospital, STEM education system, safety monitoring system for construction site, smart passenger flow analysis system, smart security system, and remote control gantry crane, etc. The Scheme has successfully promoted early 5G deployments in a variety of sectors, facilitating smart city development, providing convenience for the public in their daily life while opening up more business opportunities and room for development for start-up businesses.

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實施擴展光纖網絡至偏遠地區鄉村資助計劃

為配合政府的政策，通訊辦正在推行一項獲撥款港幣7.7億元的資助計劃，為固網營辦商提供經濟誘因以擴展光纖網絡至新界及離島九個地區共235條鄉村。由於該等鄉村遠離固網營辦商現有光纖主幹網，在資助計劃實施前，村民只可選用透過銅線網絡提供、速度不高於每秒10兆比特的寬頻服務。

該235條鄉村分別組合成六個投標項目（即投標項目一至投標項目六）以進行招標。獲選的固網營辦商須鋪設光纖連接線路至相關鄉村，以及鋪設三條海底光纖電纜，分別連接香港島至南丫島（投標項目五）及連接大嶼山至長洲和大嶼山至坪洲（投標項目六）。為引入市場競爭，獲選的固網營辦商須開放在資助計劃下獲資助鋪設的網絡設施，以及海底光纖電纜至少一半的容量予其他固網營辦商免費使用。

隨着資助計劃下的六個投標項目在2019年11月至2020年5月期間悉數批出，獲選的固網營辦商已把光纖網絡擴展至超過120條鄉村，並已在2023年5月完成鋪設三條分別連接南丫島、長洲和坪洲的海底光纖電纜。光纖網絡預期於2026年前會擴展至所有資助計劃所涵蓋的鄉村。

光纖網絡擴展工程除了令當地村民可以享用高速固網寬頻服務外，流動網絡營辦商亦可使用新網絡支援其流動網絡，在有關地區提供包括5G服務在內的高速和創新流動服務。



通訊辦同事就資助計劃下安裝的光纖網絡連接設施進行驗收工作。

OFCa's representatives carrying out an inspection on the installed facilities of fibre-based lead-in connections under the Subsidy Scheme.



通訊辦聯同流動網絡營辦商代表與一鄉村的代表會面，探討如何改善村內流動網絡覆蓋。

OFCa and mobile network operators conducting an on-site meeting with the representatives of a village to explore ways to improve its mobile coverage.

確保新建樓宇內預留足夠空間及可進入該等樓宇以裝設流動通訊設施

為配合《2022年施政報告》中所提出加強5G基建的措施，通訊辦現正協助商經局制訂修例建議，以確保新建樓宇內預留空間，讓流動網絡營辦商可進入新建樓宇裝設流動通訊設施。我們已諮詢相關界別（包括發展商、電訊業、專業團體等），以徵詢持分者對有關建議的意見。

《電訊條例》第14條將會被修訂以落實相關措施，授權流動網絡營辦商在指明建築物設置及維持無線電通訊裝置。

與此同時，通訊辦會協助通訊局制訂《在指明建築物內設置流動接達設施以提供公共流動無線電通訊服務的工作守則》（《流動設施工作守則》），目的在於就指明建築物裝設流動通訊設施的基建要求提供實務指引予發展商及持牌人在建築施工前遵從。

通訊辦會繼續支援商經局推行有關的法例修訂建議，並協助通訊局制訂《流動設施工作守則》及聯繫相關各方，以確保建議適時實施，便利流動網絡的鋪設工作。

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

In support of the Government's policy initiative, OFCA is implementing a subsidy scheme with a funding of HK\$770 million to provide financial incentives for FNOs to extend their fibre-based networks to 235 villages across nine districts in the New Territories and outlying islands. As these villages are located far away from the existing fibre-based backbone networks of FNOs, villagers could only choose broadband services delivered over copper-based networks at a speed of no more than 10 Mbps before the implementation of the Subsidy Scheme.

The 235 villages are grouped under six projects (namely, Project 1 to Project 6) for tendering purpose. Selected FNOs are required to roll out fibre-based lead-in connections to the villages concerned, and roll out three submarine fibre-based cables connecting Lamma Island from Hong Kong Island (under Project 5), as well as connecting Cheung Chau from Lantau Island and Peng Chau from Lantau Island (under Project 6). To introduce competition, the selected FNOs are required to open up at least half of the capacity of the network facilities and submarine fibre-based cables subsidised under the Subsidy Scheme for use by other FNOs for free.

Following the award of all six tender projects under the Subsidy Scheme between November 2019 and May 2020, the selected FNOs have already extended their fibre-based networks to more than 120 villages and completed the rollout of three submarine fibre cables connecting Lamma Island, Cheung Chau and Peng Chau in May 2023. It is expected that fibre-based networks will be extended to all the villages covered by the Subsidy Scheme by 2026.

With the extension of the fibre-based networks, not only will the villagers concerned be able to enjoy high-speed fixed broadband services, MNOs will also be able to make use of the new networks as backhaul for their mobile networks and provide high-speed and innovative mobile services including 5G services to the areas concerned.

Ensuring Availability of Space in and Access to New Buildings for Installation of Mobile Communications Facilities

In support of the 2022 Policy Address initiative to strengthen 5G infrastructure, OFCA is assisting CEDB in formulating the legislative proposal to ensure availability of reserved space in and access to new buildings for installation of mobile communications facilities by MNOs. Consultation sessions with relevant industries (including the developers, telecommunications trade, professional bodies, etc.) were conducted to seek views from stakeholders on the proposal. Amendments will be made to section 14 of the TO to implement the initiative such that MNOs will be authorised to place and maintain radiocommunications installations at specified new buildings.

Meantime, OFCA will assist the CA in developing a Code of Practice for the Provision of Mobile Access Facilities in Specified Buildings for the Provision of Public Mobile Radiocommunications Services (Mobile CoP), which aims to provide practical guidance of requirements of the infrastructure for installation of mobile communications facilities in the specified new buildings to be followed by the developers and licensees prior to the construction of the buildings.

OFCA will continue to support CEDB to take forward the proposed legislative amendments, assist the CA in developing the Mobile CoP, and liaise with relevant parties to ensure timely implementation of the proposal to facilitate rollout of mobile networks.

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與早幾代的流動服務相比，5G所需的無線電基站數量更多。為便利迅速和有效地鋪設5G網絡，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安裝無線電基站。通訊辦已成立專責小組，負責協調流動網絡營辦商與相關政府部門，以簡化先導計劃的申請過程。就此，通訊辦已發出《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、要求和簡化後的申請程序。為向流動網絡營辦商提供誘因，政府就流動網絡營辦商安裝的每個無線電基站只收取每年港幣一元的象徵式租金。通訊辦於2022年1月推出第二階段的先導計劃，在「需求主導」的模式下，進一步開放約500個政府場所供流動網絡營辦商安裝無線電基站。截至2023年5月，政府在計劃下共收到215份申請，並已批准當中的113份申請。



通訊辦職員在政府場地檢查已安裝的無線電基站。

OFCA staff examining the installed radio base station at a government venue.

除政府場所外，街道裝置及公眾設施（例如公眾收費電話亭及有上蓋巴士站）亦適合安裝無線電基站。為便利流動網絡營辦商使用這些設施，通訊辦分別於2020年4月及11月發出了《使用公眾收費電話亭安裝無線電基站以提供公共流動服務的指引》及《使用有上蓋巴士站安裝無線電基站以提供公共流動服務的指引》。截至2023年3月，共有10份在有上蓋巴士站安裝無線電基站的申請獲批。通訊辦會繼續與業界及相關政府部門合作，物色適合設置無線電基站的街道裝置和公眾設施，以及便利營辦商進行技術測試。

解決限制區的問題

●使3.5吉赫頻帶的頻譜短期內可在特定情況下於限制區內應用

自3.4—3.6吉赫（3.5吉赫）頻帶於2020年4月1日起由固定衛星服務重新編配予流動服務後，在大埔及赤柱劃出了兩個限制區，務求使5G服務可與在同一頻帶和相鄰頻帶操作的遙測、追蹤及控制在軌持牌衛星的衛星地球站（遙測、追蹤及控制站）並存。因應業界的要求和持份者的意見，通訊辦協助通訊局發出《於通訊事務管理局所訂立的限制區內裝設在3.4—3.6吉赫頻帶操作的無線電基站的指引》文件，以便流動網絡營辦商可在受限的情況下於限制區設置3.5吉赫無線電基站。通訊辦會繼續促進流動網絡營辦商按照有關指引在兩個限制區內設置3.5吉赫無線電基站。

●協助撤銷大埔的「3.5吉赫限制區」

為了解決大埔「3.5吉赫限制區」的問題，通訊辦積極與有關衛星營辦商聯繫，商討將他們位處大埔於3.5吉赫頻帶操作的遙測、追蹤及控制站搬遷至春坎角電訊港，令流動網絡營辦商可在香港更廣泛地使用5G頻帶（包括3.5吉赫頻帶）提供5G服務。在通訊辦的協助下，一家衛星營辦商已獲批土地將其在大埔的遙測、追蹤及控制站遷往春坎角電訊港，而另一家營辦商則已承諾在其衛星設施安裝衛星帶通濾波器，以防止無線電干擾。



Facilitating the Rollout of 5G Networks

Compared with older generations of mobile services, a larger amount of radio base stations (RBSs) are required for 5G. To facilitate the expedient and effective rollout of 5G networks, OFCA launched a pilot scheme in March 2019 to open up more than 1 000 suitable government premises for MNOs to install RBSs. OFCA has set up a dedicated team to coordinate with MNOs and relevant government departments to streamline the application process under the scheme. OFCA has accordingly issued the “Guidance Notes for Submission of Applications under the Pilot Scheme for Installation of Radio Base Stations at Selected Government Venues”, setting out the principles, requirements and streamlined procedures for application. As an incentive for MNOs, a nominal rental of HK\$1 per year will be charged for each RBS installed. In January 2022, OFCA launched the second phase of the pilot scheme. Under the “demand-led” model, around 500 government premises have further been opened up for installation of RBSs. As of May 2023, 215 applications were received under the scheme, of which 113 were approved.

Apart from government premises, street furniture and public facilities such as public payphone kiosks and sheltered bus stops are also suitable for the installation of RBSs. To facilitate MNOs’ access to these facilities, OFCA issued the “Guidelines on the Use of Public Payphone Kiosks for the Installation of Radio Base Stations for Provision of Public Mobile Services” and “Guidelines on the Use of Sheltered Bus Stops for the Installation of Radio Base Stations for Provision of Public Mobile Services” in April and November 2020 respectively. As of March 2023, 10 applications for installation of RBSs at sheltered bus stops were approved. OFCA will continue to work with the industry and relevant government departments in identifying suitable street furniture and public facilities for installation of RBSs and facilitating technical trials.

Solutions to Restriction Zones Issues

• *Enabling Controlled Deployment of Spectrum in the 3.5 GHz Band within the Restriction Zones in the Short Run*

Following the reallocation of the 3.4 – 3.6 GHz (3.5 GHz) band from fixed satellite service to mobile service with effect from 1 April 2020, two restriction zones in Tai Po and Stanley have been delineated to enable the coexistence of 5G services and the earth stations for telemetry, tracking and control of the licensed satellites in orbit (TT&C stations) operating in the same and adjacent bands. In response to the industry request and with input from the stakeholders, OFCA assisted the CA in issuing the “Guidelines for Installation of Radio Base Stations Operating in the 3.4 – 3.6 GHz Band within the Restriction Zones Delineated by the Communications Authority” such that MNOs would be able to deploy 3.5 GHz RBSs within the restriction zones in a controlled manner. OFCA will continue to facilitate MNOs in the deployment of 3.5 GHz RBSs within the two restriction zones in accordance with the guidelines.

• *Facilitating the Removal of the “3.5 GHz Restriction Zone” in Tai Po*

To resolve the issue of the “3.5 GHz restriction zone” in Tai Po, OFCA has proactively liaised with the concerned satellite operators regarding the relocation of their TT&C stations operating at the 3.5 GHz band from Tai Po to the Chung Hom Kok Teleport, so that MNOs can make wider use of all the available 5G bands (including the 3.5 GHz band) in Hong Kong for the provision of 5G services. With OFCA’s assistance, one satellite operator has been granted a land lot for relocation of its TT&C stations from Tai Po to the Chung Hom Kok Teleport, while another operator has undertaken to install satellite band-pass filters at its satellite facilities to prevent radio interference.

3

迎接電訊市場新挑戰

Meeting the New Challenges of the Telecommunications Market

搬遷遙測、追蹤及控制站涉及複雜的土地及技術事宜，包括選址、批地、土地平整、建造工程和另建額外的衛星天線，並要確保現有在軌衛星的操作不受影響。考慮到完成搬遷所需的時間和資源，預計可在2024年年底前撤銷大埔「3.5吉赫限制區」。現時，流動網絡營辦商正利用其他5G頻帶（例如700兆赫及4.9吉赫頻帶）或已透過重整他們現有的頻譜（例如850兆赫及2.1吉赫頻帶）在大埔「3.5吉赫限制區」提供5G服務。

確保可適時供應合適的頻譜以應付新興無線電通訊服務的需要

通訊辦一直緊貼電訊業的全球發展趨勢，並參與國際電信聯盟（國際電聯）、亞太地區電信組織（APT）及其他組織舉辦的相關國際／地區會議。通訊辦亦會透過各種正式和非正式渠道，與香港業界人士保持溝通，密切留意電訊業的發展。為了及早展開頻譜策劃的工作，並確保可適時釋放合適的頻譜，通訊辦成立了內部專責小組統籌頻譜供應事宜，以應付新興無線電通訊服務的需求和便利公共流動（包括5G）服務的持續發展。經考慮通訊辦的建議後，通訊局於2023年2月公布了2023至2025年的頻譜供應表，向業界公布未來三年擬提供作公共流動及／或其他無線電通訊服務的無線電頻譜。另外，通訊辦會密切留意2023年年底舉行的世界無線電通信大會的會議結果，以確定可用於流動服務的新頻帶。視乎市場發展，通訊辦會協助通訊局向業界供應合適的新頻譜。

落實《電訊條例》的修訂項目

《2021年電訊（修訂）條例》（《修訂條例》）於2022年6月24日開始實施，以落實四項主要措施，包括訂明通訊局規管智能產品電訊功能的權力、加強保護地下電訊基礎設施、簡化發牌機制以便利推出創新的服務，以及改善《電訊條例》下的上訴機制。


根據《電訊條例》第18A條，任何人在地下電訊線路附近進行任何低於地面的工作時沒有採取合理步驟保護或防止

地下電訊線路受損，即屬刑事罪行。就此，通訊辦協助通訊局制訂和發出《有關在地下電訊線路附近工作的指引》（《指引》），為有關持份者提供實務指引，以符合第18A條的規定。根據《指引》，施工者須委聘一名合資格人士進行地下電訊線路探測工作。為此，通訊辦聯絡香港建造學院及香港專業教育學院，兩家機構提供相關訓練課程。目前已有超過600人參加兩家機構提供的訓練課程，其中超過290人已登記成為合資格人士。有關合資格人士名單已在通訊辦網站公布。《電訊條例》第18A條實施僅一年多，已有四宗成功檢控個案經裁判官判處罰款，另有五宗個案正在調查或作出檢控，預料有關執法行動將會提升業界對地下電訊基礎設施的保護意識。

管理緊急警示系統以迅速發放緊急政府訊息



四家本地流動網絡營辦商已設立緊急警示系統，讓政府可在緊急情況下（例如不可預見的極端天氣情況、地震等）透過其流動網絡發出緊急訊息，提醒市民盡快採取應變措施。通訊辦會繼續與流動網絡營辦商合作精簡運作方式，並在有需要時協助不同政策局／部門通過有關系統發放緊急訊息。



Relocation of the TT&C stations involves complex land and technical issues, including site selection, land grants, site formation, construction work and establishment of additional satellite antennae as well as ensuring that operation of the existing satellites in orbit will not be affected. Considering the lead time and effort required for completing the relocation exercise, it is expected that the “3.5 GHz restriction zone” in Tai Po can be removed before the end of 2024. In the meantime, MNOs are making use of other 5G bands (e.g. the 700 MHz and 4.9 GHz bands) or have re-farmed their existing spectrum (e.g. the 850 MHz and 2.1 GHz bands) to provide 5G services in the “3.5 GHz restriction zones” in Tai Po.

Ensuring Timely Supply of Suitable Spectrum to Meet the Needs of Emerging New Radiocommunications Services

OFCA keeps up with worldwide development trends in telecommunications and participates in related international/regional meetings of the International Telecommunication Union (ITU), Asia-Pacific Telecommunity (APT), and other organisations. Through various formal and informal channels, OFCA also maintains dialogue with the industry players in Hong Kong to keep abreast of the development of the telecommunications industry. An in-house task force on spectrum supply has been set up in OFCA to collate efforts with a view to conducting early spectrum planning work and ensuring timely release of suitable spectrum to meet the demands of emerging new radiocommunications services and facilitate the ongoing development of public mobile (including 5G) services. Taking into account OFCA’s recommendations, the CA issued the Spectrum Release Plan for 2023–2025 in February 2023 to inform the industry of the potential supply of spectrum for provision of public mobile and/or other radiocommunications services in the coming three years. In addition, OFCA will keep abreast of the outcomes of the World Radiocommunication Conference to be convened in late 2023 on the identification of new frequency bands for mobile services. Taking note of the market development,

OFCA will assist the CA in making available suitable new spectrum to the industry.

Implementation of Amendments to the Telecommunications Ordinance

The Telecommunications (Amendment) Ordinance 2021 (Amendment Ordinance) came into operation on 24 June 2022 to implement four major measures, namely stipulating the powers of the CA on regulating the telecommunications functions of smart devices, strengthening the protection of underground telecommunications infrastructure, simplifying the licensing framework to facilitate the introduction of innovative services and improving the appeal mechanism under the TO.

Under section 18A of the TO, it is a criminal offence for any person who failed to take reasonable steps to protect or prevent damage to an underground telecommunications line when carrying out any work below ground level near the line. In this regard, OFCA assisted the CA in compilation and issue of the “Guidelines on Work near Underground Telecommunications Lines” (the Guidelines) to provide relevant stakeholders with practical guidance for compliance with section 18A. According to the Guidelines, the working party shall appoint a competent person to carry out detection work for the underground telecommunications lines. In this connection, OFCA has liaised with two training course providers, namely the Hong Kong Institute of Construction and the Hong Kong Institute of Vocational Education, to offer relevant training courses. So far, more than 600 persons have attended the training courses provided by the two training institutions and over 290 of them have been registered as competent persons. The list of competent persons is published on OFCA’s website. After just over a year of implementing section 18A of the TO, four successful prosecution cases were brought with fines ordered by the Magistrates, and five cases are under investigation or prosecution. It is anticipated that the enforcement work will raise the industry awareness on the protection of underground telecommunications infrastructure.

3

迎接電訊市場新挑戰

Meeting the New Challenges of the Telecommunications Market

全面落實電話智能卡實名登記制

根據《電訊（登記用戶識別卡）規例》（《登記規例》）（第106A1章），電話智能卡實名登記制（實名登記制）規定原有電話儲值卡用戶須於2023年2月23日或之前完成實名登記，否則其電話儲值卡將不能使用。在上述法定限期後，所有在本地發出及使用的電話智能卡（包括上台月費服務及電話儲值卡）均須於啟動服務前完成實名登記。

為協助市民（尤其是長者及其他有需要的群組）在上述法定限期前為其電話儲值卡完成實名登記，通訊辦曾於18間指定郵政局和25個指定港鐵站開設實名登記服務櫃位。通訊辦亦與多間社福機構合作，為有需要的人士提供協助，並為超過200間社福機構和地區組織的義工安排培訓，以及探訪長者活動中心和安老院舍超過25次，協助其服務對象即場完成登記。通訊辦亦與該等組織一同參與家訪和外展服務。為進一步加強公眾及早完成實名登記的意識，通訊辦透過不同媒介及渠道展開全面的宣傳工作，提醒市民須於限期前為其電話儲值卡完成實名登記。

實名登記制已於2023年2月24日全面實施，整個流程的運作大致暢順。截至2023年3月31日，約1 300萬張電話

智能卡（包括上台月費服務及電話儲值卡）已完成實名登記。

通訊辦持續進行一系列監察及執法工作，確保實名登記制有效實施。就實名登記制的具體運作細節和要求，通訊辦協助通訊局向電訊商發出相關指引（《指引》）。指引要求電訊商須採取不同措施以核實用戶的資料，包括面對面登記、利用光學字符識別技術自動擷取身分證文件資料，以及人手核對資料等，以有效核實用戶的證件，確保有關登記系統合乎《登記規例》及《指引》的要求。於2022年5月，通訊辦就一間電訊商因未能確保其電話卡用戶在啓用服務前完成實名登記涉嫌違規的個案展開調查。通訊局在考慮過通訊辦的評估及該電訊商的申述後，於2022年10月21日向該電訊商發出指示，要求就其違反《登記規例》一事作出糾正。

通訊辦會繼續與電訊服務供應商合作，根據實名登記制實施以來的運作經驗持續優化電訊商的登記平台，並就已登記的用戶資料進行定期抽樣檢查，以確保有關登記記錄完整可靠。同時通訊辦會繼續進行執法及監察工作，包括核實電訊商的登記平台、進行市場巡查行動，以及定期檢查有關登記記錄。



政府與電訊商就電話卡實名登記成立專責應變協調小組，於2023年2月舉行會議商討各項應變方案，以妥善處理登記限期前後可能出現的各種突發情況。

The dedicated task force for the Real-name Registration for SIM Cards formed by the Government and telecommunications service providers held meetings in February 2023 to discuss various plans to facilitate the proper handling of various contingency situations that may arise before and after the registration deadline.



通訊辦職員探訪一間安老院舍，向長者派發宣傳品，並講解電話卡實名登記制。

A staff member of OFCA delivering publicity items and explaining to an elderly person about the Real-name Registration for SIM Cards during a visit to a residential care home for the elderly.



Administration of the Emergency Alert System for Prompt Dissemination of Time-Critical Messages of the Government

An emergency alert system (EAS) has been set up by the four local MNOs to enable the Government to send time-critical messages via their mobile networks to alert the public to take contingency measures as soon as possible during emergency situations, such as unforeseen extreme weather conditions, earthquakes, etc. OFCA will continue to work with MNOs in streamlining the operation and assist

different bureaux/departments in disseminating emergency messages via the EAS as necessary.

Full Implementation of Real-name Registration Programme for SIM Cards

Under the Telecommunications (Registration of SIM Cards) Regulation (Cap. 106A1), the Real-name Registration Programme for SIM Cards (RNR Programme) requires existing PPS card users to complete real-name registration by 23 February 2023 or their PPS cards would be deactivated. After the aforementioned statutory deadline, all SIM cards issued and used locally (including SIM service plans and PPS cards) must complete real-name registration before service activation.



商務及經濟發展局局長丘應樺（右）於2023年2月16日下午在通訊事務總監梁仲賢（左）陪同下到灣仔郵政局視察電話智能卡實名登記支援服務的運作情況，並呼籲用戶盡快在2月23日限期前完成實名登記。

The Secretary for Commerce and Economic Development, Mr Algernon YAU (right), accompanied by the Director-General of Communications, Mr Chauker LEUNG (left), visited Wan Chai Post Office on 16 February 2023 to view the operation of the support service for the Real-name Registration for SIM Cards and appealed to users to complete the registration as soon as possible before the deadline on 23 February 2023.

To assist members of the public, particularly the elderly and other needy groups, in completing registration for their PPS cards before the aforementioned statutory deadline, OFCA set up service counters for real-name registration at 18 designated post offices and 25 designated MTR stations. OFCA also collaborated with various social welfare organisations to provide assistance to those in need. Trainings for volunteers from more than 200 social welfare agencies and district organisations were arranged and more than 25 visits to elderly centres and residential care homes for the elderly were conducted to assist their clients in completing registration on the spot. OFCA also participated in home visits and outreach activities with these organisations. To further enhance public awareness on the need for timely registration, OFCA has rolled out a comprehensive publicity efforts through various media and channels to remind the public of the need to complete the registration for their PPS cards before the deadline.

3

迎接電訊市場新挑戰

Meeting the New Challenges of the Telecommunications Market

打擊詐騙電話和訊息

通訊辦一直與電訊業和執法機關緊密合作，制定和實施技術措施，攜手打擊透過電訊網絡傳送的詐騙電話和訊息。通訊辦、警方及電訊業於2022年9月成立了電訊業打擊詐騙電話和訊息專責工作小組（工作小組），進一步協調各方的工作，從電訊角度打擊詐騙電話和訊息。為提供一個清晰的發牌和規管制度以實施相關打擊詐騙電話和訊息的措施，通訊辦協助通訊局引入新牌照條款及修訂有關規管文件，對此作出明文規定。

在工作小組成員的共同努力下，電訊業自2022年第四季起已陸續實施多項新措施，包括(a)就來電號碼為「+852」開首的境外來電發送語音或文字訊息提示，以提醒流動服務用戶，有關可疑來電源自香港境外；(b)攔截可疑或偽冒致電者身分的來電；以及(c)根據警方的資料，阻截用戶登入懷疑詐騙網站和暫停涉及詐騙個案的本地電話號碼的電訊

服務。通訊辦會繼續與電訊業及警方合作，提升各項措施的成效。

為協助市民識別短訊發送者地址的真偽，通訊辦現正與電訊業、銀行業及警方合作，設立短訊發送者登記制度，目標是在2023年年底推出。

同時，通訊辦協助通訊局於2023年4月21日發出《流動服務供應商管理詐騙電話的業務守則》。根據該業務守則，流動服務供應商須監察自其網絡及系統打出的電話，防止有人利用個別本地電話號碼／編碼打出詐騙電話。流動服務供應商亦須採取適當行動，暫停任何被識別為打出懷疑詐騙電話的本地電話號碼／編碼的相關電訊服務／功能。該業務守則已於2023年6月30日實施。流動服務供應商於2023年7月至8月期間根據該業務守則暫停了約20萬個本地電話號碼的服務。



通訊辦與電訊業界和執法機關合作，制定有效打擊詐騙電話和訊息的措施，並加強相關的公眾教育。

OFCA collaborates with the telecommunications industry and law enforcement agency on developing effective measures to combat fraudulent calls and messages as well as to strengthen public education in this regard.



The RNR Programme was fully implemented on 24 February 2023 and the operation of the entire process had been smooth in general. As of 31 March 2023, about 13 million SIM cards (including SIM service plans and PPS cards) had already completed registration.

OFCA has been carrying out a series of ongoing monitoring and enforcement actions to ensure the effective implementation of the RNR Programme. In particular, OFCA has assisted the CA to issue guidelines (the Guidelines) to provide specific operational details and requirements of the RNR Programme for telecommunications service providers. The Guidelines has mandated that the telecommunications service providers should adopt different measures to verify information of the users, including face-to-face registration, making use of optical character recognition to automatically extract information from identity documents, manual visual checking of information, etc., so as to effectively verify identity documents of users and to ensure that the registration systems comply with the requirements of the Registration Regulation and the Guidelines. In May 2022, an investigation was conducted by OFCA regarding a suspected non-compliance case by a telecommunications service provider for failing to ensure completion of real-name registration by its subscribers before service activation. The CA, having considered OFCA's assessment and the telecommunications service provider's representations, issued a direction to it on 21 October 2022 for rectifying its breach of the Registration Regulation.



為確保電話實名制有效落實及提升公眾對實名登記制的認識，通訊辦於深水埗區進行市場巡察行動。

OFCA conducted a market surveillance in Sham Shui Po District to ensure effective implementation and enhance public awareness of the Real-name Registration for SIM Cards.

OFCA will continue to work with telecommunications service providers to enhance the registration platforms taking into account the operational experiences since the implementation of the RNR Programme, and to conduct regular sample checks on the registration information to safeguard the integrity of the registration records. OFCA will also keep on carrying out enforcement and monitoring actions, including verification of telecommunications service providers' registration platforms, market surveillances and regular inspections of the registration records.

Combating Fraudulent Calls and Messages

OFCA has been working closely with the telecommunications industry and law enforcement agencies to devise and implement technical measures against fraudulent calls and messages delivered through telecommunications networks. In September 2022, OFCA, the Police and the telecommunications industry set up a Working Group on Tackling Fraudulent Calls and Messages by the Telecommunications Industry (the Working Group) to further coordinate efforts to combat fraudulent calls and messages from the telecommunications perspective. To provide a clear licensing and regulatory framework for the implementation of the relevant measures to tackle fraudulent calls and messages, OFCA assisted the CA in introducing a new licence condition and made amendments to relevant regulatory instruments to set out express provisions for the purpose.

Through the concerted effort of the members of the Working Group, the telecommunications industry has introduced a number of new measures successively since the fourth quarter of 2022, including (a) sending voice or text alert for calls with caller number prefixed with "+852" to alert mobile service users that the calls are from outside Hong Kong, (b) blocking transmission or delivery of calls bearing suspicious or spoofed caller identity, and (c) blocking access to suspicious websites and suspending telecommunications services of local phone numbers involved in scam cases based on information provided by the Police. OFCA will continue to work with the telecommunications industry and the Police to enhance the effectiveness of the measures.

3

迎接電訊市場新挑戰 Meeting the New Challenges of the Telecommunications Market

促進用於無線區域網絡的6吉赫器件的使用和營商活動

隨着技術發展，新近面世的無線區域網絡器件可在5925—6425兆赫頻帶操作（例如俗稱的Wi-Fi 6E器件，統稱「6吉赫器件」），支援更高速、更低時延的數據傳輸，從而發揮更佳性能。為引入這些6吉赫器件到香港，通訊辦協助通訊局在2022年4月設立類別牌照以規管6吉赫器件的使用和營商活動，以及更改現行提供公共無線區域網絡服務類別牌照。

自設立及更改有關的類別牌照後，現時6吉赫器件（包括接入點及客戶端器件）在香港已開始普及，使用這些器件的市民在私人及公眾地方均可享受高性能的無線區域網絡服務。通訊辦已在其網站新增專頁，就選購6吉赫器件提供意見，以便消費者作出明智選擇。此外，通訊辦也製作了資料單張，提醒業界如在香港售賣6吉赫接入點，須根據6吉赫器件類別牌照遵守有關標籤規定。

同意數碼通電訊有限公司逐步終止第二代流動（2G）服務

通訊辦已處理數碼通電訊有限公司（數碼通）向通訊局提出在2022年10月或之前停止提供2G服務的申請。根據相關牌照條件，流動網絡營辦商必須令通訊局信納受影響的

客戶得到妥善及適當的安排，方可停止提供某一代的流動服務。經通訊辦協助審批，通訊局於2022年8月同意接納數碼通的申請，考慮因素包括數碼通已經沒有向任何客戶提供2G服務計劃、仍在使用的2G手機／裝置連接數碼通網絡的受影響客戶比例極低、數碼通已為受影響客戶提供優惠方案以提升其2G手機／裝置級別、為不選擇2G手機／裝置升級的客戶提供適當的終止服務安排，以及給予受影響客戶充分時間的通知和客戶服務支援。數碼通已由2022年10月14日起終止提供其2G服務。

智能收費電話亭測試

在通訊辦及其他政府部門的支持下，主要公眾收費電話機服務營辦商香港電話有限公司及Hong Kong Telecommunications (HKT) Limited (HKT) 於2023年3月開始進行智能收費電話亭測試（智能電話亭），目的是活化傳統的公眾收費電話機電話亭。HKT分別於2023年4月及5月在銅鑼灣及中環安裝兩個智能電話亭作測試。除了可提供公眾收費電話及免費Wi-Fi服務外，智能電話亭具備多項功能及資訊服務，例如體溫檢測、鄰近一帶可提供的交通服務、公共設施和非政府組織服務，以及新聞及天氣資訊，以供市民免費試用。HKT將在測試期結束後檢視公眾的反應及回饋。通訊辦會繼續為HKT提供協調支援。

切勿從海外購買 Wi-Fi 6E/7 接入點 在香港使用

一些經濟體系（例如加拿大和美國）使用的Wi-Fi 6E/7接入點（例如無線路由器和）在6.425-7.125吉赫頻帶操作，並不符合香港的技術規格和要求，因此不可以在香港使用。

根據《電訊條例》（第106章）的規定，管有或使用不符合香港技術規格和要求的未經授權無線電通訊器材，最高可處罰款港幣50,000元及監禁兩年。

可以在香港使用的Wi-Fi 器件

- 在2.4吉赫及/或5吉赫頻帶操作的傳統Wi-Fi 器件（例如Wi-Fi 4、5和6）、藍牙（包括藍牙）（暫免令）¹及藍牙低功耗。
- 在5.925-6.425吉赫頻帶操作的Wi-Fi 6E/7器件，根據通訊事務管理局（通訊局）設立的6吉赫器件類別牌照²獲准使用。
- 消費者可管有及使用（暫免令）³符合該類別牌照類別所涵蓋的Wi-Fi 器件，而無管中傳訊類別牌照及提交標籤。

1. 2.4吉赫頻帶：2.4-2.4835吉赫
2. 5吉赫頻帶：5.15-5.35吉赫、5.47-5.725吉赫及5.725-5.85吉赫
3. <https://www.sar.gov.hk/infocentre/faq/2022/04/01/20220401-01.html>
4. <https://www.sar.gov.hk/infocentre/faq/2022/04/01/20220401-01.html>
5. <https://www.sar.gov.hk/infocentre/faq/2022/04/01/20220401-01.html>
Class_License_Req_6_GHz_Device_ITCH01.pdf

不可以在香港使用的Wi-Fi 器件

消費者應注意，那些在6.425-7.125吉赫頻帶操作，供加拿大、美國及其他經濟體系使用的Wi-Fi 6E/7器件，在香港**並不能**使用。

| Wi-Fi 器件 | 5.925-6.425 GHz 頻帶 | 6.425-7.125 GHz 頻帶 |
|----------|--------------------|--------------------|
| Wi-Fi 4 | ✓ | ✓ |
| Wi-Fi 5 | ✓ | ✓ |
| Wi-Fi 6 | ✓ | ✓ |
| Wi-Fi 6E | ✓ | ✗ |
| Wi-Fi 6E | ✓ | ✗ |
| Wi-Fi 7 | ✗ | ✗ |

Wi-Fi 器件的驗證和標籤

- 獲准並用於香港出售的Wi-Fi 6E/7接入點必須加上標籤以標籤，以標明該器件經認證符合訂可的技術規格要求，可在香港使用。
- 消費者在選購Wi-Fi 6E/7接入點時，應留意是否有標籤以標籤。
- 由於Wi-Fi 4/5/6器件及Wi-Fi 6E/7客戶端器件（例如USB Wi-Fi適配器、智能電話和手提電腦）的驗證和標籤均屬自願性質，此類器件或未貼有標籤的標籤，無論如何，我們鼓勵消費者購買經認證的Wi-Fi器件。


插入點和客戶端器件的驗證和標籤

| Wi-Fi 器件 | 驗證性 | 自願性 |
|---------------|-----|-----|
| Wi-Fi 4/5/6器件 | 自願性 | 自願性 |
| Wi-Fi 6E/7器件 | 自願性 | 自願性 |

查詢詳情請前往：
<https://apps1.apple.com/HK/app/ictf/content/listEquip.asp?lang=C>

通訊辦派發資料單張提醒消費者有關選購6吉赫器件的建議。

OFCA distributes leaflets to provide advice to consumers on how to select 6 GHz devices.



To help the public verify the authenticity of SMS senders, OFCA is working with the telecommunications industry, the banking industry and the Police to establish a registration scheme for SMS senders which is targeted to be launched before the end of 2023.

At the same time, OFCA assisted the CA in the issue of a Code of Practice on Management of Scam Calls by Mobile Service Providers on 21 April 2023. Under the code of practice, mobile service providers are required to monitor calls originating from their networks and systems and prevent the use of individual local telephone numbers/codes from generation of scam calls. They are required to take appropriate actions to suspend the relevant telecommunications services/functions of any local telephone numbers/codes that are identified as generating suspected scam calls. The code of practice came into operation on 30 June 2023. From July to August 2023, mobile service providers have suspended the telecommunications services of about 200,000 local telephone numbers in accordance with the code of practice.

Facilitating the Use of and Trade in 6 GHz Devices for Wireless Local Area Network

With the advent of technology, there are emerging new Wireless Local Area Network (WLAN) devices operating in the 5925 – 6425 MHz band (such as the commonly known Wi-Fi 6E devices, collectively referred to as “6 GHz devices”) which support better performance in terms of faster data rates and lower latency. To enable the introduction of these 6 GHz devices into Hong Kong, OFCA assisted the CA in creating the class licence for regulating the use of and trade in 6 GHz devices, and varying the existing class licence for the provision of public WLAN services in April 2022.

Following the creation and variation of these class licences, 6 GHz devices (including access points and client devices) are now widely available in Hong Kong, and the use of these devices allows the public to enjoy high performance WLAN services in both private and public locations. OFCA has introduced a dedicated page on its website providing advice to consumers on making informed choice of 6 GHz devices. In addition, information leaflets are made available to remind the industry on the labelling requirement for 6 GHz access points offered for sale in Hong Kong under the class licence for 6 GHz devices.

Consent Granted to SmarTone Mobile Communications Limited to Phase Out 2G Services

OFCA processed an application from SmarTone Mobile Communications Limited (SmarTone) seeking the CA’s approval to cease its provision of 2G services by October 2022. Under the relevant licence conditions, MNOs are required to make proper and appropriate arrangements for the affected customers to the satisfaction of the CA before ceasing to provide a generation of mobile service. With OFCA’s assistance in vetting the application, the CA has granted consent to SmarTone in August 2022, having taken into account relevant considerations including that no 2G service plans were provided by SmarTone to any customers; the extremely low percentage of affected customers who were still using 2G handsets/devices for connection to SmarTone’s network; incentive offers provided by SmarTone to the affected customers to upgrade their 2G handsets/devices; favourable termination arrangements for those who chose not to upgrade their 2G handsets/devices; and sufficient time of notification and customer support to the affected customers. SmarTone ceased the provision of all its 2G services from 14 October 2022.

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迎接電訊市場新挑戰

Meeting the New Challenges of the Telecommunications Market

固網寬頻服務的發展

隨着固網營辦商持續擴展網絡，香港現時的寬頻服務滲透率非常高。截至2023年3月，香港有約300萬住宅及商業固網寬頻用戶，住戶寬頻滲透率已超越99%。當中85%的住戶正享用以光纖網絡提供的高速寬頻服務。

根據歐洲光纖到戶議會於2023年4月發出的報告，香港住戶連接光纖到戶／光纖到樓的滲透率，在全球參與評比的86個經濟體系當中排名第四。

推出新光纖接達樓宇標籤計劃

為了向公眾人士（包括大廈業主和大廈管理處）推廣大廈接達光纖網絡的好處，通訊辦推出光纖接達樓宇標籤計劃，並於2022年11月展開相關宣傳活動。在該計劃下，通訊辦以固網營辦商、大廈業主、大廈管理處及物業發展商提供的資料為基礎，編製和備存一份光纖網絡接達樓宇的登記冊。該登記冊以地理信息系統形式公開於通訊辦網頁供公眾查閱。通訊辦鼓勵相關大廈業主或大廈管理處在其大廈張貼指定標籤，以標示有關樓宇已接達光纖網絡。截至2023年3月，逾67 000幢樓宇已登記參與該計劃，涵蓋超過90%的居住屋宇單位。



通訊辦推出電視宣傳短片以宣傳新推出的光纖接達樓宇標籤計劃。

OFCA launched TV Announcement in Public Interest (API) to promote the new labelling scheme for buildings with optical fibre access.



• 光纖網絡提供高容量、極高速和低延遲的固網寬頻服務，能支援各種先進電訊服務和智能設施。
• 大廈住戶／用戶可聯絡網絡營辦商，了解接達本大廈的光纖網絡服務詳情。



通訊事務管理局
COMMUNICATIONS
AUTHORITY

For English details, please visit <https://www.ofca.gov.hk/fibrenetwork/en>





Trial of Smart Payphone Kiosk

With the support of OFCA and other government departments, PCCW-HKT Telephone Limited and Hong Kong Telecommunications (HKT) Limited (HKT), a major operator of public payphone service, commenced in March 2023 a trial of smart payphone kiosk (Smart Kiosk) with the aim of revitalising traditional kiosk-type public payphones. HKT installed two trial Smart Kiosks in Causeway Bay and Central in April and May 2023 respectively. Apart from providing public payphone and free Wi-Fi services, the Smart Kiosks are equipped with multiple functions and information services such as body temperature checking, availability of transportation services, public facilities and services of non-government organisations in the vicinity, as well as news and weather information provided to the public free-of-charge. HKT will review the responses and feedback from the public after the trial period. OFCA will continue to provide coordination support to HKT.



於2023年4月，一個位於銅鑼灣的智能電話亭已安裝及進行測試。

In April 2023, a Smart Kiosk was installed for trial in Causeway Bay.

Development of Fixed Broadband Services

With the continual network expansion of FNOs, Hong Kong now enjoys an extraordinarily high penetration of broadband services. As of March 2023, there were around 3 million residential and commercial fixed-broadband subscriptions, with household penetration rate reaching over 99%, among which 85% of the households are enjoying fixed-broadband services via optical fibre.

According to a report issued by the Fibre to the Home Council Europe in April 2023, among the 86 economies under comparison, Hong Kong ranked fourth worldwide in fibre to the home/building household penetration.

Launching the New Labelling Scheme for Buildings with Optical Fibre Access

To promote the awareness of the public including building owners and building management offices (BMOs) on the merits of having optical fibre networks in their buildings, OFCA launched a labelling scheme for buildings with optical fibre access and the associated publicity activities were kicked off in November 2022. Under the scheme, OFCA compiles and maintains a register of buildings connected with optical fibre networks based on information provided by FNOs as well as building owners, BMOs and property developers. The register, in the form of a geographical information system, is open to public inspection on OFCA's website. The relevant building owners or BMOs are encouraged to display the designated label at their buildings indicating that the buildings have access to optical fibre networks. As of March 2023, more than 67 000 buildings were registered under the scheme, covering over 90% of living quarters.

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迎接電訊市場新挑戰

Meeting the New Challenges of the Telecommunications Market

新的海底電纜系統在香港登陸

經通訊辦協助提供綜合聯絡服務，多個新的區域或洲際海底電纜系統和四個本地海底電纜系統亦正在興建中，並擬於2023年至2026年期間投入服務。通訊辦將繼續協助營辦商申請新的海底電纜系統在香港興建及登陸所需的法定許可。

協助在春坎角電訊港的土地建設對外電訊設施進行招標

為加強香港作為區域電訊樞紐的角色，並滿足本港在對外電訊設施方面日益殷切的需求，通訊辦一直與相關的決策局及部門合作，在春坎角電訊港提供合適土地供對外電訊基建設施之用，以進一步提升香港對外電訊網絡的整體容量和分流能力。地政總署進行招標工作後，兩幅位於春坎角電訊港的土地已分別於2022年8月和2023年3月批予中標者。

評估用作電話機樓及其他電訊相關設施的批地使用情況

政府批予電訊營辦商用作設置和營運電話機樓及其他電訊相關設施的42幅批地契約將於2025年屆滿。為協助政府考慮現行地契年期屆滿後處理該等用地的未來路向，通訊辦會繼續就有關事宜從電訊政策的角度向政府提供支援和意見。

完成有關無線電基站非電離輻射安全的技術研究

2021年4月，通訊辦就無線電基站（包括5G無線電基站）非電離輻射安全進行技術顧問研究。該項研究已於2022年6月完成，相關顧問報告亦已於2022年8月在通訊辦網站上公布。該項研究審視非電離輻射的相關技術事宜，尤其是採用大規模多輸入多輸出天線等新技術的5G無線電基站，檢討在不同無線電基站配置情況下評估非電離輻射的方法和現行的規管措施，並就控制無線電基站輻射安全所應採取的實際措施提出建議。通訊局在考慮有關研究結果及建議後，更新了在不同場景下設置無線電基站所適用的審批條件，以促進公共流動服務的持續發展，並同時保障市民健康。

通訊辦會不定期對全港已獲准使用的基站，進行抽樣實地輻射水平測量，以保障市民健康。

OFCA conducts sample checks on the radiation levels of approved radio base stations from time to time to safeguard public health.





Landing of New Submarine Cable Systems in Hong Kong

With the support of OFCA's single-point-of-contact service, several new regional or transcontinental submarine cable systems as well as four domestic systems are under construction and scheduled to be put into service between 2023 and 2026. OFCA will continue to assist operators in applying for the necessary statutory approvals for the construction and landing of new submarine cable systems in Hong Kong.

Facilitating Allocation of Land Lots in Chung Hom Kok Teleport for Construction of External Telecommunications Facilities

In order to reinforce Hong Kong's role as a regional telecommunications hub and meet the growing demand for external telecommunications facilities, OFCA has been working with relevant bureaux and departments to make available suitable land lots in the Chung Hom Kok Teleport for external telecommunications infrastructure, so as to further enhance the overall capacity and diversity of Hong Kong's external telecommunications networks. Following the tender exercises conducted by LandsD, two land lots at the Chung Hom Kok Teleport were awarded to successful tenderers in August 2022 and March 2023 respectively.

Assessing the Use of the Sites Granted for Telephone Exchanges and Other Telecommunications-Related Facilities

The land leases of 42 sites granted to telecommunications operators for establishing and operating telephone exchanges and other telecommunications-related facilities will expire in 2025. To facilitate the Government's consideration of the way forward for handling these sites upon lease

expiry, OFCA will continue to provide support and advice to the Government on the issue from the telecommunications perspective.

Completion of a Technical Study on Non-Ionising Radiation Safety of Radio Base Stations

In April 2021, OFCA conducted a technical consultancy study on non-ionising radiation (NIR) safety of RBSs, including 5G RBSs. The study was completed in June 2022 and the consultancy report was published on OFCA's website in August 2022. The study examined technical matters in relation to NIR, in particular those for 5G RBSs employing new technology like massive multiple-input-multiple-output antennas, reviewed the methodology for assessment of NIR for different RBS deployment scenarios and the existing regulatory measures, and made recommendations on practical measures to control the radiation safety of RBSs. Having considered the findings and recommendations of the study, the CA has updated the conditions for approval of RBSs under different scenarios so as to facilitate the ongoing development of public mobile services while safeguarding public health.



基站符合安全標準有效支援5G網絡。

To ensure effective support for 5G network, radio base stations must comply with safety standards.

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迎接電訊市場新挑戰

Meeting the New Challenges of the Telecommunications Market

香港衛星網絡的發展

由於衛星頻譜和軌道位置屬稀有和珍貴的天然資源，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。通訊辦支援本港的持牌衛星營辦商與外國當局協調，並協助處理有關操作在軌衛星的牌照事宜。截至2023年3月，共有九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

通訊辦緊貼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2022/23年，通訊局根據《修訂條例》就三項涵蓋幾類電訊設備的技術標

準作出修訂，並批准和發出了兩項規管6吉赫器件及5G轉發器設備的新技術標準。

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為不同種類的電訊設備提供測試和驗證服務，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2022/23年，本地和海外認證機構簽發了575份設備認證，以應付電訊設備市場需求。

為確保所有提供電訊設備測試和驗證服務的本地認證機構符合所要求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、進行實地視察和檢查他們的工作。目前，所有本地認證機構的表現均符合通訊辦訂明的要求。



位於牛頭角配水庫的新衛星電視廣播監測系統於2023年4月26日正式運作。

The new Satellite Broadcast Monitoring System located at the Ngau Tau Kok Service Reservoir was put into operation on 26 April 2023.

Development of Hong Kong's Satellite Networks

Since satellite spectrum and orbital positions are scarce and invaluable natural resources, the use of these resources by communications satellites should comply with the coordination and notification requirements of the ITU. OFCA supports local licensed satellite operators to coordinate with foreign administrations and assists in the processing of



通訊辦職員在觀塘視察衛星廣播監察系統的更換進度。

OFCA staff members inspecting the replacement progress of the satellite broadcast monitoring system in Kwun Tong.

licences for the operation of satellites in space orbits. As of March 2023, there were nine satellites in orbit operated by two Hong Kong companies licensed to provide satellite communications services.

Setting and Enforcing Telecommunications Standards

OFCA stays abreast of international developments in telecommunications standardisation and updates local technical standards in order to meet the needs of the industry and the public. In 2022/23, three technical standards covering several types of telecommunications equipment were revised pursuant to the Amendment Ordinance and two new technical standards governing 6 GHz devices and 5G repeater equipment were approved and issued by the CA.

Qualified local and overseas testing laboratories are now providing testing and certification services for different kinds of telecommunications equipment in accordance with technical standards prescribed by the CA. In particular, a full range of telecommunications equipment testing and certification services are offered by local laboratories accredited by the CA as local certification bodies (LCBs). In 2022/23, LCBs and foreign certification bodies issued 575 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 required service quality and performance standards, OFCA will continue to closely monitor their performance by conducting regular documentary checks, on-site visits and reviews. So far, all LCBs have complied with the requirements set by OFCA.