

1

總監報告

Message from the Director-General



縱然香港於2022/23年度仍持續面對新冠疫情為社會與經濟帶來的挑戰，本港的通訊市場仍能保持強勁增長。通訊辦會致力推動通訊業發展，令有關業務更上一層樓，同時鞏固香港作為區域通訊樞紐的地位。

In 2022/23, Hong Kong's communications markets remained robust amidst the social and economic challenges continually brought by the COVID 19 pandemic. OFCA is committed to facilitating the communications sector to achieve greater heights while upholding Hong Kong's position as a regional communications hub.

梁仲賢先生，JP
Mr Chaucer LEUNG, JP

通訊事務總監
Director-General of Communications



我欣然呈上通訊事務管理局辦公室（通訊辦）2022/23年營運基金年報。報告分為三個部分。首先，我會闡述香港通訊業的最新形勢，然後回顧通訊辦在過去一年的主要工作，並探討我們未來可能面對的挑戰。

市場概況

電訊市場

過去一年，香港的通訊業仍然面對新冠疫情帶來的種種挑戰。儘管如此，我喜見本地的電訊市場在固網及流動服務方面依然有強勁及穩固的發展。年內，香港的流動服務用戶滲透率繼續保持領先地位，錄得約2 200萬流動服務用戶，滲透率高達本地人口約282%。此外，流動數據用量亦有大幅增長，反映流動互聯網市場在面對經濟挑戰時

仍持續蓬勃發展。在2023年3月，流動數據用量超過167 401太字節，人均流動數據用量超過22吉字節，兩者均較2022年3月報告的數據增加超過30%。

第五代流動（5G）服務方面，自2020年4月1日推出商用服務以來，香港的5G網絡覆蓋擴展突飛猛進，令人鼓舞。全賴本地電訊服務營辦商積極擴建網絡，香港現時擁有一個規模龐大的5G網絡，覆蓋九成人口，遍布全港人口密集的地區、熱門商場及所有港鐵站，服務約510萬客戶，佔人口68%。5G技術的巨大潛力將造就更多元化的創新應用及新商機，使香港各行各業以至整個社會均同時受惠。

我亦特此報告，香港的住戶寬頻滲透率已超越99%，當中85%的住戶正享用由光纖網絡提供的高速寬頻服務。光纖為香港目前主要採用的固網接達技術，讓商業及個人用戶得以接達各式各樣的先進通訊服務和應用。

It is my pleasure to present the Trading Fund annual report 2022/23 of the Office of the Communications Authority (OFCA). The report contains three sections. Firstly, I would like to share the updated status of the communications landscape of Hong Kong. I would then highlight our major work in the past year and address the potential challenges ahead.

Market Overview

Telecommunications Market

In the past year, the communications sector was coping with the challenges brought by the COVID-19 pandemic. Nonetheless, I am pleased to report that Hong Kong's telecommunications market remained strong and resilient in both the development of fixed and mobile services. During the year, Hong Kong continued to maintain its leading role in terms of the penetration rate of mobile service subscriptions, recording some 22 million mobile service subscriptions representing a remarkably high penetration rate of 282% among the local population. The substantial growth in mobile data usage also reflected that the mobile internet market continued to flourish despite the economic challenges. In March 2023, more than 167 401 Terabytes of mobile data were consumed, or over 22 Gigabytes per capita, both representing increases of over 30% as compared with that reported in March 2022.

On the front of the fifth generation mobile (5G) services, it is encouraging to see that since its commercial launch on 1 April 2020, 5G coverage in Hong Kong has expanded by leaps and bounds. Thanks to the active network expansion by local telecommunications service operators, Hong Kong now possesses an extensive 5G network covering 90% of the population. The network covers populated districts, popular shopping centres and all mass transit railway stations, serving about 5.1 million customers, representing 68% of the population. The enormous potentials of 5G technology will bring about a wider range of innovative applications and new business opportunities, benefiting various industries and the Hong Kong society as a whole.

I also take great pleasure to report that Hong Kong's fixed-broadband network has achieved over 99% household penetration rate, among which 85% of households are enjoying the high-speed broadband services via optical fibre. Optical fibre, as the dominant fixed network access technology in Hong Kong, enables both business and personal users to have access to various state-of-the-art communications services and applications.

Broadcasting Market

Hong Kong's broadcasting market continues to be robust in spite of the rapid emergence of Internet-based media services. In 2022/23, the public was able to access around 800 local and overseas television programme channels in various languages through free-to-air, pay and satellite television services as well as 14 local radio programme channels. With our pre-eminent geographic position and well established infrastructure, Hong Kong is an ideal regional satellite uplink location with nine non-domestic licensees delivering around 140 satellite television programme channels throughout Asia-Pacific. With the adoption of Open Sky Policy by the Government, around 500 free satellite television programme channels are now available for reception in Hong Kong.



廣播市場

在網上媒體服務湧現下，香港的廣播市場仍繼續穩健發展。在2022／23年度，公眾可收看本地和海外約800條以多種語言廣播的免費電視、收費和衛星電視節目頻道，以及收聽14條本地電台節目頻道。香港地理位置優越，加上基礎設施完善，是理想的地區衛星上傳地點。現時香港有九家非本地電視節目服務持牌機構在亞太地區提供約140條衛星電視節目頻道。在政府的「開放天空」政策下，本港現時可以接收到約500條免費衛星電視節目頻道。

2022／23年度的主要工作回顧

儘管本港和海外經濟正面臨種種挑戰，通訊辦在2022／23年度依然邁步向前。我們的主要工作回顧如下。

電訊服務

通訊辦去年協助通訊事務管理局（通訊局）指配70兆赫在低頻帶內的新頻譜以支援5G服務，因此在低、中、高頻帶



內指配供5G服務之用的頻譜合計已達2 130兆赫。通訊辦已就頻譜供應成立了內部專責小組，以確保可適時釋放頻譜，配合業界和用戶對新興通訊的需求。此外，我們亦積極關注全球及區域性的電訊業發展趨勢和頻譜規劃措施。其中，我們會密切留意即將於2023年年底舉行的2023年世界無線電通信大會上國際電訊聯盟物色流動服務（包括5G服務）新頻帶的進展。

今年其中一項主要工作是透過搬遷或提升區內的衛星設施撤銷大埔的「3.5吉赫限制區」。其中一家衛星營辦商已決定將設施由大埔遷往春坎角電訊港，而另一家衛星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。「3.5吉赫限制區」預計可於2024年年底前撤銷，而流動網絡營辦商現時正透過利用其他頻帶或重整現有作3G／4G用途的頻帶，在大埔區提供5G服務。



春坎角電訊港 Chung Hom Kok Teleport

為加強5G基礎設施，行政長官在2022年施政報告公布，政府計劃修訂法例及相關指引，以確保新建樓宇須預留適當空間裝設流動通訊設施。就此，通訊辦協助商務及經濟發展局（商經局）制定具體方案和進行業界諮詢，以收集各相關持份者的意見。

Highlights of Our Work in 2022/23

Despite economic challenges in Hong Kong and abroad, OFCA made substantial strides in 2022/23. Below are some of our major highlights.

Telecommunications Services

Last year, OFCA assisted the Communications Authority (CA) in assigning 70 MHz of new spectrum in the low frequency bands to support 5G services, making a total of 2 130 MHz of spectrum in the low, mid and high frequency bands assigned for the provision of 5G services. We have set up an in-house task force on spectrum supply to ensure the timely release of spectrum and to keep pace with emerging communications demands from the industry and consumers. Besides, we are also actively taking heed of development trends in both global and regional telecommunications and spectrum planning initiatives. In particular, we have been closely monitoring the development of the potential identification of new frequency bands for mobile services, including 5G services, by the International Telecommunication Union at the upcoming World Radiocommunication Conference 2023 to be convened in late 2023.

One of the major activities during the year involved lifting of the “3.5 GHz restriction zone” in Tai Po by relocating or upgrading the satellite facilities in the area. One satellite operator has decided to relocate its facilities from Tai Po to the Chung Hom Kok Teleport and another satellite operator has undertaken to install band-pass filters at its satellite facilities to prevent radio interference. While the “3.5 GHz restriction zone” is expected to be lifted before the end of 2024, mobile network operators (MNOs) are now making use of other frequency bands or re-farming existing bands for 3G/4G to provide 5G services in Tai Po.

For strengthening 5G infrastructure, the Chief Executive announced in the 2022 Policy Address that the Government would amend the legislation and relevant guidelines to ensure appropriate space will be made available in new buildings for installation of mobile communications facilities. In this regard, OFCA assisted the Commerce and Economic Development Bureau (CEDB) to formulate the proposal and conduct an industry consultation to collect the views of relevant stakeholders.

To encourage various sectors to deploy 5G technology early to foster innovation and smart city applications, OFCA has been administering the “Subsidy Scheme for Encouraging Early Deployment of 5G” (the Scheme) launched under the Anti-epidemic Fund since May 2020. Under the Scheme, the Government will subsidise 50% of the cost of deployment of 5G technology in an approved project, subject to a cap of HK\$500,000. The Scheme has received very positive responses across different sectors, and brought about many novel 5G applications to enhance business operations and quality of services, benefiting the society at large. Overall, the Scheme facilitates smart city development while opening up more business opportunities and room for development of start-up businesses and enhances their competitiveness in today’s digital landscape.



1

總監報告

Message from the Director-General

為了鼓勵各界及早使用5G技術，推動創新和智慧城市的應用，通訊辦自2020年5月起透過防疫抗疫基金推行的「鼓勵及早使用5G技術資助計劃」。在該計劃下，政府會資助獲批項目中使用5G技術所需開支的50%，上限為港幣50萬元。該計劃廣受不同行業好評，實現多項有助提升業務營運和服務質素的創新5G應用，為整體社會帶來裨益。總括來說，該計劃促進智慧城市發展，同時亦為初創企業開拓更多商機及發展空間，提高企業在現今數碼時代的競爭力。

為配合政府的政策措施，通訊辦亦正推行一項涉及港幣7.7億元撥款的資助計劃，為固網營辦商提供經濟誘因將光纖網絡擴展至235條位於偏遠地區的鄉村（資助計劃）。隨着資助計劃的六個投標項目在2019年11月至2020年5月期間悉數批出，獲選的固網營辦商已完成擴展光纖網絡至超過120條鄉村，並在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。通訊辦會繼續監察這些項目的實施，目標是於2026年完成整個資助計劃。



海纜工作船船長向通訊辦職員展示鋪設連接南丫島、長洲和坪洲海底光纖電纜的監察系統。

The captain of the work vessel showing OFCA staff members the monitoring system used for laying the submarine fibre-based cables connecting Lamma Island, Cheung Chau and Peng Chau.

《2021年電訊（修訂）條例》旨在修訂《電訊條例》（第106章）的相關條文，並已於2022年6月24日起生效，以更新有關5G及物聯網裝置的電訊功能的規管安排、加強對地下電訊基建設施的保護、簡化非傳送者牌照的簽發，以及改善《電訊條例》下的上訴機制。為保護地下電訊設施而修訂的《電訊條例》第18A條生效僅一年多，已有四宗成功檢控的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，預計執法行動將會提升公眾對需要保護相關設施的認識，及減少施工期間因意外損壞這些設施而可能造成的服務中斷。

此外，通訊辦亦支援商經局全面落實《電訊（登記用戶識別卡）規例》（《登記規例》）。由2023年2月24日起，所有在本地發出及使用的電話智能卡均須於啟動服務前完成實名登記。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。通訊辦一直與有關持牌電訊商緊密聯繫進行監察及執法工作，包括進行定期檢查、市場巡查和公眾教育，以確保《登記規例》有效實施。

鑑於電話騙案的個案數字顯著上升，通訊辦、警方及流動網絡營辦商於2022年9月成立了工作小組，以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。在我們的協調下，電訊業界自2022年第四季起，陸續實施多項新措施，包括(a)就「+852」開頭的境外來電發送話音或文字訊息，以提醒流動服務用戶有關來電源自香港境外、(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。據警方表示，該等措施能有效打擊詐騙電話和訊息。



In support of the Government's policy initiative, OFCA is also implementing a subsidy scheme with a funding of HK\$770 million to provide financial incentives for fixed network operators (FNOs) to extend their fibre-based networks to 235 villages in remote areas (the Subsidy Scheme). Following the award of all six tender projects under the Subsidy Scheme between November 2019 and May 2020, the FNOs selected have now extended their fibre-based networks to more than 120 villages and rolled out three submarine fibre cables connecting Lamma Island, Cheung Chau and Peng Chau in May 2023. OFCA will continue to monitor the implementation of these projects and target for full completion of the Subsidy Scheme by 2026.

The Telecommunications (Amendment) Ordinance 2021 that sought to amend relevant provisions of the Telecommunications Ordinance (Cap. 106) (TO) came into operation on 24 June 2022. The amended TO aims to update the regulatory arrangements on telecommunications functions of 5G and Internet of Things (IoT) devices, enhance the protection of underground telecommunications infrastructure, simplify the issue of non-carrier licences and improve the appeal mechanism under the TO. Having the amended section 18A of the TO in force for just over a year to provide protection of underground telecommunications facilities, four successful prosecution cases had been brought with fines ordered by the Magistrates, and five cases are under investigation or prosecution. It is anticipated that the enforcement actions will raise public awareness of the need for such protection and minimise the potential disruption caused by accidental damage to these facilities during the construction work.

OFCA also supported CEDB to fully implement the Telecommunications (Registration of SIM Cards) Regulation (the Registration Regulation). Starting from 24 February 2023, all subscriber identification module (SIM) cards issued and used locally must complete real-name registration before service activation. As of 31 March 2023, about 13 million SIM cards (including SIM service plans and pre-paid SIM (PPS) cards) had completed registration. OFCA

has been working closely with relevant licensees to undertake monitoring and enforcement actions, including regular inspections, market surveillance and public education, to ensure the effective implementation of the Registration Regulation.

In view of the marked increase in the number of telephone fraud cases, OFCA, the Police and MNOs have set up a working group in September 2022 to devise and implement technical measures against fraudulent calls and messages delivered through telecommunications networks. With our coordination, a number of new measures have been implemented successively since the fourth quarter of 2022 by the telecommunications industry, including (a) sending voice or text alert for incoming 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 calling line identification (CLI), 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. According to the Police, such measures are effective in combating fraudulent calls and messages.

OFCA will continue to review the situation and explore additional measures with various sectors to combat phone scam, including the work with the telecommunications industry, the banking industry and the Police to set up a registration scheme for Short Messaging Service (SMS) senders which aims to assist the public in ascertaining the authenticity of SMS sender addresses.



1

總監報告

Message from the Director-General

通訊辦會持續檢視情況及聯同各界探討新措施，以打擊電話騙案。當中包括與電訊業、銀行業和警方合作，研究設立短訊發送者登記制度，以協助市民識別短訊發送者地址的真偽。

詐騙電話對市民大眾構成嚴重的社交及財務影響。通訊辦一直與業界和執法機關從電訊角度攜手打擊詐騙電話，亦協助通訊局在2023年4月發出《流動服務供應商管理詐騙電話的業務守則》。該業務守則於2023年6月30日生效，為流動服務供應商提供實務指引，管理由本地流動網絡及系統打出的懷疑詐騙電話，以及確保流動網絡及系統能有效率和可靠地操作。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。

最後，為鞏固香港作為亞太區通訊樞紐的卓越地位，通訊辦與地政總署合作，就春坎角電訊港適合增設對外電訊基礎設施的土地進行招標。兩幅土地已分別於2022年8月及2023年3月批予中標者。

廣播服務

年內，通訊辦協助通訊局完成三個免費電視牌照及兩個聲音廣播牌照的中期檢討，並向行政長官會同行政會議呈交建議。通訊局的建議涵蓋多個範疇，包括鼓勵業界進一步投資、放寬指定語言規定，以及基於觀眾／聽眾的利益而調整對節目的要求（例如增加本地製作、提供字幕及手語服務，以及優化指定播放節目）。2023年2月，行政長官會同行政會議接納通訊局提出的建議，該等建議已透過牌照的修訂及通訊局發出的指示實施。

香港有線電視有限公司（有線電視）就終止其本地收費電視節目服務（收費電視）牌照的申請於2023年2月獲行政長官會同行政會議批准後，通訊辦一直與有線電視作出跟進，確保有線電視在其收費電視服務於同年6月1日終止前，妥善執行所承諾的退場安排及有關的技術調整，以保障用戶權益及觀眾利益。在通訊辦的監察下，有線電視的退場安排得以順利完成。



Fraudulent calls have caused severe social and financial impact on people in the community. In collaboration with the industry and the law enforcement agency to combat fraudulent calls from the telecommunications perspective, OFCA assisted the CA in issuing a Code of Practice on Management of Scam Calls by Mobile Service Providers in April 2023. The code of practice, which came into operation on 30 June 2023, provides practical guidance to mobile service providers in managing suspected scam calls made through local mobile networks and systems as well as ensuring the efficient and reliable operation of mobile networks and systems. 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.

Last but not least, in order to strengthen Hong Kong's status as a pre-eminent communications hub in the Asia Pacific region, OFCA collaborated with the Lands Department (LandsD) to invite tenders for suitable land lots at the Chung Hom Kok Teleport for the establishment of additional external telecommunications infrastructure. Two land lots were awarded to successful tenderers in August 2022 and March 2023 respectively.

Broadcasting Services

During the year, OFCA assisted the CA in completing the mid-term review of three free-to-air television



and two sound broadcasting licences with recommendations submitted to the Chief Executive in Council (CE in C). The CA's recommendations, covering a variety of aspects including encouraging further investment in the industry, relaxing the designated language requirements and refining the programme requirements (such as increase in local productions, provision of subtitling and sign language, and enhancement of positive programmes) for the interest of the viewing/listening public, were accepted and endorsed by the CE in C in February 2023. The recommendations have been implemented by way of licence amendments and directions by the CA.

Following the CE in C's approved termination of the domestic pay television programme service (pay TV) licence of Hong Kong Cable Television Limited (HKCTV) in February 2023 following the latter's application, OFCA had actively followed up with HKCTV to ensure its proper implementation of the committed exit arrangements and the relevant technical adjustments in the run up to the cessation of HKCTV's pay TV service on 1 June 2023, with a view to protecting customer rights and the interest of the viewing public at large. HKCTV's exit arrangements were smoothly completed under OFCA's monitoring.

Major Challenges Ahead

On the broadcasting front, we will assist the CA in conducting a review of its codes of practice, along the general direction of refining the regulatory regime to facilitate the operation of the licensees in meeting the challenges of the rapidly evolving business environment. It is expected that the review will be completed within 2023.

With respect to the 2022 Policy Address initiative to ensure availability of space in and access to new buildings for installation of mobile communications facilities, OFCA will continue to support CEDB in taking forward the proposed legislative amendments and liaise with relevant government departments in making corresponding amendments to the relevant administrative guidelines to implement the proposal for the expansion of mobile networks. OFCA will also assist the CA in formulating a Code of Practice

未來的主要挑戰

在廣播方面，我們將會協助通訊局檢討其業務守則，總體方向是因應持牌機構營商環境日趨困難而進一步優化規管制度，以便利持牌機構的業務運作。預計有關檢討工作將於2023年內完成。

關於2022年施政報告就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的建議，通訊辦會繼續支援商經局推展有關的修例建議，並會就修訂相關行政指引與有關政府部門聯繫，以落實有關裝設流動通訊設施的建議。通訊辦亦會協助通訊局制定《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》，列出標準及最低要求，以規範發展商及流動網絡供應商在指明建築物內裝設流動通訊設施。

我們會繼續與有興趣申請在香港登陸海底電纜的電訊營辦商聯繫，協助他們取得所需的法定許可。

繼通訊局和商經局局長於2023年5月2日以聯合聲明的方式公布850/900兆赫頻帶內20兆赫頻譜及2.3吉赫頻帶內90兆赫頻譜的重新指配安排，以及相關頻譜使用費的

決定，通訊辦將會協助通訊局於2024年舉行相關頻譜拍賣。此外，通訊辦會支援通訊局發放6/7吉赫頻帶內的新頻譜，使5G及其他流動通訊服務得以持續發展。正如《2023-24年度財政預算案》所公布，我們亦會為流動網絡營辦商將來投得的頻譜而須繳付的頻譜使用費給予稅務扣除，以鼓勵其更積極興建流動通訊基礎設施。

為打擊利用電訊網絡進行詐騙的來電及訊息，通訊辦將會繼續與電訊業界、執法機關及相關持份者（包括銀行業界）緊密合作，攜手打擊騙案，以保障電訊服務的健全及通訊網絡的安全。

此外，通訊辦會繼續密切監察各持牌電訊商按照《登記規例》訂明的要求有效推行電話智能卡實名登記的情況。通訊辦會積極進行市場巡查和舉辦宣傳活動，以確保業界和市民大眾均全面遵從實名登記規定。

最後，我要感謝通訊局主席和各委員給予寶貴的指導，也感謝各持牌機構一直竭力支持通訊辦執行其規管職責，並積極對通訊業作出貢獻，促進業界在過去一年來迅速發展。我深信通訊辦的團隊會秉持專業精神、集思廣益和羣策羣力，從而帶領本港的通訊市場百尺竿頭，更進一步。



for the Provision of Mobile Access Facilities in Specified Buildings for the Provision of Public Mobile Radiocommunications Services, setting out the standard and minimum requirements for developers and MNOs for the installation of mobile communications facilities in specified new buildings.

We will continue the liaison with telecommunications operators interested in landing submarine cables to Hong Kong to seek necessary statutory approvals.

Following the promulgation of decisions of the CA and the Secretary for Commerce and Economic Development (SCED) by way of joint statement on 2 May 2023 on the arrangements for re-assignment of 20 MHz of spectrum in the 850/900 MHz band and 90 MHz of spectrum in the 2.3 GHz band as well as the related spectrum utilisation fee (SUF), OFCA will support the CA to conduct the corresponding spectrum auction in 2024. Moreover, OFCA will support the CA to make available new spectrum in the 6/7 GHz band for continuous development of 5G and other mobile communications services. As announced in the 2023-24 Budget, we will also incentivise the provision of mobile communications infrastructure through deducting tax payable on SUF for future bidding of radio spectrum by MNOs.

To combat fraudulent calls and messages transmitted via telecommunications networks, OFCA will continue to maintain close collaboration with the telecommunications industry, law enforcement agencies and relevant stakeholders including the banking sector in combating deception activities in order to safeguard the integrity of telecommunications services and the security of communications networks.

In addition, OFCA will continue to closely oversee the effective implementation of SIM card registration by licensees in accordance with the requirements specified by the Registration Regulation. OFCA will actively conduct market surveillance and publicity activities to ensure full compliance with the real-name registration requirements by the industry and the general public.

To conclude, I would like to thank the Chairman and Members of the CA for their invaluable guidance. My gratitude also goes to our licensees who have been rendering unfailing support to OFCA in performing its regulatory role and actively contributing to the rapid development of the communications sector in the past year. With professionalism, wisdom and dedication of OFCA's work team, I am confident that we will take the local communications market to a new level.

