促進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,例如物聯網、遙距操作、遠程醫療及智能運輸。 香港5G覆蓋廣泛,流動用戶可享用顯著提升的流動服務, 支援高速、高容量、高可靠性、大規模連接和低時延 通訊。

截至2024年3月底,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2130兆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。自商用5G服務於2020年4月1日推出以來,香港的5G覆蓋率截至2024年3月底已超過九成,覆蓋所有人口密集的地區、繁忙的商場及港鐵站。

● 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,在通訊辦協助下,通訊局向市場供應更多不同頻帶的頻譜。通訊辦已安排在6/7吉赫頻帶內操作固定及外勤廣播鏈路的有關使用者遷移至其他頻帶,以在 6/7吉赫頻帶騰出400兆赫頻譜作公共流動服務用途。 6/7吉赫頻帶亦適用於部署6G網絡,使香港成為供應有關頻帶以發

展6G技術的先行者。通訊辦亦在2024年8月完成以行政 方式指配26/28吉赫頻帶內的1 200兆赫非共用頻譜,以 作提供5G或更先進流動服務之用。

● 落實重新指配2.5/2.6吉赫頻帶內的頻譜

隨著2.5/2.6吉赫頻帶中90兆赫的頻譜上一次指配期於2024年3月屆滿,有關頻譜隨即按照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,而部分相關頻譜須於為期15年的新指配期內易手。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。在技術工作小組成員的共同努力下,2.5/2.6吉赫頻帶內的90兆赫頻譜已於2024年3月與新受配者無縫交接。





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 internet of things, remote operation, telemedicine and intelligent transportation. With the extensive 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 end March 2024, 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. Since the launch of commercial 5G services on 1 April 2020, as of end March 2024, 5G coverage in Hong Kong has exceeded 90% with all the populated districts, bustling shopping malls and mass transit railway stations covered.

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 CA's work to release additional spectrum in different frequency bands to the market. OFCA relocated the relevant users of fixed links and outside broadcasting links operating in the 6/7 GHz band to other frequency bands with a view to making available 400 MHz of spectrum in the 6/7 GHz band for public mobile services. The 6/7 GHz band may also be suitable for 6G deployment, making Hong Kong a first mover in releasing relevant frequency band for 6G

development. OFCA also administratively assigned another 1 200 MHz of the non-shared spectrum in the 26/28 GHz band for the provision of 5G or more advanced mobile services in August 2024.

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

Upon expiry of the previous assignment in March 2024, 90 MHz of spectrum in the 2.5/2.6 GHz band was re-assigned to three MNOs following an auction held in October 2021, with the result that some of the frequency assignments in the 2.5/2.6 GHz band would be changing hands in the new 15-year term of assignments. 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. Through the concerted efforts of the technical working group, 90 MHz of spectrum in the 2.5/2.6 GHz band was seamlessly handed over to the new assignees in March 2024.



通訊辦職員實地測試一家流動網絡營辦商的室內網絡覆蓋。

A staff member of OFCA conducting a field measurement on a mobile network operator's indoor network coverage.

● 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,相關頻譜規劃用於提供公共流動服務。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月就重新指配安排及相關頻譜使用費的決定發出聯合聲明。根據上述決定,通訊辦將於2024年11月舉行拍賣重新指配有關頻譜。

● 為指配6/7吉赫頻帶內的頻譜作準備

6/7吉赫頻帶內的頻譜是可用作提供流動服務的最大中頻段頻譜。在通訊辦協助下,通訊局與商經局局長於2023年7月展開聯合公眾諮詢,並於2024年3月發出聯合聲明,公布頻譜指配安排及相關頻譜使用費的決定。根據上述決定,通訊辦將於2024年11月就6/7吉赫頻帶內合共400兆赫的新頻譜舉行拍賣。

● 為重新指配2.5/2.6吉赫頻帶內的頻譜作準備

2.5/2.6吉赫頻帶內的90兆赫頻譜已於2024年3月重新指配予三家流動網絡營辦商,為期15年,而該頻帶內餘下50兆赫頻譜的現有指配期將於2028年5月屆滿。通訊辦協助通訊局和商經局局長於2024年9月就重新指配安排及相關頻譜使用費進行聯合公眾諮詢。

實施擴展光纖網絡至偏遠地區鄉村資助計劃

為配合政府改善偏遠地區網絡覆蓋的政策,通訊辦繼續推行是項獲撥款港幣7.7億元的資助計劃,為固網營辦商提供經濟誘因,由2021年至2026年期間分階段擴展光纖網絡至新界及離島九個地區共235條鄉村,惠及約11萬名村民。由於該等鄉村遠離固網營辦商的現有光纖主幹網,在資助計劃實施前,村民只可選用透過銅線網絡提供而速度不高於每秒10兆比特的寬頻服務。



通訊辦職員就資助計劃下安裝的村內Wi-Fi熱點設施進行驗收工作。

OFCA staff members carrying out an inspection on the installed facilities of in-village Wi-Fi hotspots under the subsidy scheme.



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

The current assignments 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. It is planned that the relevant spectrum will be used for public mobile services. With OFCA's support, CA and the Secretary for Commerce and Economic Development (SCED) conducted a joint public consultation in November 2022 and issued a joint statement in May 2023 about the re-assignment arrangements as well as the related spectrum utilization fee (SUF). Pursuant to the above decision, the spectrum concerned will be re-assigned by way of auction in November 2024.

Preparing for Assignment of Frequency Spectrum in the 6/7 GHz Band

The spectrum in the 6/7 GHz band is the largest block of the mid-band spectrum that can be made available for mobile services. With OFCA's support, CA and SCED launched a joint public consultation in July 2023, and promulgated the decisions through a joint statement issued in March 2024 about the assignment arrangements as well as the related SUF. Pursuant to the above decision, OFCA will conduct an auction for a total of 400 MHz of new spectrum in the 6/7 GHz band in November 2024.

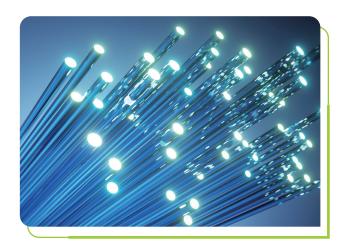
Preparing for Re-assignment of Frequency Spectrum in the 2.5/2.6 GHz Band

Whilst 90 MHz of spectrum in the 2.5/2.6 GHz band was re-assigned to three MNOs in March 2024 for another term of 15 years, the current assignments of

the remaining 50 MHz of spectrum in the same band will expire in May 2028. OFCA provided support to CA and SCED for conducting a public consultation on the re-assignment arrangements and the related SUF in September 2024.

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

In support of the Government's policy initiative to improve network coverage in remote areas, OFCA continued to implement the subsidy scheme with a funding of HK\$770 million to provide financial incentives for FNOs to extend fibre-based networks to 235 villages across nine districts in the New Territories and outlying islands in phases from 2021 to 2026, benefitting about 110 000 villagers. 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 implementation of the subsidy scheme.



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),於2019年11月至2020年5月期間透過資助計劃悉數批出。獲選的固網營辦商負責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,分別連接南丫島至香港島(投標項目五)及連接長洲至大嶼山和坪洲至大嶼山(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。

獲選的固網營辦商至今已把光纖網絡擴展至200條鄉村,並已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。通訊辦會繼續監察資助計劃的推行,光纖網絡預期於2026年或之前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



資助計劃於2023年5月完成鋪設連接南丫島、長洲和坪洲的 海底光纖電纜。

Under the subsidy scheme, the rollout of submarine fibre cables connecting Lamma Island, Cheung Chau and Peng Chau was completed in May 2023.

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。

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

《2022年施政報告》宣布政府將透過修訂條例確保新建樓宇預留適當空間裝設流動通訊設施,以進一步擴展5G網絡。為推展有關措施,通訊辦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設置流動通訊設施,並於2023年2月至4月期間進行業界諮詢,以徵詢持分者(包括發展商、電訊業、專業團體等)對有關建議的意見。收到的13份意見書全部支持有關建議。

《2023年電訊(修訂)條例草案》在2023年12月提交立法會,並於2024年2月21日獲立法會通過。根據《2024年電訊(修訂)條例》,流動網絡營辦商可在通訊局授權下進入指明建築物(包括新建及重建的商業、工業、住宅和旅館建築物)的預留空間裝設和維持流動通訊設施而無須繳付費用。另外,新建的政府建築物及公營房屋亦會跟從有關安排以裝設流動通訊設施,有關安排將有助進一步擴展香港的流動網絡覆蓋及容量。相關修訂已於2024年10月1日生效,獲通訊局授權的流動網絡營辦商可進入在2025年4月1日或之後獲批建築圖則的指明建築物的預留空間裝設和維持流動通訊設施。

與此同時,通訊辦協助通訊局制訂《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》,為發展商和流動網絡營辦商訂明有關在指明建築物裝設流動通訊設施的具體要求。通訊辦亦就更新相應的行政指引與有關政府部門聯繫,以確保新規定能夠適時推行。

The 235 villages were grouped under six tender projects (namely, Project 1 to Project 6) which were approved under the subsidy scheme between November 2019 and May 2020. Selected FNOs were entrusted to roll out fibre-based lead-in connections to the villages concerned, and lay three submarine fibre-based cables connecting Lamma Island to Hong Kong Island (under Project 5), as well as Cheung Chau to Lantau Island and Peng Chau to Lantau Island (under Project 6) respectively. 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.

By far, the selected FNOs have already extended their fibre-based networks to 200 villages and completed the rollout of three submarine fibre cables connecting Lamma Island, Cheung Chau and Peng Chau. OFCA will continue to supervise the implementation of the subsidy scheme and it is expected that fibre-based networks will be extended to all 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

The 2022 Policy Address announced that the Government will further expand the 5G network by amending legislation to ensure availability of appropriate space in new buildings for installation of mobile communications facilities. To take forward the initiative, OFCA assisted 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. Industry consultation sessions were conducted from February to April 2023 to seek views from stakeholders (including the developers, telecommunications trade, professional bodies, etc.) on the proposal. A total of 13 submissions were received and all were supportive of the proposal.

The Telecommunications (Amendment) Bill 2023 was introduced into LegCo in December 2023 and passed by LegCo on 21 February 2024. Under the Telecommunications (Amendment) Ordinance 2024, MNOs may be authorised by CA for free access to reserved space in specified buildings (including new and redeveloped commercial, industrial, residential and hotel buildings) to install and maintain mobile communications facilities. In addition, new government buildings and public housing will also follow the arrangements for installing mobile communications facilities. The arrangement will help further expand the mobile network coverage and capacity in Hong Kong. The relevant amendment took effect on 1 October 2024, of which MNOs authorised by CA can install and maintain mobile communications facilities in the reserved space in specified buildings with building plans approved on or after 1 April 2025.

In the meantime, OFCA assisted CA in developing the "Code of Practice for the Provision of Mobile Access Facilities in Specified Buildings for the Provision of Public Mobile Radiocommunications Services", which sets out the specific requirements for developers and MNOs regarding the installation of mobile communications facilities in specified buildings. OFCA is also liaising with other relevant government departments in updating the respective administrative guidelines to ensure timely implementation of the new requirements.

便利5G網絡鋪設

基於5G的特性,要達致更佳的5G覆蓋,便須要裝設更多無線電基站。為求迅速和有效地鋪設5G網絡,通訊辦自2019年3月起推行先導計劃,開放超過1500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,以簡化該計劃的申請流程。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。截至



通訊辦職員與流動網絡營辦商及康樂及文化事務署代表舉行會 議,商討有關在一政府場地設置無線電基站的事宜。

OFCA staff members conducting a meeting with the representatives of mobile network operators and the Leisure and Cultural Services Department on the issues concerning the installation of radio base stations at a government venue.

2024年8月底,政府在該計劃下共收到246份申請,並已 批准當中的134份申請。

除政府場所外,政府已設立機制,便利流動網絡營辦商在有上蓋巴士站和公眾收費電話亭設置無線電基站。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2024年8月底,共有12份在有上蓋巴士站安裝無線電基站的申請獲批。另外,政府將於不同地區設置多功能智慧燈柱,並預留空間及承載能力供流動網絡營辦商安裝無線電基站,以更廣泛地擴大5G網絡覆蓋。現時本港四家流動網絡營辦商已分別向通訊局申請使用首批安裝在智慧燈柱的5G基站,有關申請已於2024年4月完成審批。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公眾設施,以及便利營辦商進行技術測試。

提供稅務優惠以鼓勵投資電訊基建設施

為配合《2023-24年度財政預算案》的措施,通訊辦協助商經局修訂了法例,就流動網絡營辦商將來經拍賣投得的無線電頻譜而須繳付的頻譜使用費給予稅務扣除,以鼓勵其更積極投資流動通訊基建設施。《2024年稅務(修訂)(關於頻譜使用費的稅項扣除)條例》已於2024年1月19日生效。流動網絡營辦商就投得的無線電頻譜而須繳付的頻譜使用費可獲全額利得稅扣除,該稅務扣除會在頻譜指配期內分期執行。有關稅務扣除措施旨在鼓勵流動網絡營辦商通過競投無線電頻譜投資流動通訊服務。



Facilitating the Rollout of 5G Networks

Owing to the characteristics of 5G, more RBSs are required to be installed to provide reasonable 5G network coverage. To facilitate the expedient and effective rollout of 5G network, OFCA has launched a pilot scheme since March 2019 to open up more than 1 500 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 is charged for each RBS installed. As of end August 2024, 246 applications were received under the scheme, of which 134 were approved.

Apart from government premises, the Government has established mechanisms to facilitate MNOs' installation of RBSs at sheltered bus stops and public payphone kiosks. 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 end August 2024, 12 applications for installation of RBS at sheltered bus stop were approved. Moreover, the Government will reserve available space and loading capacity at multi-functional smart lampposts in various districts for RBS installation to further expand the 5G network coverage. The four local MNOs have submitted applications to CA respectively for using the first batch of 5G RBSs installed at the smart lampposts, and the vetting of the applications was completed in April 2024. OFCA will continue to work with the industry and relevant government departments in identifying suitable public facilities for installation of RBSs and facilitating technical trials.

Encouraging Investments in Telecommunications Infrastructure by Providing Tax Incentive

In support of the 2023-24 Budget initiative, OFCA assisted CEDB in amending the legislation to incentivise investment in mobile communications infrastructure through tax deduction on the SUF payable by MNOs on spectrum acquired through auctions in future. The Inland Revenue (Amendment) (Tax Deductions for Spectrum Utilization Fees) Ordinance 2024 took effect on 19 January 2024. The SUF payable by MNOs for the radio spectrum to be acquired will be fully deductible from profits tax and the tax deduction will spread over the spectrum assignment term. The tax deduction aims to encourage MNOs to invest in mobile communications services through bidding for radio spectrum.

與相關機構協調加強大型公眾活動場地的5G網絡容量

《2023年施政報告》公布,政府會積極與相關機構協調,加強大型公眾活動場地的5G網絡容量。為落實有關措施,通訊辦現正積極與相關持份者(包括政府部門、場地負責人及流動網絡營辦商)協調,在大型公眾活動場地,包括中環海濱活動空間、香港體育館、香港會議展覽中心(會展)、亞洲國際博覽館(亞博館)、維多利亞公園(維園)及啟德體育園安裝無線電基站。自2024年4月起,流動網絡營辦商已在會展、亞博館及維園啟動5G基站及提供5G服務,而在中環海



通訊辦職員與相關持份者巡視香港體育館,商討有關在該場地 安裝無線電基站以加強5G網絡容量事宜。

OFCA staff members and relevant stakeholders inspecting the Hong Kong Coliseum and discussing about matters in relation to the installation of radio base stations at the venue in order to enhance the 5G network capacity.

濱活動空間、香港體育館及啟德體育園的5G基站安裝工程正在進行,將會陸續提供5G服務。通訊辦會繼續與相關機構協調在大型活動場地設置流動通訊設施,以確保市民和參與活動的人士均可享用優質的通訊服務,以及提供高水平的電訊基建設施,鞏固香港作為國際盛事之都的地位。

擴展5G網絡至鄉郊及偏遠地區資助計劃

《2023年施政報告》公布,政府會透過資助加快擴展鄉郊及偏遠地區的流動網絡基建設施。為推展有關措施,通訊辦已就落實資助計劃展開籌備工作,包括就鄉郊及偏遠地區的流動網絡覆蓋及有關安裝無線電基站的技術事宜與流動網絡營辦商進行商討。就建議框架進行的業界諮詢已於2024年8月完成,我們現正就收集到的意見諮詢地區持份者,以敲定最終的建議細節。我們期望在2025年向立法會申請相關撥款,推展是項資助計劃。

撤銷大埔的「3.5吉赫限制區」

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,大埔及赤柱設立了兩個限制區,讓5G服務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衞星的衞星地球站(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控的情況下於限制區設置3.5吉赫無線電基站。



Coordination with Relevant Organisations to Enhance 5G Network Capacity at Major Public Event Venues

The 2023 Policy Address announced that the Government will coordinate proactively with relevant organisations to enhance 5G network capacity at major public event venues. To implement the initiative, OFCA is actively coordinating with relevant stakeholders including government departments, venue managers and MNOs to install RBSs at major public event venues, including Central Harbourfront Event Space (CHES), Hong Kong Coliseum (HKC), Hong Kong Convention and Exhibition Centre (HKCEC), AsiaWorld-Expo (AWE), Victoria Park (VP) and Kai Tak Sports Park (KTSP). Since April 2024, MNOs have already activated 5G RBSs and provided 5G services at HKCEC, AWE and VP, whereas the installation of 5G RBSs at CHES, HKC and KTSP are in progress and 5G services would be in place gradually. OFCA will continue to coordinate with relevant organisations to set up mobile communications facilities at major event venues to ensure that the public and event participants can enjoy quality communications services and provide high-level telecommunications infrastructure for reinforcing Hong Kong's position as an international hub for mega events.

Subsidy Scheme to Extend 5G Coverage in Rural and Remote Areas

The 2023 Policy Address announced that the Government will enhance the coverage of 5G networks

by expediting the expansion of mobile network infrastructure in rural and remote areas through subsidies. To take forward the initiative, OFCA has commenced the preparatory work for the implementation of the subsidy scheme, including liaison with MNOs about the mobile network coverage in rural and remote areas and technical matters in relation to the installation of RBSs. An industry consultation on the proposed framework was completed in August 2024. We are consulting local stakeholders and finalising details of the proposal taking into account the views received. We plan to seek funding approval from LegCo in 2025 for implementation of the subsidy scheme.

Lifting the "3.5 GHz Restriction Zone" in Tai Po

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 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.

為了解決此問題,通訊辦積極與有關衞星營辦商聯繫,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,以便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,一家衞星營辦商已獲批土地將其在大埔於3.5吉赫頻帶內運作的遙測、追蹤及控制站遷往春坎角電訊港,而另一家衞星營辦商則已承諾在其衞星設施安裝衞星帶通濾波器,以防止無線電干擾。

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衞星天線,並要確保現有在軌衞星的操作不受影響。考慮到完成搬遷所需的時間和資源,我們的目標是在2024年10月底或之前撤銷大埔「3.5吉赫限制區」。在搬遷完成前,流動網絡營辦商可利用其他5G頻帶(例如700兆赫及4.9吉赫頻帶)或透過重整他們現有的頻譜(例如850兆赫及2.1吉赫頻帶)在限制區提供5G服務。

確保適時供應合適頻譜應付新興無線 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。通訊辦亦與香港業界人士保持密切溝通,

掌握電訊業的發展。在通訊辦的建議下,通訊局於2024年 2月公布了2024至2026年的頻譜供應表,向業界公布未來 三年擬供應作公共流動及/或其他無線電通訊服務的無 線電頻譜。與此同時,通訊辦一直密切留意國際電聯於 2023年年底舉辦的世界無線電通信大會的會議成果,所產 生對各種無線電通訊服務(包括流動服務)新頻帶的發展 情況。通訊辦會因應市場發展協助通訊局適時向業界供應 額外的頻譜。



通訊辦以中國代表團成員的身分參與2023年11月20日至12月 15日在阿拉伯聯合酋長國迪拜舉行的2023年世界無線電通信 大會。

OFCA participated in the World Radiocommunication Conference 2023 held from 20 November to 15 December 2023 in Dubai, the United Arab Emirates, as members of the Chinese delegation.



To resolve the issue, OFCA has proactively liaised with the concerned satellite operators regarding the relocation of their TT&C stations operating in the 3.5 GHz band from Tai Po to the Chung Hom Kok Teleport (the 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 in the 3.5 GHz band from Tai Po to the Teleport, while the other satellite operator has undertaken to install satellite band-pass filters at its satellite facilities to prevent radio interference.



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, the target is to remove the "3.5 GHz restriction zone" in Tai Po by end of October 2024. Pending completion of relocation, MNOs would make use of other 5G bands (e.g. the 700 MHz and 4.9 GHz bands) or re-farm their existing spectrum (e.g. the 850 MHz and 2.1 GHz bands) to provide 5G services in the restriction zones.

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

OFCA has kept up with worldwide development trends in telecommunications and participates in related international/regional meetings of the ITU, Asia-Pacific Telecommunity (APT), and other organisations. OFCA has also maintained close dialogue with industry players in Hong Kong to keep abreast of the development of the telecommunications industry. With OFCA's recommendations, CA issued the Spectrum Release Plan for 2024-2026 in February 2024 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 parallel, OFCA has been closely monitoring the development of new frequency bands for various radiocommunications services, including mobile services, arising from the outcomes of the World Radiocommunication Conference of ITU convened in late 2023. Taking note of the market development, OFCA will assist CA in providing timely supply of additional spectrum to the industry.

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。通訊辦會與流動網絡營辦商合作精簡運作方式,並為有意通過該系統發放緊急訊息的不同決策局/部門提供所需協助。

實施電話智能卡實名登記制

根據《電訊(登記用戶識別卡)規例》(第106AI章) (《實名登記規例》),實名登記制自2023年2月起全面 實施。根據規定,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)均須於啓動服務前完 成實名登記。通訊局已發出《實施電話智能卡實名登記 制度的指引》(《實名登記指引》),為電訊商履行實名 登記制提供指引及詳細要求。

自實名登記制全面實施以來,通訊辦持續進行一系列監察 及執法工作,確保電訊商及其他相關人士合乎《實名登



通訊辦職員在深水埗一帶進行有關電話智能卡實名登記的市場 巡查及公眾教育活動。

A staff member of OFCA conducting a market surveillance and public education activity in relation to real-name registration for SIM Cards in Sham Shui Po.

記規例》及《實名登記指引》的要求。通訊辦一直與電訊商合作,並提醒電訊商需優化其登記平台及加強檢查登記記錄,其中包括於2024年10月1日起採用「智方便」作為香港身份證持有人進行電話儲值卡實名登記的預設登記方式。

通訊辦會繼續與電訊商合作,就已登記的用戶資料進行抽樣檢查,以確保有關登記記錄完整可靠。此外,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、進行突擊市場巡查行動及檢查有關登記記錄,並會繼續進行宣傳工作,以加強公眾對實名登記制規定的認識。

打擊詐騙電話和訊息

通訊辦一直與電訊業和警方緊密合作,制定和實施技術措施,合力打擊透過電訊網絡傳送的詐騙電話和訊息。在2023/24年度,電訊業實施了措施,包括攔截源自境外的可疑「+852」來電及在流動服務用戶在接聽境外「+852」來電前發送話音或文字訊息提示。截至2024年8月底,電訊商已攔截超過420萬個以「+852」開首的可疑來電及流動服務供應商亦已發送超過2650萬個話音或文字訊息提示。





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

The Emergency Alert System (EAS) was set up by four local MNOs, enabling 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. OFCA will work with the MNOs in streamlining the operation and offer necessary assistance to different bureaux/departments which intend to disseminate emergency messages via the FAS.

Implementation of Real-name Registration Programme for SIM Cards

Pursuant to the Telecommunications (Registration of SIM Cards) Regulation (Cap. 106AI) (the Regulation), the Real-name Registration Programme for SIM Cards (RNR Programme) has been fully implemented since February 2023, requiring that all SIM cards issued and used locally (including SIM service plans and pre-paid SIM cards) must have completed real-name registration before service activation. CA has issued the "Guidelines on Implementation of Real-name Registration for SIM Cards" (the RNR Guidelines) to provide guidance and detailed requirements of the RNR Programme for telecommunications service providers.

Since the full implementation of the RNR Programme, OFCA has been carrying out a series of ongoing monitoring and enforcement actions to ensure that telecommunications service providers and other relevant parties comply with the requirements of

the Regulation and the RNR Guidelines. OFCA has been working continuously with telecommunications service providers, and reminding them to enhance their registration platforms and strengthen inspection of their registration records. Among others, they have adopted "iAM Smart" as the default registration method for Hong Kong identity card holders in completing real-name registration of pre-paid SIM cards starting from 1 October 2024.

OFCA will continue to work with telecommunications service providers to conduct sample checks on the registration information to safeguard the integrity of the registration records. OFCA will also continue to carry out enforcement and monitoring actions, including verification of telecommunications service providers' registration platforms, ad hoc market surveillances and inspections of registration records, and continue the publicity efforts to enhance public awareness of the requirements of the RNR Programme.

Tackling Fraudulent Calls and Messages

OFCA has been working closely with the telecommunications industry and the Police to devise and implement technical measures against fraudulent calls and messages delivered through telecommunications networks. In 2023/24, the telecommunications industry implemented measures to block suspicious +852 calls incoming from outside Hong Kong as well as to send voice or text alerts to mobile service users before receiving +852 calls incoming from outside Hong Kong. As of end August 2024, telecommunications service providers have blocked more than 4.2 million suspicious calls starting with "+852" and mobile service providers have issued more than 26.5 million voice or text alerts.

此外,通訊辦制定了業務守則,要求流動服務供應商和固網服務供應商分別由2023年6月底和2023年12月底開始,監察自其網絡打出的電話。若識別出懷疑詐騙電話的致電模式,有關電話號碼的服務將被暫停。截至2024年8月底,約有113萬個本地電話號碼按業務守則被暫停服務。通訊辦會繼續與電訊業及警方合作,監察和提升以上各項措施的成效。

實施短訊發送人登記制

為協助市民識別短訊發送人的真實身分,通訊辦與電訊業、銀行業及警方合作,設立短訊發送人登記制。在登記制下,「已獲認證的發送人」會使用以「#」號開頭的「已登記的短訊發送人名稱」發出短訊予本地流動服務用戶。所有其他並非由「已獲認證的發送人」發出而發送人名稱含「#」號的短訊,均會被電訊網絡攔截。登記制於2023年12月28日開始實施,其後於2024年2月起開放予各行業加入。主要電訊商、銀行、政府部門、法定組織、各行業(例如公用事業、零售、教育、保險及信貸財務等)的公司及機構已陸續加入登記制。截至2024年8月底,已有超過320間公司及機構參與登記制。



通訊辦職員向市民派發宣傳單張,以提高他們對電話及短訊詐 騙的警覺性。

A staff member of OFCA distributing promotional leaflets to members of the public to raise their alertness to telephone and SMS scams.

通訊辦會繼續推廣登記制和鼓勵更多行業及機構加入 登記制。

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(智能電話亭)測試,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各一個智能電話亭作測試用途。除了公眾收費電話及免費Wi-Fi服務外,智能電話亭亦提供其他資訊服務,例如鄰近一帶的交通服務及公共設施、社會福利服務聯絡資料、照顧者小貼士、新聞和天氣資訊,以及設有USB充電接口,供市民免費使用。通訊辦會繼續為HKT提供協調支援。



通訊辦職員在銅鑼灣測試智能電話亭的服務。

A staff member of OFCA testing the services of Smart Kiosk in Causeway Bay.

Besides, OFCA formulated a code of practice, requiring mobile service providers and fixed service providers to monitor calls originating from their networks since end June 2023 and end December 2023 respectively. Should call patterns of suspected phone deception be identified, the services of the relevant telephone numbers would be suspended. As of end August 2024, about 1.13 million local telephone numbers were suspended in accordance with the code of practice. OFCA will continue to work with the telecommunications industry and the Police to monitor and enhance the effectiveness of the aforementioned measures.

Implementation of the SMS Sender Registration Scheme

To help the public verify the authenticity of SMS senders, OFCA worked with the telecommunications industry, the banking industry and the Police to establish the SMS Sender Registration Scheme. Under the scheme, registered senders should use Registered SMS Sender IDs with the prefix "#" to send SMS messages to local subscribers of mobile services.



All other SMS messages with sender IDs containing "#" but not sent by Registered Senders would be blocked by the telecommunications networks. The scheme has been implemented since 28 December 2023, and was open for application by all sectors starting from February 2024. Major telecommunications service providers, banks, government departments, statutory bodies, companies and organisations from various sectors (e.g. public utilities, retail, education, insurance and credit finance, etc.) have joined the scheme progressively. As of end August 2024, more than 320 companies and organisations have participated in the scheme. OFCA would continue to publicise the scheme and encourage more industries and organisations to join the scheme.

Trial of Smart Payphone Kiosks

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 a trial of smart payphone kiosks (Smart Kiosks) in March 2023 with the aim to 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 public payphone and free Wi-Fi services, the Smart Kiosks also provide information services such as transportation and public facilities available in the vicinity, contact information of social welfare services, tips for caregivers, and news and weather information, as well as a USB charging port provided to the public free of charge. OFCA will continue to provide coordination support to HKT.

固網寬頻服務的發展

隨着固網營辦商持續擴展網絡,香港的寬頻服務滲透率極高。截至2024年3月底,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97%,當中85%的住戶 正享用由光纖網絡提供的固網寬頻服務。

根據歐洲光纖到戶議會於2024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,在全球參與評比的83個經濟體系當中排名第三。



通訊辦職員巡查光纖到樓/光纖到戶設備。

A staff member of OFCA conducting an inspection on the Fibre-to-the-Building/Fibre-to-the-Home system.

實施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,通訊辦自2022年11月起,已開始實施光纖接達樓宇標籤計劃。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,以標示該樓宇已接達光纖網絡。截至2024年3月底,逾70 500幢樓宇已登記參與該計劃,涵蓋全港92%的居住樓宇單位。

推出大廈室內5G覆蓋標籤計劃

為使市民獲得更穩定高速的流動通訊服務,通訊辦於 2024年5月推出「大廈室內5G覆蓋標籤計劃」,旨在鼓 勵流動網絡營辦商與大廈管理人合作,在大廈室內公用 部分(包括大堂、升降機、停車場、商場、地庫等)設置 5G通訊設備,加強流動網絡覆蓋。在計劃下,已裝設5G室 內基站的地點會張貼指定標籤,作為設有5G室內網絡覆蓋 的認證。

協助新的海底電纜系統在香港登陸

通訊辦一直協助營辦商向相關政府部門取得在香港鋪設及 登陸新海底電纜系統的法定許可。透過通訊辦提供的一站 式支援,多個新的區域或洲際海底電纜系統正在興建,並 擬於2024年至2029年期間陸續投入服務。





Development of Fixed Broadband Services

Along with the ongoing network expansion of FNOs, Hong Kong has a high level of penetration of broadband services. As of end March 2024, there were around 3 million residential and commercial fixed-broadband subscriptions, with the household penetration rate exceeding 97%, 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 March 2024, among the 83 economies under comparison, Hong Kong was ranked third worldwide in fibre to home/building household penetration.

Implementation of the 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 has implemented the Labelling Scheme for Buildings with Optical Fibre Access since November 2022. Under the scheme, OFCA compiles and maintains a register

Optical Fibre Access
Enables Smart Living for All

Figure Fibre Access Network
Option Fibre Access Network
Option Fibre Access Network
Internal Fibre Acces

大廈張貼指定標籤,標示有關樓宇已接達光纖網絡。

Buildings displayed with the designated label indicate that they have access to optical fibre networks.

of buildings connected with optical fibre networks based on the 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 in their buildings indicating the availability of optical fibre networks there. As of end March 2024, more than 70 500 buildings were registered under the scheme, covering 92% of living quarters in Hong Kong.

Launching the Labelling Scheme for Buildings with 5G Indoor Coverage

To provide the public with more stable and high-speed mobile communications services, OFCA launched the Labelling Scheme for Buildings with 5G Indoor Coverage in May 2024 which aims at encouraging collaboration between MNOs and building managers to install 5G communications facilities and enhance mobile network coverage in the indoor common areas of buildings such as lobbies, lifts, carparks, shopping centres and basements. Under the scheme, a designated label will be posted at locations with 5G indoor base stations installed, as a certification of 5G indoor coverage at the vicinity.

Facilitating the Landing of New Submarine Cable Systems in Hong Kong

OFCA has been facilitating the operators to seek statutory approvals of laying and landing of new submarine cable systems in Hong Kong from relevant government departments. With the support of OFCA's single-point-of-contact service, several new regional or transcontinental submarine cable systems are under construction and scheduled to be put into service between 2024 and 2029.

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。通訊辦從電訊的角度就未來發展向政府提供支援和技術意見。

檢討以行政方式指配的頻譜徵收頻譜 使用費的收費計劃

以行政方式指配的頻譜徵收頻譜使用費的收費計劃自2018年1月1日實施以來,已促使頻譜使用者更有效率地使用獲指配的頻譜,以及把過剩的獲指配頻譜交還通訊局。由引入收費計劃至今,須繳付頻譜使用費的六段指定頻帶當中已有超過200條鏈路交還通訊局。因應收費計劃須每五年進行一次檢討,我們在諮詢業界後於2023年檢討了該計劃。經考慮檢討結果和持份者的意見後,通訊局和商經局局長於2023年12月公布其決定。通訊局決定沿用現行篩選徵收頻譜使用費的準則,並維持現行六段指定頻帶須繼續繳付頻譜使用費。同時,商經局局長決定維持現有頻譜使用費的水平。

改善四類牌照的發牌制度

為配合政府有關改善規管措施以提升香港競爭力的政策, 通訊辦協助通訊局改善四類牌照的發牌制度,包括船舶電 台牌照、無線電廣播轉播電台牌照、酒店電視(發送)牌 照和衞星電視共用天線牌照,將有關牌照的有效期由一年 延長至兩年,加強規管的確定性。相關改善措施自2024年 3月起生效。通訊辦會繼續協助通訊局監督有關發牌制度的 實施情況。



通訊辦職員於發出酒店電視(發送)牌照前進行酒店電視系統 檢驗。

OFCA staff members conducting an inspection on a hotel TV distribution system before the issuing of Hotel Television (Transmission) Licence.





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. OFCA has been providing support and technical advice to the Government on the way forward from the telecommunications perspective.

Review of the Charging Scheme for Spectrum Utilization Fee for Spectrum Assigned Administratively

Since its implementation on 1 January 2018, the charging scheme for the SUF for spectrum assigned administratively (SUF Charging Scheme) has encouraged spectrum users to use the spectrum assigned to them in an efficient manner and return excessive spectrum to CA. Over 200 links in the designated six frequency bands subject to the SUF have been returned to CA since the introduction of the SUF Charging Scheme. As the SUF Charging Scheme is subject to review

every five years, a review was conducted in 2023 and an industry consultation had been conducted. Having considered the findings of the review and the views of the stakeholders, CA and SCED promulgated their decisions in December 2023. The decision of CA is to maintain the adoption of the existing criteria to identify the frequency bands that are subject to SUF and that the prevailing six designated frequency bands should continue to be subject to SUF. Meanwhile, SCED decided to maintain the prevailing SUF levels.

Enhancement of Licensing Regime for Four Types of Licences

In alignment with the Government's policy to improve regulatory measures with a view to enhancing the Hong Kong's competitiveness, OFCA supported CA to enhance the licensing regime of four types of licences, namely Ship Station Licence, Broadcast Radio Relay Station Licence, Hotel Television (Transmission) Licence and Satellite Master Antenna Television Licence, by extending the period of validity of the licences from one year to two years to enhance regulatory certainty for the licensees. The enhancements took effect from March 2024. OFCA will continue to assist CA in overseeing the operation of the enhanced licensing regime.

香港衞星網絡的發展

由於衞星頻譜和軌道位置屬稀有和珍貴的資源,通訊衞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衞星營辦商與外國當局協調,並協助處理有關操作在軌衞星的牌照事宜。截至2024年3月 底,有兩家衞星營辦商獲發牌在港追蹤、控制及進行遙測 合共九枚在軌對地靜止衞星。

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2023/24年度,通訊局批准和發出了兩項新技術標準,並對三項技術標準作出修訂,涵蓋公共流動服務(包括5G服務)的無線電基站、轉發器和用戶設備。

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2023/24年度,本地 和海外認證機構簽發了545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。



通訊辦職員正檢查安裝在通訊塔上器材的狀況。

A staff member of OFCA checking the radio equipment installed at the top of an antenna.



Development of Hong Kong's Satellite Networks

Since satellite spectrum and orbital positions are scarce and invaluable resources, their use by communications satellites should comply with the coordination and notification requirements of ITU. OFCA supports local licensed satellite operators to coordinate with foreign administrations and assists in the processing of licences for the operation of satellites in space orbits. As of end March 2024, two satellite operators were licensed in Hong Kong to track, control and conduct telemetry for a total of nine geostationary satellites in orbit.

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 2023/24, two new technical standards and three revised technical standards governing RBSs, repeaters and user equipment for public mobile services, including 5G services, were approved and issued by 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 CA. In particular, a full range of telecommunications equipment testing and certification services are offered by local laboratories accredited by CA as local certification bodies (LCBs). In 2023/24, LCBs and foreign certification bodies issued 545 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.



通訊辦職員在政府醫院內進行檢查醫學電子器材,以確保其合 乎牌照規定。

A staff member of OFCA conducting an inspection on a medical electronic equipment at a government hospital to ensure its compliance with the licence conditions.