

**Joint Statement of the Communications Authority and  
the Secretary for Commerce and Economic Development**

**Arrangements for Re-assignment of the Spectrum in  
the 850 MHz Band for Public Mobile Telecommunications Services  
and the Related Spectrum Utilisation Fee**

**30 March 2021**

**PURPOSE**

This Statement promulgates the decision of the Communications Authority (“CA”) on the re-assignment of 15 MHz of spectrum in the 850 MHz band. This Statement also announces the decision of the Secretary for Commerce and Economic Development (“SCED”) on the arrangements for the related spectrum utilisation fee (“SUF”).

**EXECUTIVE SUMMARY**

S1. The CA decides to adopt a market-based approach for re-assignment of the 2 x 7.5 MHz of spectrum in the 825 – 832.5 MHz band paired with the 870 – 877.5 MHz band (“850 MHz Band”) for the provision of public mobile services.

S2. The spectrum in the 850 MHz Band will be re-assigned as one frequency block by way of auction to a single successful bidder. No spectrum cap will be imposed.

S3. The spectrum will be put to auction together with the other available bands (namely spectrum in the 600 MHz, 700 MHz, 2.5/2.6 GHz, and 4.9 GHz bands) under a single auction in the simultaneous multiple round ascending format. The CA targets to conduct the auction in the fourth quarter of 2021, and will provide details of the auction nearer the time.

S4. A technology neutral approach will be adopted for the spectrum in the 850 MHz Band in the next term of assignment whereby the assignee is free to use any technology of a widely recognised standard for service provision, subject to compliance with the licence conditions of the unified carrier licence (“UCL”) to be granted for use of the spectrum.

S5. The assignee of the spectrum in the 850 MHz Band will be required to roll out its network and service using the assigned spectrum to cover a minimum of 90% of the population in the first five years after the issue of the licence, and lodge a performance bond as a guarantee of its compliance with the network and service rollout obligations.

S6. Following the public consultation on the re-assignment arrangements for the spectrum in the 850 MHz Band, the existing assignee<sup>1</sup> undertook to return the spectrum on or before 19 November 2021. The CA decides to have the new term of assignment commencing around end-2021 rather than 20 November 2023 (i.e. the day following the expiry of the existing assignment on 19 November 2023) if the existing assignee returns the spectrum to the CA on or before 19 November 2021 as undertaken. The term of the new assignment of spectrum in the 850 MHz Band will be 15 years.

S7. The SUF will be determined through auction, subject to an auction reserve price to be specified nearer the time of the auction. In terms of the method of payment, spectrum assignee will be given a choice to pay the SUF either by lump sum payment upfront or by annual instalments, with the first instalment equivalent to the lump sum payment divided by 15 and with subsequent instalments increased every year by 2% to reflect the time value of money.

## **INTRODUCTION**

In 2008, the 15 MHz of spectrum in the 850 MHz Band was assigned by way of auction to the existing assignee for a term of 15 years which will expire on 19 November 2023. The assignment was made on the basis that the existing assignee should only use the specified technology (i.e. CDMA2000 family of technical standards adopted by the 3rd Generation Partnership Project 2) for the provision of public mobile services under the mobile carrier licence granted to it.

2. On 19 August 2020, the CA and SCED jointly issued a consultation paper<sup>2</sup> entitled “Arrangements for the Frequency Spectrum in the 850 MHz Band upon Expiry of the Existing Assignment for Public

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<sup>1</sup> The existing assignee is Hong Kong Telecommunications (HKT) Limited.

<sup>2</sup> The consultation paper is available at –  
[https://www.coms-auth.hk/filemanager/en/content\\_711/cp20200819\\_2.pdf](https://www.coms-auth.hk/filemanager/en/content_711/cp20200819_2.pdf).

Mobile Telecommunications Services and the Related Spectrum Utilisation Fee” (the “Consultation Paper”) to seek views and comments on the re-assignment arrangements for the spectrum in the 850 MHz Band for the provision of public mobile telecommunications services, and the related SUF. Six submissions were received in response to the Consultation Paper<sup>3</sup>.

3. In January 2021, the existing assignee put forward a proposal to voluntarily return the spectrum in the 850 MHz Band assigned to it<sup>4</sup> prior to the expiry of the term of assignment of the spectrum. Taking into account, inter alia, that there were no customers subscribing to the mobile services provided under the MCL and no roaming services provided under signed agreements with overseas operators, the CA accepted the existing assignee’s proposal. The existing assignee then provided an undertaking to the CA that it shall voluntarily return the spectrum in the 850 MHz Band on or before 19 November 2021 (“the Undertaking”).

4. Having considered and examined the views and comments received in the consultation exercise, and taking into consideration the latest development as described in paragraph 3 above, the CA and SCED set out in this Statement their respective decisions on the arrangements for re-assignment of the spectrum in the 850 MHz Band and the related SUF. Salient views and comments of the respondents received in the consultation exercise as well as the responses of the CA and SCED are summarised in the **Annex**.

## **LEGISLATIVE AND POLICY FRAMEWORK**

5. Under section 32G(1) of the Telecommunications Ordinance (Cap. 106) (“TO”), the CA has the statutory duty to promote the efficient allocation and use of the radio spectrum as a public resource of Hong Kong. Sections 32H(2) and 32I(1) of the TO empower the CA to assign radio frequencies and to designate which of them shall be subject to the payment of SUF following such consultation with the telecommunications industry and other affected persons as is reasonable in all the circumstances of the case.

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<sup>3</sup> The submissions in response to the Consultation Paper are available at – [https://www.coms-auth.hk/en/policies\\_regulations/consultations/completed/tele\\_services/index\\_id\\_2262.html](https://www.coms-auth.hk/en/policies_regulations/consultations/completed/tele_services/index_id_2262.html).

<sup>4</sup> Under mobile carrier licence No. 099 (“MCL”). The MCL will also be surrendered at the same time of the return of spectrum.

6. Section 4(4) of the Communications Authority Ordinance (Cap. 616) (“CAO”) stipulates that the CA, in performing its functions, must have regard to the following as appear to it to be relevant in the circumstances: (a) the fostering of an environment that supports a vibrant communications sector to enhance Hong Kong’s position as a communications hub in the region; (b) the encouragement of innovation and investment in the communications market; (c) the promotion of competition and adoption of best practices in the communications market for the benefit of the industry and consumers; and (d) acting in a manner consistent with the provisions of the Hong Kong Bill of Rights Ordinance (Cap. 383).

7. Sections 32I(2) and 32I(4) of the TO empower SCED to prescribe the method for determining the SUF and to specify the minimum fee of the SUF (including the minimum fee or reserve price of an auction where it is used for determining the SUF).

8. The Radio Spectrum Policy Framework (“Spectrum Policy Framework”) promulgated by the Government in April 2007 identifies the policy objectives and the guiding principles in spectrum management which the CA should take into account in discharging its spectrum management responsibilities under the TO<sup>5</sup>. The former Telecommunications Authority (“TA”) explained in his statement issued in April 2007 that, in exercising his statutory powers under the TO, he would, in addition to all relevant considerations as required by law, give due regard to the Spectrum Policy Framework to the extent that there would be no inconsistency with the objectives and provisions of the TO<sup>6</sup>.

9. According to the Spectrum Policy Framework, there is no legitimate expectation that there will be any right of renewal or right of first refusal upon the expiry of a spectrum assignment under the TO. The decision whether a new spectrum assignment, with the same or varied radio frequencies, should be given to the spectrum assignee would be made and notified to the spectrum assignee within a reasonable time before the expiry of its spectrum assignment. In considering assignment of spectrum in general, due regard will be given to the policy inclination that a market-based approach will be used in spectrum management wherever the CA considers that there are likely to be competing demands from providers of non-Government services, unless there are overriding public policy reasons

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<sup>5</sup> The Spectrum Policy Framework is available at –  
<https://www.cedb.gov.hk/assets/resources/ccib/policies/spectrum.pdf>.

<sup>6</sup> The Statement issued by the former TA on the Spectrum Policy Framework is available at –  
[https://www.coms-auth.hk/filemanager/common/policies\\_regulations/ca\\_statements/ta20070424\\_en.pdf](https://www.coms-auth.hk/filemanager/common/policies_regulations/ca_statements/ta20070424_en.pdf).

to do otherwise. The Spectrum Policy Framework also states that SUF will generally be applicable to all non-Government use of spectrum.

## **THE CA'S DECISION ON THE RE-ASSIGNMENT ARRANGEMENTS FOR THE SPECTRUM IN THE 850 MHz BAND**

### **Re-assignment of Spectrum by Auction**

10. The CA proposed in the Consultation Paper to re-assign the spectrum in the 850 MHz Band by way of auction, a market-based approach that would allow the fair value of the spectrum to be determined in an open and transparent way, on the basis that there would likely be competing demands, and no overriding public policy reason had been identified for deviation from the default market-based approach. The respondents generally support or express no objection to the proposal. One respondent suggests that the auction should be open to incumbent mobile network operators (“MNOs”) only, as it will not be cost efficient for a non-incumbent MNO to bid for the spectrum which is extremely limited in supply.

11. As mentioned in the Consultation Paper, the spectrum in the 850 MHz Band can support various generations of mobile services, including the third generation (“3G”), fourth generation (“4G”) and fifth generation (“5G”) services. As a low frequency band below 1 GHz, the 850 MHz Band has superb radio propagation characteristics enabling deployment of mobile services with a wider area of coverage and better building penetration compared with higher frequency bands. Radio spectrum in low frequency bands is among the favourite spectrum of the industry for the provision of mobile services, but the supply of such spectrum for mobile services is very limited. The outcome of the spectrum auction held in December 2018 revealed keen competition from MNOs for the spectrum in the 900 MHz band, which has radio propagation characteristics similar to that of the 850 MHz Band. Having taken into account the above and the industry’s responses to the Consultation Paper, the CA maintains the view that there are likely to be competing demands for the spectrum in the 850 MHz Band. Thus following the guiding principle in spectrum management, as set out in the Spectrum Policy Framework, a market-based approach should be adopted for the assignment of the spectrum in the 850 MHz Band unless there are overriding public policy reasons to do otherwise. As the existing assignee has advised that there are now no local customers and that it does not have any roaming agreements with overseas operators for the provision of CDMA2000 services to in-bound roamers,

there is no concern about service continuity that would merit consideration of any deviation from the market-based approach.

12. Based on the above considerations, **the CA decides to re-assign the spectrum in the 850 MHz Band through auction.** The CA does not consider it appropriate to restrict the auction for participation by incumbent MNOs only. An open auction would ensure that the successful bidder, be it an incumbent or a new entrant, is the one who values the spectrum most and can put it to the most efficient use during the term of assignment. Accordingly, **the auction should be open to all interested parties**, subject only to the following minimal qualification requirements –

- (a) lodging with the Government a specified amount of deposit which may be forfeited if the bidder violates the auction rules or fails to take up the licence after winning the auction; and
- (b) demonstrating its capability to provide service in fulfilment of the licensing obligations to the satisfaction of the CA and submitting any other relevant supporting information that the CA may deem necessary.

### **Band Plan**

13. In the Consultation Paper, the CA proposed to re-assign the spectrum in the 850 MHz Band as one frequency block to a single user to avoid further fragmentation of the frequency block and hence there is no need to impose a bidding restriction in the form of a spectrum cap on the re-assignment. Nearly all respondents, including all MNOs and one equipment supplier, support the proposal. One MNO suggests that the CA should adopt a holistic approach for long-term spectrum planning in respect of the spectrum in the 600 MHz and 700 MHz bands and 850 MHz band and in this connection, proposes an arrangement to re-farm the spectrum in the bands for provision of public mobile services with optimal spectral efficiency in the long run. On the other hand, an individual suggests that the spectrum in the 850 MHz Band should be combined with frequencies in the lower and upper bands adjacent to it to form two frequency blocks for re-assignment.

14. Regarding the MNO's proposal of re-farming of spectrum in the sub-1 GHz bands, the CA notes that some bands suggested for re-farming to public mobile services have been reserved for and/or used by Government and non-Government users. In its ongoing spectrum review, the CA will take into account the industry's suggestion as well as the needs of the MNOs

and other spectrum users. For timely re-assignment of the spectrum, the CA will maintain the band plan proposed in the Consultation Paper. As for the individual’s suggestion of combining frequencies in the lower and upper bands adjacent to the 850 MHz Band for re-assignment, given the suggestion would lead to the absence of a guard band between the two-way paging service and public mobile services which would affect electromagnetic compatibility between the two types of services, the CA does not agree with it from a technical angle.

15. Having taken into account the above, **the CA decides to re-assign the spectrum in the 850 MHz Band as a single frequency block**, as shown in Table 1 below, **without imposing a spectrum cap on any bidder**.

**Table 1: Frequency block and bandwidth**

<b>Frequency Block</b>	<b>Frequency Range</b>	<b>Bandwidth</b>
C	825 – 832.5 MHz paired with 870 – 877.5 MHz	2 x 7.5 MHz

**Auction Format and Timing**

16. The CA proposed in the Consultation Paper to adopt a simple multiple round ascending (“MRA”) auction format for bidding for the single frequency block in the 850 MHz Band. The CA also proposed that if there was any other spectrum to be made available for assignment or re-assignment in a similar time frame, the CA would carefully consider the feasibility of arranging a single auction such as based on the simultaneous MRA (“SMRA”) format for blocks of spectrum in different frequency bands.

17. Two respondents propose to align the re-assignment schedule of the spectrum in the 850 MHz Band with that of another 2 x 5 MHz of spectrum in the upper adjacent band (“Other 850 MHz Band”)<sup>7</sup> or a part thereof. The CA notes that the existing assignment of the Other 850 MHz Band is only due to expire in May 2026 (about 53 months after the re-assignment of spectrum in the 850 MHz Band scheduled for around end-2021 following the Undertaking)<sup>8</sup>. As the spectrum in the 850 MHz Band is currently not employed to provide services to any local customers nor in-bound roamers, the alignment proposal would not only mean a delay

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<sup>7</sup> Namely 832.5 – 837.5 MHz paired with 877.5 – 882.5 MHz currently assigned to SmarTone Mobile Communications Limited.

<sup>8</sup> See paragraph 20 below.

in the re-assignment of the spectrum in the 850 MHz Band, but also that the spectrum will remain idle and not be used for the provision of services to the public in the interim of over four years. As such, the CA does not agree to it.

18. No respondents to the consultation object to the proposed MRA auction format. Two MNOs consider that spectrum in the 850 MHz Band and 700 MHz band should be auctioned together<sup>9</sup>. Another MNO considers that spectrum in the 600 MHz band should also be assigned by the same auction to facilitate operators' overall network planning with the newly assigned / re-assigned spectrum in the sub-1 GHz band, while the remaining MNO considers that auctions for the spectrum in the 700 MHz band and the 850 MHz Band should be conducted separately as spectrum in the 700 MHz band would be better assigned via the clock auction format instead of the SMRA auction format.

19. Having taken into account the submissions received and the above considerations, and for the reasons set out in the CA's analysis and decisions as announced in its other statements issued on the same day regarding the assignment and re-assignment arrangements for other spectrum<sup>10</sup>, **the CA decides that the spectrum in the 850 MHz Band will be put to auction together with the other available bands (namely spectrum in the 600 MHz, 700 MHz, 2.5/2.6 GHz, and 4.9 GHz bands) under a single auction in the SMRA format.** Under the SMRA auction, bidders will be able to switch their bids for frequency blocks in different bands during the bidding process. The CA targets to conduct the auction in the fourth quarter of 2021, and will provide details of the auction in the information memorandum to be issued nearer the time of the auction.

## Licensing Arrangements

### Licensing and Validity Period

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<sup>9</sup> On 19 August 2020, the CA and SCED also issued a consultation paper inviting comments on the proposed arrangements for assignment of the spectrum in the 600 MHz and 700 MHz bands for the provision of public mobile services and the related SUF ([https://www.coms-auth.hk/filemanager/en/content\\_711/cp20200819\\_1.pdf](https://www.coms-auth.hk/filemanager/en/content_711/cp20200819_1.pdf)).

<sup>10</sup> The other statements on the arrangements for assignment / re-assignment of spectrum in the 600 MHz and 700 MHz bands, 2.5/2.6 GHz band, 4.9 GHz band are available at – [https://www.coms-auth.hk/filemanager/statement/en/upload/558/600\\_700\\_mhz\\_statement.pdf](https://www.coms-auth.hk/filemanager/statement/en/upload/558/600_700_mhz_statement.pdf); [https://www.coms-auth.hk/filemanager/statement/en/upload/556/2\\_5\\_2\\_6\\_ghz\\_statement.pdf](https://www.coms-auth.hk/filemanager/statement/en/upload/556/2_5_2_6_ghz_statement.pdf); and [https://www.coms-auth.hk/filemanager/statement/en/upload/555/4\\_9\\_ghz\\_statement.pdf](https://www.coms-auth.hk/filemanager/statement/en/upload/555/4_9_ghz_statement.pdf).



20. In line with the existing licensing regime for the provision of public mobile services, a new UCL will be issued to the successful bidder of the spectrum in the 850 MHz Band to effect the re-assignment of the spectrum with a validity period of 15 years, which is the same as the fixed term of a UCL prescribed by regulation<sup>11</sup> under the TO, for the provision of public mobile services. An incumbent licensee which successfully bids for spectrum in the auction may apply to the CA for combining its existing UCL with the new UCL to be issued. Except for one respondent who suggests a longer period of spectrum assignment for recouping its investment, no respondents raise specific comments on the period of assignment. Having considered the submissions received, and having regard to the facts that the term of spectrum assignment would be coterminous with the UCL granted to the spectrum assignee and that an assignment term of 15 years has been consistently adopted for spectrum assigned for the provision of public mobile services in the past, the CA **decides that the spectrum in the 850 MHz Band will be re-assigned for a term of 15 years.** In view of the Undertaking, the CA decides to have the new term of assignment commencing around end-2021 rather than 20 November 2023 (i.e. the day following the expiry of the existing assignment on 19 November 2023)<sup>12</sup>.

### Technology Neutrality

21. In the Consultation Paper, the CA proposed to adopt a technology neutral approach whereby the spectrum assignee is free to use whatever technology it chooses from widely recognised standards for providing 5G or other generations of mobile services. Such an approach will enable the successful bidder to deploy the state-of-the-art technology in a timely and flexible manner to best meet the market demand. With no objection from the respondents to the proposal, **the CA decides to adopt a technology neutral approach** for the spectrum in the 850 MHz Band in the next term of assignment whereby the assignee is free to use any technology of a widely recognised standard for service provision, subject to compliance with the licence conditions of the UCL to be granted for use of the spectrum.

### Network and Service Rollout Obligations

22. The CA proposed in the Consultation Paper that the successful bidder of the 850 MHz Band should be required to roll out its network and provide mobile coverage to a minimum of 90% of the population within the

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<sup>11</sup> Telecommunications (Carrier Licences) Regulation (Cap. 106V)

<sup>12</sup> Subject to completion of the early return of the spectrum by the existing assignee, the CA will update the Spectrum Release Plan accordingly to indicate the date of re-assignment of the spectrum.

first five years from the date of issue of the licence, using the assigned spectrum in the 850 MHz Band. The successful bidder would be required to lodge a performance bond as a guarantee of its compliance with the network and service rollout obligations.

23. The respondents generally express no objection to the proposed network and service rollout obligations and imposition of a performance bond to safeguard compliance. In order to ensure that the scarce radio spectrum will be put into use in a timely and efficient manner, **the CA maintains its view that the successful bidder should be required to roll out its network and service using the assigned spectrum in the 850 MHz Band, which should cover a minimum of 90% of the population in the first five years after the issue of the licence, and lodge a performance bond as a guarantee of its compliance with the network and service rollout obligations.** The amount of performance bond will be specified by the CA in the information memorandum to be issued for the auction of the spectrum in the 850 MHz Band.

## **THE DECISION OF SCED ON THE RELATED SPECTRUM UTILISATION FEE**

### **Level of SUF**

24. Given that radio spectrum is a scarce public resource, it is incumbent upon the Government to ensure that the SUF of spectrum is set to reflect as closely as possible its full market value so that spectrum assignees, which run their commercial operations in a fully liberalised market, would put the spectrum so acquired to its most efficient use.

25. In paragraphs 10 to 12 above, the CA concludes that there are likely to be competing demands and that auction as a market-based approach should be used for the re-assignment of the spectrum in the 850 MHz Band. The SUF would therefore naturally be determined through auction whereby the bidders would determine the level of their bids based on clear information on the supply of spectrum and their assessment of the business potential and opportunities. The auction results would reflect the full market value of the spectrum. SCED decides to prescribe that the SUF of the spectrum in the 850 MHz Band will be determined by auction in accordance with section 32I(2) of the TO, subject to an auction reserve price to be specified nearer the time of the auction.

26. SCED has taken note of the prevailing global and local economic and investment environment as well as the substantial investments required during the current early stage of 5G rollout. With these in mind, SCED does not intend to set an auction reserve price at a high level which might discourage competition and bidders' eagerness to participate in the auction. Rather, SCED considers that it should be set at a level that represents the minimum base value of the spectrum for the purpose of kick-starting the competitive bidding process, while balancing the need to forestall non-serious bidders. This coincides with the MNOs' views received from the consultation that the auction reserve price should not be set at a high level.

### **Method of Payment**

27. To allow for greater flexibility for the spectrum assignee to make financial arrangement for the payment of SUF having regard to its individual circumstances, SCED proposed in the Consultation Paper that the spectrum assignee would be given a choice to pay the SUF either by lump sum payment upfront or annual instalments.

28. All MNOs welcome the additional choice to pay the SUF by annual instalments. SCED decides to propose a regulation under section 32I(2) of the TO to prescribe that the spectrum assignee (which may be an incumbent MNO or a new entrant into the market) will be given a choice to pay the SUF either by –

- (a) lump sum payment upfront, which is the lump sum amount determined in auction; or
- (b) annual instalment, with the first instalment equivalent to the lump sum amount obtained in (a) above divided by 15 (i.e. the number of years of assignment), and subsequent instalments increased every year by 2%, the latest medium-range underlying inflation forecast, to reflect the time value of money to the Government.

### **IMPLEMENTATION OF THE SPECTRUM RE-ASSIGNMENT ARRANGEMENTS**

29. The CA and SCED will make the necessary arrangements to enable the re-assignment of the spectrum in the 850 MHz Band to proceed as per their respective decisions in this Statement. SCED will prepare for

the making of subsidiary legislation under the TO to prescribe the methods for determining the SUF of the spectrum and the choices of methods of SUF payment. Subject to the completion of the legislative process, the CA targets to conduct the auction for the spectrum in the 850 MHz Band in the fourth quarter of 2021 and, subject to the existing assignee's return of the spectrum on or before 19 November 2021 as undertaken, the CA targets to complete re-assignment of the spectrum around end 2021.

30. For the avoidance of doubt, nothing in this Statement will affect, limit or prejudice the exercise of the powers of the CA and SCED under the CAO, TO or its subsidiary legislations.

**Communications Authority**  
**Secretary for Commerce and Economic Development**  
**30 March 2021**

**Summary of Submissions to the Consultation Paper  
and the Responses of  
the Communications Authority and  
the Secretary for Commerce and Economic Development**

**INTRODUCTION**

On 19 August 2020, the Communications Authority (“CA”) and the Secretary for Commerce and Economic Development (“SCED”) jointly issued a consultation paper (the “Consultation Paper”) to seek views and comments of the industry and interested parties on the arrangements for re-assignment of the frequency spectrum in the 825 – 832.5 MHz band paired with the 870 – 877.5 MHz band (the “850 MHz Band”) for public mobile telecommunications services and the related spectrum utilisation fee (“SUF”)<sup>1</sup>.

2. At the close of the public consultation on 14 October 2020, submissions were received from the following six respondents (listed in alphabetical order)<sup>2</sup> –

Organisations

- (a) China Mobile Hong Kong Company Limited (“CMHK”)
- (b) Comba Telecom Limited (“Comba”)
- (c) Hong Kong Telecommunications (HKT) Limited (“HKT”)
- (d) Hutchison Telephone Company Limited (“Hutchison”)
- (e) SmarTone Mobile Communications Limited (“SmarTone”)

Individual

- (f) Mr Simon Lo

3. The CA and SCED set out in this Annex their respective responses to the views and comments received in the public consultation. For the avoidance of doubt, the CA and SCED have taken into account and given thorough consideration to all the issues raised in the submissions which are relevant to the arrangements for the frequency spectrum in the 850 MHz Band

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<sup>1</sup> The Consultation Paper is available at –  
[https://www.coms-auth.hk/filemanager/en/content\\_711/cp20200819\\_2.pdf](https://www.coms-auth.hk/filemanager/en/content_711/cp20200819_2.pdf).

<sup>2</sup> Submissions to the Consultation Paper are available at –  
[https://www.coms-auth.hk/en/policies\\_regulations/consultations/completed/tele\\_services/index\\_id\\_2262.html](https://www.coms-auth.hk/en/policies_regulations/consultations/completed/tele_services/index_id_2262.html).

upon expiry of the existing assignment for public mobile telecommunications services and the related SUF, though, for practical reasons, not all of the issues raised may specifically be mentioned or addressed herein. Please refer to the statement (the “Statement”) to which this Annex is attached for the respective decisions made by the CA and SCED after the public consultation on the matter.

4. The responses set out in this Annex are without prejudice to the exercise of the powers by the CA or SCED under the Communications Authority Ordinance (Cap. 616), Telecommunications Ordinance (Cap. 106) or any subsidiary legislation.

## **PROPOSED ARRANGEMENTS FOR RE-ASSIGNMENT OF THE SPECTRUM IN THE 850 MHz BAND**

### **Re-assignment of Spectrum by Auction**

***Question 1: Do you have any views on re-assigning the spectrum in the 850 MHz Band through an auction open for all interested parties?***

#### Views and Comments of the Respondents

5. CMHK, Hutchison and SmarTone either support or express no objection to the CA’s proposal to re-assign the spectrum in the 850 MHz Band through an auction open for all interested parties. HKT does not object to the use of an auction process to re-assign the spectrum in the 850 MHz Band on the basis of the CA’s assumption that there are likely to be competing demands for the spectrum. Comba considers that it will not be cost efficient for non-incumbent mobile network operators (“MNOs”) to bid for the spectrum, which is extremely limited in supply, and therefore proposes that the auction should be open to incumbent MNOs only.

#### Responses of the CA

6. The CA notes that respondents to the consultation generally raise no objection to the proposal that the spectrum in the 850 MHz Band should be re-assigned by way of auction. As for whether there are likely to be competing demands for the spectrum, as mentioned in the Consultation Paper, the 850 MHz Band can support various generations of mobile services, including third generation (“3G”), fourth generation (“4G”) and fifth generation (“5G”) services. User devices and network equipment which support 3G and/or 4G services using the 850 MHz Band are widely available in the market. In comparison with higher frequency bands, low frequency bands below 1 GHz

have superb radio propagation characteristics allowing MNOs to deploy mobile services with a wider area of coverage and better building penetration, and therefore are among the favourite frequency bands of the industry for the provision of mobile services. Since 2017, the CA has received requests from the industry to release more spectrum in the low frequency bands for provision of 4G or 5G services. However, the supply of spectrum in the low frequency bands allocated for mobile services has been very limited. The outcome of the spectrum auction held in December 2018 revealed that there was keen competition from MNOs for the spectrum in the 900 MHz band which has almost the same radio propagation characteristics as that in the 850 MHz Band. Based on the above and the industry's responses to the consultation, the CA maintains its view that there are likely to be competing demands for the spectrum in the 850 MHz Band.

7. According to the Radio Spectrum Policy Framework, the policy inclination is that a market-based approach in spectrum management will be adopted wherever the CA considers that there are likely to be competing demands from providers of non-Government services, unless there are overriding public policy reasons to do otherwise. No respondents to the consultation have commented that there is any overriding public policy reason that would justify re-assignment of the spectrum by other means. Indeed, the incumbent assignee<sup>3</sup> of the spectrum in the 850 MHz Band, has advised that as there are no local customers and it does not have any roaming agreements with overseas operators for the provision of CDMA2000 services to in-bound roamers, there is no concern about service continuity that would merit consideration of a deviation from the market-based approach.

8. As for Comba's suggestion to allow only incumbent MNOs to participate in the auction on the ground that it would not be cost efficient for the non-incumbents to bid for the spectrum, the CA's view is that it is not appropriate to impose such a restriction because, as mentioned in the Consultation Paper, auction allows the fair value of the spectrum to be determined in an open and transparent way and ensures that the successful bidder is the one who values the spectrum most and puts it to the most efficient use. Accordingly, the CA considers that the auction should be open to all qualified interested parties, whether they are incumbent MNOs or new entrants, who decide to participate in the auction based on their own business considerations.

9. In light of the above considerations, the CA maintains its view that the spectrum in the 850 MHz Band should be assigned by way of auction, which

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<sup>3</sup> HKT

should be open for participation by all interested parties, subject only to minimal qualification requirements for registering bidders' interest and demonstrating the capability of the bidders to provide satisfactory service.

## **Band Plan**

***Question 2: Do you have any views on the proposed re-assignment of the spectrum concerned as a single frequency block of bandwidth of 2 x 7.5 MHz?***

### Views and Comments of the Respondents

10. The MNOs (CMHK, HKT, Hutchison and SmarTone) and Comba support the proposed re-assignment of the spectrum as a single frequency block of bandwidth of 2 x 7.5 MHz. Hutchison further suggests that the CA should adopt a holistic approach to long-term spectrum planning in respect of the spectrum in the 600 MHz and 700 MHz bands (collectively referred to as “600/700 MHz Bands”) and 850 MHz band to achieve optimal spectral efficiency in the long run and draws the CA’s attention to its submission to the consultation on *Arrangements for Assignment of the Spectrum in the 600 MHz and 700 MHz Bands for the Provision of Public Mobile Services and the Related Spectrum Utilisation Fee*<sup>4</sup>. Specifically, Hutchison proposes a plan for frequency allocation in the 700 MHz, 800 MHz and 900 MHz bands. Mr Simon Lo proposes that the 2 x 7.5 MHz of spectrum in the 850 MHz Band should be combined with 2 x 1 MHz of spectrum in the lower adjacent band (824 – 825 MHz paired with 869 – 870 MHz) (“Lower Adjacent Band”) and 2 x 2.5 MHz of spectrum in the upper adjacent band (832.5 – 835 MHz paired with 877.5 – 880 MHz) (“Upper Adjacent Band”) to form a spectrum of 2 x 11 MHz in the frequency range of 824 – 835 MHz paired with 869 – 880 MHz, which should be divided into two continuous blocks of 2 x 5.5 MHz for assignment / re-assignment.

### Responses of the CA

11. Regarding Hutchison’s suggested allocation of the spectrum in the 700 MHz, 800 MHz and 900 MHz bands in the long run, the CA would like to highlight that some frequency bands suggested by Hutchison for allocation to public mobile services have been reserved for and/or are being used by Government and non-Government users. Further details can be found in the Joint Statement of the CA and SCED issued on 30 March 2021 on

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<sup>4</sup> The consultation paper on the assignment arrangements of 600/700 MHz Bands is available at – [https://www.coms-auth.hk/filemanager/en/content\\_711/cp20200819\\_1.pdf](https://www.coms-auth.hk/filemanager/en/content_711/cp20200819_1.pdf)



*Arrangements for Assignment of the Spectrum in the 600 MHz and 700 MHz Bands for the Provision of Public Mobile Services and the Related Spectrum Utilisation Fee*<sup>5</sup> (“Joint Statement on 600/700 MHz Bands”). While the CA will continue to identify suitable spectrum, or re-farm spectrum as necessary, to facilitate the development of public mobile services, the CA also needs to address the spectrum demand of other spectrum users, including Government users and the general public. In particular, as stipulated in the Radio Spectrum Policy Framework promulgated in April 2007, the CA must ensure that necessary spectrum is reserved for services to be provided by or on behalf of the Government. The CA notes Hutchison’s suggestion and will consider it during its on-going spectrum review.

12. Regarding Mr Simon Lo’s proposal to combine the spectrum in the 850 MHz Band with the Lower Adjacent Band and the Upper Adjacent Band to form a bigger block of spectrum for assignment / re-assignment in one go for the provision of public mobile services, the Lower Adjacent Band is being deployed as a guard band separating the two-way paging service operating in the frequency range of 823.7 – 824 MHz paired with 868.7 – 869 MHz and the public mobile services operating in the 850 MHz band to ensure electromagnetic compatibility between the two services. On the other hand, the existing assignment of the spectrum in the Upper Adjacent Band will only expire on 31 May 2026, about 53 months after re-assignment of the spectrum in the 850 MHz Band scheduled for around end 2021, following early return of the spectrum by 19 November 2021 as undertaken by the existing assignee. Mr Simon Lo’s proposal necessitates alignment of the schedule for re-assignment of the two blocks of spectrum and will lead to a delay in the re-assignment of the spectrum in the 850 MHz Band. As explained in paragraph 15 below, the CA does not consider the alignment suggestion agreeable.

13. In sum, having considered the comments of the respondents, the CA maintains its view that the spectrum in the 850 MHz Band should be re-assigned as one frequency block to a single user.

### **Auction Format and Timing**

***Question 3: Do you have any views on the proposed format and timing of the auction?***

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<sup>5</sup> The Joint Statement on 600/700 MHz Bands is available at – [https://www.coms-auth.hk/filemanager/statement/en/upload/558/600\\_700\\_mhz\\_statement.pdf](https://www.coms-auth.hk/filemanager/statement/en/upload/558/600_700_mhz_statement.pdf)

## Views and Comments of the Respondents

14. No respondents object to the proposal to adopt a simple multiple round ascending (“MRA”) format. As for the timing of conducting the auction, Hutchison and Mr Simon Lo propose to align the re-assignment schedule of the assignment of the spectrum concerned with that of another 2 x 5 MHz of spectrum (or part thereof) in the 850 MHz band, which is due to expire in May 2026<sup>6</sup>. If the alignment proposal is not accepted, Hutchison suggests that the spectrum in the 850 MHz Band and that in the 700 MHz band should be auctioned together, given that the propagation characteristics and value of the spectrum in the 700 MHz band are similar to that of the 850 MHz Band<sup>7</sup>. HKT also considers that the spectrum in the 850 MHz Band and 700 MHz band should be auctioned together as the spectrum in the aforesaid bands is comparable in terms of radio propagation characteristics and, in contrast to the 600 MHz band spectrum, will not be restricted to indoor deployment. CMHK considers that the spectrum in the 850 MHz Band and 600/700 MHz Bands should be assigned by way of a single auction to facilitate operators’ overall network planning with the newly assigned / re-assigned spectrum in the sub-1 GHz band. On the other hand, SmarTone considers that the auctions for the spectrum in the 700 MHz band and for the 850 MHz Band should be conducted separately, as spectrum in the 700 MHz band would be better assigned via the clock auction format.

## Responses of the CA

15. Regarding Hutchison and Mr Simon Lo’s suggestion to align the re-assignment of the two blocks of spectrum in the 850 MHz band, this would mean postponing the re-assignment of the spectrum in the 850 MHz Band by about 53 months from around end-2021 to 1 June 2026. As the spectrum in the 850 MHz Band is currently not serving any local customers nor in-bound roamers, the proposal would not only mean a delay in the re-assignment of the spectrum, but also that the spectrum will remain idle and not be used for the provision of services to the public in the interim. The alternative option to effect the alignment proposal would be to re-assign the spectrum in the 850 MHz Band from around end-2021 for a short term of about 53 months so that the term of assignment of the two blocks of spectrum in the 850 MHz band will expire on 31 May 2026. This option is also considered impractical as operators will generally require a sufficiently long term of spectrum assignment to enable

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<sup>6</sup> Namely 832.5 – 837.5 MHz paired with 877.5 – 882.5 MHz currently assigned to SmarTone, with the assignment due to expire on 31 May 2026.

<sup>7</sup> On 19 August 2020, the CA and SCED also issued a consultation paper inviting comments on the proposed arrangements for assignment of the spectrum in the 600/700 MHz Bands for the provision of public mobile services and the related SUF. See footnote 2 above.

them to plan for network rollout and service provision as well as to recoup the necessary investment. As a matter of fact, the CA notes that one respondent even considers that the term of the spectrum assignment should be extended from the current 15 years to at least 20 to 25 years to allow the assignee sufficient time to recoup the investment (see paragraph 18 below). In view of the need to ensure prompt and efficient utilisation of the spectrum for providing public mobile services for the benefit of the community, the CA does not find the proposal to align the re-assignment of the two blocks of spectrum in the 850 MHz band agreeable.

16. As to the auction format, the views expressed in the submissions do not differ so much on whether the MRA format or the simultaneous MRA (“SMRA”) format should be adopted for the spectrum in the 850 MHz Band. No respondent has disputed the choice of format. The focus of the respondents is rather on whether spectrum in the other frequency bands (in particular the 600/700 MHz Bands) should be auctioned together with the spectrum in the 850 MHz Band using the SMRA auction format. In this connection, the CA has conducted a holistic assessment of the spectrum that will be available to the market in a similar time frame, and the proposed assignment / re-assignment arrangements which were set out for public consultations around the same time as that of the spectrum in the 850 MHz Band<sup>8</sup>. Taking into account the submissions received in response to all these consultations, and the analysis of the CA regarding the assignment and re-assignment arrangements for the other spectrum which is set out in the respective joint statements of the CA and SCED<sup>9</sup>, the CA considers that the spectrum in the 850 MHz Band together with other available spectrum in the 600/700 MHz Bands, the 2.5/2.6 GHz band and the 4.9 GHz band could be assigned by employing a single auction in the SMRA format, in which the bidders will be able to switch their bids for frequency blocks in different bands during the bidding process. The CA targets to conduct the auction in the fourth quarter of 2021, and will provide details of the auction in the information memorandum nearer the time of the auction.

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<sup>8</sup> Apart from consultations on the re-assignment of the spectrum in the 850 MHz Band and the assignment of spectrum in the 600/700 MHz Bands, the CA and SCED also issued consultation papers on their proposals on the arrangements for re-assignment of spectrum in the 2.5/2.6 GHz band and assignment of additional spectrum in the 4.9 GHz band and the related SUF, respectively in September and July 2020 (see [https://www.coms-auth.hk/filemanager/en/content\\_711/cp20200923.pdf](https://www.coms-auth.hk/filemanager/en/content_711/cp20200923.pdf) and [https://www.coms-auth.hk/filemanager/en/content\\_711/cp20200722.pdf](https://www.coms-auth.hk/filemanager/en/content_711/cp20200722.pdf).)

<sup>9</sup> The joint statements on the arrangements for assignment / re-assignment of spectrum in the 600/700 MHz Bands, 2.5/2.6 GHz band and 4.9 GHz band are available at – [https://www.coms-auth.hk/filemanager/statement/en/upload/558/600\\_700\\_mhz\\_statement.pdf](https://www.coms-auth.hk/filemanager/statement/en/upload/558/600_700_mhz_statement.pdf); [https://www.coms-auth.hk/filemanager/statement/en/upload/556/2\\_5\\_2\\_6\\_ghz\\_statement.pdf](https://www.coms-auth.hk/filemanager/statement/en/upload/556/2_5_2_6_ghz_statement.pdf); and [https://www.coms-auth.hk/filemanager/statement/en/upload/555/4\\_9\\_ghz\\_statement.pdf](https://www.coms-auth.hk/filemanager/statement/en/upload/555/4_9_ghz_statement.pdf).

## LICENSING ARRANGEMENTS

### Licensing and Validity Period

17. The CA proposed in the Consultation Paper to issue a new unified carrier licence (“UCL”) to the successful bidder. To be coterminous with the term of a UCL, the spectrum in the 850 MHz Band will be assigned for a validity period of 15 years for the provision of public mobile services. An incumbent licensee which successfully acquires spectrum in the proposed auction may apply to the CA for combining its existing UCL with the new UCL to be issued.

### Views and Comments of the Respondents

18. HKT comments that, in principle, a longer term of assignment of at least 20 to 25 years should be granted in order to permit operators sufficient time to recoup their investment, both in terms of the price paid for use of the spectrum and the cost of the associated network rollout. Other respondents raise no comments on the proposed licensing or the term of the assignment.

### Responses of the CA

19. A 15-year term of spectrum assignment for the provision of public mobile services, which is the same as the fixed term of a UCL prescribed by regulation<sup>10</sup> under the TO, has long been adopted in Hong Kong and it has generally been accepted by the industry without any major issues arising. As no special circumstance is identified or raised in any of the submissions to support a departure from the prevailing assignment term of 15 years for spectrum used for the provision of public mobile services, the CA considers that the spectrum in the 850 MHz Band should be re-assigned for 15 years.

### Technology Neutrality

***Question 4: Do you have any views on the adoption of a technology neutral approach for the use of spectrum in the 850 MHz Band in any new assignment which follows the expiry of the existing assignment?***

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<sup>10</sup> Telecommunications (Carrier Licences) Regulation (Cap. 106V)

## Views and Comments of the Respondents

20. The MNOs (CMHK, HKT, Hutchison and SmarTone) and Comba support the CA's proposal to adopt a technology neutral approach in respect of the use of the spectrum in the 850 MHz Band.

## Responses of the CA

21. The CA will adopt the technology neutrality principle for the new term of assignment of the spectrum in the 850 MHz Band.

## **Network and Service Rollout Obligations**

***Question 5: Do you have any views on the proposed network and service rollout obligations, as well as the proposed imposition of a performance bond on the successful bidder?***

## Views and Comments of the Respondents

22. CMHK supports the CA's proposal on rollout obligations and imposition of a performance bond to safeguard compliance. Comba, Hutchison and SmarTone have no adverse comment on the proposal. HKT does not consider it necessary to impose network and service rollout obligations or require the assignee to provide a performance bond as a matter of principle, as there is little incentive for operators to hoard spectrum or delay deployment of the spectrum for provision of services given the competitive mobile market in Hong Kong. Nevertheless, if the CA considers it necessary to impose such requirements, HKT considers that the proposal to require the successful bidder to provide a minimum coverage of 90% of the population in Hong Kong within five years is reasonable.

## Responses of the CA

23. The CA considers that the proposed network and service rollout obligations, together with the performance bond, provide an assurance that the scarce radio spectrum will be put into use in a timely and efficient manner. As there is no adverse comment on the minimum population coverage as well as the time frame imposed, the CA maintains its view that the spectrum assignee should be required to roll out its network and provide mobile coverage to a minimum of 90% of the population within the first five years from the date of issue of the licence, and to lodge a performance bond to safeguard its compliance with the network and service rollout obligations.

## **SPECTRUM UTILISATION FEE**

### **Level of SUF and Method of Payment**

***Question 5: Do you have any views on the proposed arrangement in relation to SUF as specified in paragraphs 24 and 25 of the Consultation Paper?***

#### Views and Comments of the Respondents

24. All MNOs support SCED's proposal that the spectrum assignee will be given a choice of paying the SUF by lump sum upfront or by annual instalments. CMHK proposes that the spectrum assignee should be given a choice to pay off the then outstanding SUF after the first assignment year under the option of annual instalment payments. HKT suggests that the pre-set fixed percentage applied to SUF instalments should be reduced.

25. Regarding the level of SUF, all MNOs consider that the reserve price should be set at a low or reasonable level.

#### Responses of SCED

26. SCED notes the support by MNOs for the choices provided for the payment method of SUF. In response to the proposed arrangement to pay off the outstanding SUF after the first assignment year under the option of annual instalment payments, SCED sees the need to keep the payment mechanism simple, and considers that the current options have already provided operators flexibility in payment of SUF. Regarding the suggestion to reduce the increment of the pre-set fixed percentage applied to each SUF instalment, SCED responds that the increment has the function of reflecting the time value of money to the Government, such that the amount obtained by the Government would not be reduced in real terms. In line with the latest medium-range underlying inflation forecast, the increment has been reduced to 2%.

27. The level of SUF will be determined by way of auction, which is the method which the CA decides to adopt for re-assignment of the spectrum concerned. SCED considers that the auction reserve price should be set at a level for kick-starting the competitive bidding process instead of a pre-estimated market price. A fine balance should also be achieved between ensuring the seriousness of bids and encouraging competition and participation in the auction exercise. When deciding the reserve price nearer the time of the

auction, SCED will take into account the prevailing global and local economic and investment environment, as well as the substantial investments required during the current early stage of 5G rollout.

**Communications Authority**  
**Secretary for Commerce and Economic Development**  
**30 March 2021**