

**Application for Assignment of Spectrum in the 26 GHz and 28 GHz Bands
for Provision of Large Scale Public Mobile Services**

Questions and Answers

The Communications Authority (“CA”) has received questions in relation to the Guidelines for Submission of Applications for Assignment of Spectrum in the 26 GHz and 28 GHz Bands for Provision of Large Scale Public Mobile Services (“Guidelines”) and the associated application form (“Application Form”) published on 21 December 2018. The CA hereby sets out its responses to the questions.

Terms not otherwise defined herein shall have the same meaning ascribed thereto in the Guidelines or the Application Form.

Q1. Part D (Spectrum Assignment), Question 1 of the Application Form requires the applicant to indicate how much spectrum it wishes to apply for in the Lower Band (24.25 - 26.55 GHz) and the Upper Band (26.55 - 28.35 GHz).

- (i) Please advise whether the applicant is permitted to specify the exact frequency range it wishes to apply for.**
- (ii) Please clearly explain how the CA determines the specific frequency assignment range for each Successful Applicant. Paragraph 3.12 of the Guidelines simply state that the CA will determine the location of frequency assignments for offer to the Provisional Successful Applicants “based on the principle of fairness and efficient spectrum utilisation”.**

A1. (i) No.

- (ii) In line with administrative assignments of other frequencies, the CA has the sole discretion in deciding the specific range(s) of frequencies in the 26/28 GHz bands to be assigned to each Successful Applicant. Since there could be many different scenarios in terms of the number of**

Qualified Applicants and the amount of frequencies applied for by each Qualified Applicant, it is not possible for the CA to exhaust all possible scenarios. The CA will determine the location of frequency assignments based on the principle of fairness and efficient spectrum utilisation.

Q2. Part M (Implementation Plan), Question 1 of the Application Form requires the applicant to provide an implementation plan for deployment of the Non-shared Spectrum in the 26/28 GHz bands, showing the key milestones of the implementation for the first five years, including, amongst other things:

“(a) the plan for installation of radio units in different locations of the territory; [...] (d) acquisition of sites; (e) securing access to buildings [...]. The applicant shall adhere to this plan if the Non-shared Spectrum is subsequently assigned.”

As it is not possible to make specific detailed plans which remain unchanged for a future 5-year rollout period, it is not practical to expect applicants to “adhere to this plan” if they are subsequently assigned spectrum. There are factors which are beyond an operator’s control that will require its original plans to be adjusted. For instance:

- Any other 5G spectrum subsequently acquired by the applicant in future spectrum assignment exercises will affect its rollout plans using the Non-shared Spectrum;
- The applicant will almost certainly experience difficulties acquiring its originally planned sites and securing access to its originally planned buildings, thereby requiring a change to its planned locations; and
- As 5G services evolve, the split of indoor and outdoor traffic demand will change, thereby necessitating changes to the location of radio units.

On this basis, please specify the degree of details required to be provided in the Application Form regarding the applicant's "implementation plan", particularly as regards the planned locations for its radio units, sites to be acquired and buildings to be accessed.

- A2. Each applicant is required to provide its implementation plan as requested under Part M of the Application Form showing the key milestones of implementation for the first five years following spectrum assignment, including the proposal to comply with the network and service rollout obligations and to implement a network capable of providing large scale public mobile services to the general public. The CA reserves all rights not to accept applications which are substantially incomplete in this respect.

All applicants should therefore provide the requested information in sufficient details. If an applicant considers that there are factors which may affect or are critical to implementation of the plan provided, it should state such factors in its application. If there is any material change to the implementation plan within the first five years following assignment of the Non-Shared Spectrum, the spectrum assignee should submit a revised plan highlighting the changes for acceptance by the CA.

- Q3. Paragraph 3.4 of the Guidelines requires the applicant to put in a deposit in the form of cash or a letter of credit based on the amount of spectrum it wishes to apply for.**

Please advise when the cash/letter of credit will be returned to the Successful Applicant. There is no indication of date under paragraph 3.22 of the Guidelines which deals with the return of the deposit. In particular, will there be a period of overlap during which the CA is still in possession of the letter of credit and, at the same time, has taken receipt of the performance bond required to be provided by the applicant (by 28 March 2019 per paragraph 4.11)? Any unnecessarily prolonged overlap will result in significant credit exposure to the banks and hence will be of concern to applicants.

- A3. As stipulated in paragraph 4.4 of the Guidelines, Successful Applicants are required to, among other requirements, provide to the CA a performance

bond guaranteeing compliance with the network and service rollout obligations, before a Licence could be issued to them to effect the relevant spectrum assignment. Upon confirmation of receipt of the performance bond from and fulfilment of the other requirements specified in paragraph 4.4 of the Guidelines by the Successful Applicants, the Office of the Communications Authority will contact the Successful Applicants and arrange return of the deposit right away.

Q4. Paragraph 4.11 of the Guidelines requires the assignees of the spectrum to provide a performance bond in the form as provided in Schedule 9 of the sample Unified Carrier Licence (“UCL”) at Annex A of the Guidelines.

With reference to clause 2.5 of the Form of Performance Bond shown in Schedule 9, please advise what is the expiry date of the performance bond that is required to be inserted in place of “[the date 120 days after the last deadline for compliance specified in the Annex]”.

A4. With the deadline for submission of applications postponed by four weeks from 25 January 2019 to 22 February 2019 in response to request from the industry, assignment of the Non-shared Spectrum is expected to take effect sometime in end April 2019. The last deadline for compliance with the network and service rollout obligations will be five years after the date of spectrum assignment. The expiry date of the performance bond for guaranteeing compliance with the rollout obligations will be 120 days after the updated last deadline for compliance. For example, if the spectrum assignment is to take effect on 25 April 2019 with the UCL granted, the expiry date of the performance bond will be 22 August 2024.

The notice on *Extension of the Deadline for Submission of Applications for Assignment of Spectrum in the 26 GHz and 28 GHz Bands for Provision of Large Scale Public Mobile Services* issued on 16 January 2019 is available at:

https://www.ofca.gov.hk/filemanager/ofca/en/content_1127/26_28_GHz_DeadlineExtensionNotice.pdf

Q5. With the deadline for submission of applications extended to 22 February 2019 and the indicative timetable for processing of applications updated, what would be the expiry date for the letter of credit to be submitted by applicants for payment of deposit, if the applicant pays the deposit in the form of letter of credit, as part of the requirements for pre-qualification of applications as specified in paragraph 3.4 and Annex C of the Guidelines?

A5 With the deadline for submission of applications extended by four weeks from 25 January 2019 to 22 February 2019, the expiry date of the letter of credit to be submitted by applicants for payment of deposit will be extended accordingly from 30 April 2019 to 28 May 2019.

Q6. There are concerns from the industry regarding the availability of relevant equipment supply (in particular indoor solutions) and the lead time for site modification required for installation of 5G radio base stations operating in the 26/28 GHz bands, which would cause difficulty for network rollout by spectrum assignees in meeting the network and service rollout obligations as set out in paragraphs 4.8 – 4.10 as well as relevant schedules of the sample UCL at Annex A of the Guidelines.

Would it be possible to relax the performance milestones for meeting the specified network and service rollout obligations, in particular to do away with the first milestone of installing 20% of the number of radio units required within 18 months following spectrum assignment?

A6. After careful consideration of the concerns of the industry and taking into account latest developments, the CA decided to adjust the performance milestones of the network and service rollout obligations to be met by the assignees of the spectrum in the 26/28 GHz bands for the provision of large scale public mobile services. After the adjustment, assignees will be required to install 20% of the minimum number of radio units required to be installed within the first three years following spectrum assignment, an addition of 30% within four years, and an addition of the remaining 50% within five years.

Notwithstanding the adjustment, the total minimum number of radio units required to be installed within the first five years following spectrum assignment, set in proportion to the amount of spectrum assigned, remains intact. The performance bond for guaranteeing compliance with the network and service rollout obligations, at HK\$1 million per MHz of spectrum assigned, also remains unchanged. The performance bond will be released to the spectrum assignees in three phases on equal portions upon fulfilment of each of the three milestones.

The *Notice of Modification for the Guidelines Published on 21 December 2018* is available at:

https://www.ofca.gov.hk/filemanager/ofca/en/content_1127/26_28_GHz_ModificationNotice.pdf

Q7. Regarding the network and service rollout obligations, would the radio units deployment be applicable to all or part of the slots assigned? For example, an applicant has installed and put into use the relevant number of radio units within the 5-year period as stipulated in the Joint Statement, but has not deployed all the slots assigned:

- **Applicant A: Assigned with 5 slots at the Upper Band, but deployed 4 slots at the Upper Band only**
- **Applicant B: Assigned with 3 slots at the Upper Band and 2 slots at the Lower Band, but deployed 3 slots at the Upper Band only**

The remaining slots will be deployed subject to the applicant's business needs. As such, would Applicant A and Applicant B be regarded as having fulfilled their rollout obligations?

A7. To ensure that the spectrum in the 26/28 GHz bands to be assigned administratively will be put into use for early deployment of 5G network, each assignee of the Non-shared Spectrum is required to install and put into use a minimum number of radio units in three specified phases within the first five years following spectrum assignment, as detailed in the *Notice of Modification for the Guidelines Published on 21 December 2018* issued today. The minimum number of radio units required to be installed is

proportional to the amount of spectrum assigned (e.g. 5 000 radio units for 800 MHz of Non-shared Spectrum assignment; 2 500 radio units for 400 MHz of Non-shared Spectrum assignment).

Since radio spectrum is a scarce public resource, applicants should only apply for the necessary amount of spectrum in their applications. As stated in paragraph 3.25 of the Guidelines, if any amount of Non-shared Spectrum is left unassigned, the CA is prepared to launch a new round of invitation for application for spectrum assignment in around end-2020.

As the Non-shared Spectrum is to be assigned for the provision of large scale public mobile services, spectrum assignees should demonstrate to the CA by the end of the fifth year following spectrum assignment that all the frequency slots assigned in the 26/28 GHz bands have been deployed for provision of such large scale services. In case of any inefficient use of the Non-shared Spectrum assigned, the CA has the sole discretion pursuant to Special Condition 21 of the sample UCL to withdraw the assignment of the relevant Non-shared Spectrum.

Q8. Paragraph 4.16 of the Guidelines states that the SCED will charge SUF:

“[...] on the two frequency bands if they become congested (i.e. 75% or more occupied) and are anticipated to become more congested in the future.”

Please clarify how the 75% will be calculated. Will the 75% be computed:

- **Taking the whole 4 100 MHz available in the 26/28 GHz bands as a whole; or**
- **Separately for the 3 700 MHz Non-shared Spectrum and the 400 MHz Shared Spectrum; or**
- **Separately for the Lower Band (24.25 - 26.55 GHz) and the Upper Band (26.55 - 28.35 GHz)?**

A8. In assessing whether the 26/28 GHz bands are congested (i.e. 75% or more occupied), SCED will consider the utilisation of the total of 4 100 MHz of spectrum, i.e. both the Non-shared Spectrum and Shared Spectrum in the lower band and upper band together. In other words, payment of SUF will be required if and when 3 075 MHz or more of spectrum in the 26/28 GHz bands is assigned.

Q9. If a Successful Applicant is an existing holder of a UCL, can it apply to merge its existing UCL with the new UCL to be granted for the assignment of the Non-shared Spectrum in the 26/28 GHz bands?

A9. According to paragraph 4.1 of the Guidelines, if a Successful Applicant is an existing licensee, it may request to merge its existing UCL with the new UCL issued for the assignment of the Non-shared Spectrum in the 26/28 GHz bands. The CA has the sole discretion to decide whether or not to accede to such requests. Such requests will be considered by the CA on a case-by-case basis taking into account factors such as the applicant's compliance with the terms of its existing UCL.

**Office of the Communications Authority
31 January 2019**