

The submissions of
Hong Kong CSL Limited and New World PCS Limited
in response to the consultation paper released on 11 May 2007
by the Telecommunications Authority entitled
“Providing Radio Spectrum for Broadband Wireless Access Services: Third
Consultation Paper”

6 August 2007

1 Introduction

- 1.1 Hong Kong CSL Limited (“**CSL**”) and New World PCS Limited (together, “**we**”) are pleased to provide comments in response to the consultation paper entitled “Providing Radio Spectrum for Broadband Wireless Access Service: Third Consultation Paper” issued by the Telecommunications Authority (“**TA**”) on 11 May 2007 (“**Consultation Paper**”).

2 Summary

- 2.1 A summary of our main comments are set out below.
- (a) Although in responding to the Consultation Paper we have considered both 2.3 GHz and 2.5 GHz spectrum bands for broadband wireless access (“**BWA**”) purposes, we believe it is premature to determine what spectrum should be allocated for BWA services given the TA’s plans are somewhat inconsistent with the current international spectrum allocations as determined by the International Telecommunications Union (“**ITU**”) and we understand the ITU’s World Radiocommunication Conference plans to discuss spectrum allocation issues at the next conference in October 2007. As a prudent regulator, the TA must wait until the ITU, the international body solely responsible for reviewing and revising radio regulations and frequency assignment allotment plans, makes relevant resolutions before making any determinations. To do otherwise would be contrary to the TA’s

responsibilities as a telecommunications regulator to uphold international agreements and treaties.

- (b) We also believe it is inappropriate to query whether respondents are interested in providing a BWA service when the Special Conditions of the unified carrier licence (“UCL”) pursuant to which the BWA spectrum will be assigned are unclear at this time. The intention to consult the industry on the UCL has been planned for some time and would need to be completed prior to any BWA spectrum auction in order for potential bidders to understand the terms and conditions on which spectrum is being assigned.
 - (c) We believe the TA should ensure any cap on the amount of spectrum allowed to be acquired at an auction is sufficient to ensure a viable commercial opportunity for the successful bidders.
 - (d) The TA must continue to adhere to a technology and service neutral approach when assigning BWA spectrum.
 - (e) The TA should consult with the industry in relation to spectrum liberalisation and fixed mobile number portability as soon as possible.
 - (f) We disagree with the proposal to allocate new number ranges for fixed mobile convergence (“FMC”) services and question the TA’s proposal to compartmentalise BWA services as being fixed/‘limited mobility’ services or ‘full mobility’ services for the purposes of assigning telephone numbers to customers.
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3 Specific comments about issues without questions

3.1 Prior to addressing the TA's specific questions as set out in the Consultation Paper, we take this opportunity to consider a number of other issues which, although mentioned or sometimes discussed at some length in the Consultation Paper, did not attract specific questions.

(A) Unified Carrier Licence

3.2 According to paragraph 25 of the Consultation Paper, BWA licensees will be allocated spectrum under a UCL. The Special Conditions associated with such a UCL are unknown at this time, although we recognise that in paragraph 26 of the Consultation Paper it states "the TA **may** consider further consultation on the Special Conditions under a UCL at a later stage". We note it has been almost two years since the TA consulted the industry on the Special Conditions of the UCL¹ and it is uncertain whether the TA is considering revising the old draft Special Conditions or providing entirely new Special Conditions for consideration. In particular, at paragraph 25 of the 2005 UCL Consultation Paper the TA indicated that:

"it should be noted that the licence obligations under the existing fixed (or mobile) carrier licence will be transplanted to the unified carrier licence if the TA is of the view that these licence obligations remain relevant to the licensee".

3.3 As the services offered by BWA licensees are likely to be competitive with the services offered by fixed carriers and mobile carriers it is inappropriate to be seeking to 'transplant' potentially all of the Special Conditions of existing carrier licences into a UCL (for the purposes of existing carriers), however allowing new

¹ See the "Revision of Regulatory Regimes for Fixed-Mobile Convergence Consultation Paper" issued by the TA on 21 September 2005, available at: <http://www.ofta.gov.hk/en/report-paper-guide/paper/consultation/20050921.pdf> ("2005 UCL Consultation Paper")

licensees, such as BWA licensees, to be free of these ‘transplants’. In order to maintain a level playing field between competitors, the carrier licences under which the licensees operate should be the same, as far as possible, and deviations should be the exception rather than the norm. Whilst we understand it may be necessary to ‘transplant’ some key legacy arrangements for existing licensees into a UCL, the TA should consult the industry about which of the legacy arrangements she believes should be transplanted, why such transplants are necessary and whether such transplants will also appear in the UCL to be utilised by new licensees.

- 3.4 For the sake of transparency and devising a holistic regulatory framework, before the TA can consider issuing an information memorandum with respect to any BWA spectrum, she should consult on the Special Conditions of the UCL under which the BWA spectrum will be assigned as well as those existing carrier licence Special Conditions that she intends to transplant into the UCL (for existing licensees). We look forward to providing our comments on this consultation.

(B) Interconnection terms and conditions

- 3.5 In paragraph 44 of the Consultation Paper, the TA indicates that should she be called upon to determine terms and conditions of interconnection between BWA services and other networks and services before the end of a two transition period, which expires on 26 April 2009, she will “determine on a case by case basis whether a particular service operated by a new BWA licensee is primarily a fixed or mobile service”.
- 3.6 We have always rejected the notion of a two year transition period for the withdrawal of the existing regulatory regime for fixed-mobile interconnection and have consistently argued for a much shorter period, given that the regime has been in place for more than 20 years and the withdrawal is long overdue. Further,

some fixed carriers have already launched ‘FMC’ services, some two months (rather than two years) after the issuance of the TA statement setting out the withdrawal of the regulatory regime², presumably in an attempt to compensate for the expected reduction in revenue as a result of the change in the fixed-mobile interconnection regime.

3.7 The intention of the TA to determine whether a service is primarily a fixed or mobile service during the transition period shows the problems associated with imposing such a long transition period. Naturally there may be difficulties with determining whether a service is ‘primarily a fixed or mobile service’ particularly when the services offered by the BWA licensees may be FMC services and the concept of convergence may mean that the service cannot be distinguished as ‘primarily fixed or mobile’ in nature.

3.8 Instead of attempting to characterise a service as fixed or mobile in nature, it is within the TA’s power to deviate from the existing regulatory guidelines and we urge the TA not to discount this possibility in the event she is required to consider determinations during the transition period.

(C) Section 14 authorisations and road opening rights

3.9 In paragraph 51 of the Consultation Paper, the TA indicates that the:

“building access right to be granted to BWA operators under UCL will follow the same principles as applied to the existing fixed network operators and mobile network operators depending on the nature of the particular installation”.

² TA Statement “Deregulation for fixed-mobile convergence”, issued on 27 April 2007 (“**FMC Statement**”).

- 3.10 Further, the TA states that “all respondents...shared the TA’s view” with respect to the proposal that the authorisations granted under section 14(1) of the Telecommunications Ordinance should not apply where the relevant installation was not solely for serving the occupiers of the building concerned. This is just one of a number of times in the Consultation Paper when respondents’ views have been characterised incorrectly. Certainly CSL (as part of the joint operator submission) did not agree with the proposal as it creates an anti-competitive situation between fixed carriers (who are provided with such authorisations) and mobile carriers (who are prohibited from obtaining such authorisations).
- 3.11 This regulatory barrier, which amounts to an asymmetry between fixed and mobile carriers, will then be further complicated under the BWA arrangements, as apparently the TA will consider whether BWA licensees are providing fixed or mobile services when deciding whether section 14(1) authorisations will be granted. Again, similar to the comments made in the previous paragraphs, attempting to characterise services and installations as fixed or mobile in nature runs contrary to the concept of convergence and will create even greater disparities between competing industry players. We strongly urge the TA to reconsider her position; particularly given this view is opposite to the view as expressed by the TA’s consultant³.
- 3.12 We also note that there is no information in the Consultation Paper as to the TA’s view with respect to the road opening rights (if any) of BWA licensees⁴. As it is the intention of the TA to issue BWA licensees with a UCL, it is necessary to understand if BWA licensees will have the right to open roads (as is the case with fixed carriers, but not mobile carriers). We would not agree with BWA licensees having a right to open roads if mobile carriers are not given similar rights as this will exacerbate the existing asymmetries that exist between different types of

³ Ibid, paragraph 186.

⁴ Other than a comment in paragraph 1 of the Consultation Paper that customer access networks based on BWA technologies can be rolled out relatively quickly “as no road opening is involved”.

carriers in a converged environment. We urge the TA to provide more detail as to her current views on road opening rights so the industry may provide comments.

4 Question 1

Question (1): Do you agree that the 2.3 GHz band be allocated for BWA services? If agreed, when should the spectrum be made available?

4.1 At this time, it is not clear whether the 2.3 GHz band is the appropriate band for providing BWA services in Hong Kong.

4.2 In particular, it seems unusual for the TA to be contemplating the 2.3 GHz spectrum band and providing detailed assessments of the technical parameters (eg. guard bands to be deployed) when it is still not clear whether this is one of the optimal spectrum bands to use with BWA applications. For instance, we have been informed by major equipment manufacturers that the 2.3 GHz frequency band may not be the preferred band for the development and commercialisation of infrastructure equipment necessary for the deployment of BWA services and this band does not feature as part of their BWA technology roadmaps.

4.3 Further, given that the TA appears to have some positive views with respect to the use of the 2.5 GHz frequency band for BWA services, it seems sensible to wait until the international allocations with respect to this band are clear prior to finalising a view with respect to the relevant bands to be used.

5 Question 2

Question (2): Do you agree that the opening up for the 2.5 GHz band for BWA should be considered at a later stage? If agreed, when and how much of the bandwidth should be made available to the market?

5.1 The 2.5 GHz band has been allocated by the ITU as an expansion band for 3G mobile services. We understand the ITU's World Radiocommunication

Conference 2007 (“**WRC-07**”) is to be held in October this year and one of the topics for discussion may be the designated allocations for the 2.5 GHz band.

- 5.2 Therefore prior to the WRC-07, it would be premature to consider whether it is feasible for the 2.5 GHz band to be used for anything other than 3G services. Also, it would be inappropriate to be providing comments now about the consideration of the 2.5 GHz band for BWA at some time in the future or contemplating whether, when or how much bandwidth should be made available to the market, as these comments would be contrary to the existing ITU allocations. Following the WRC-07 and depending on the outcomes of the meeting, the TA should consult again, as appropriate, on this issue.

6 Question 3

Question (3): Do you have any preferred frequency bands for BWA services? How much spectrum do you need initially and for future expansion (number of blocks, spectrum width of each block, in which bands) and when should the spectrum be made available to the market?

- 6.1 As stated above, it is premature for the TA to be consulting the industry, and for the industry to making decisions, with respect to potential BWA frequency bands until it is clear, at an international level, as to the allocations of the relevant spectrum. It is unhelpful for industry participants to pre-empt or second-guess what may happen at the WRC-07 meeting.
- 6.2 All our following responses in this submission are provided on the basis that any finalisation of the issues at this stage is premature given the forthcoming WRC-07 meeting.
- 6.3 We strongly suggest that the Government consider these issues again at a later stage, after the WRC-07 meeting.

7 Question 4

Question (4): Do you agree with the proposed frequency allocation plan given in Annex 1? If not, what is your proposal?

- 7.1 Although we think it is premature to consider this and suggest for the TA to reconsider this issue with industry after the WRC-07, in general, we are in support of frequency allocation plans which allow the relevant licensees to use the allocated parts of the band in the most technically efficient way.

8 Question 5

Question (5): Do you agree that a BWA licensee should be assigned no more than six 5 MHz blocks of the BWA spectrum?

- 8.1 In general, we believe that the TA should ensure any cap on the amount of any spectrum allocated to a licensee is at least sufficient to ensure a viable commercial opportunity for the successful bidders.
- 8.2 We are uncertain as to whether a maximum of 30 MHz of spectrum per BWA licensee will be sufficient spectrum to support all of the various options that may be available to be deployed with the spectrum and recommend for the TA to consider whether a higher cap is appropriate.
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9 Question 6

Question (6): If the result of the coordination with the Mainland authorities confirms that 85 MHz bandwidth in the 2.3 GHz band can be made available, do you agree that the TA should make available all the 85 MHz bandwidth for BWA service? If not, what is your proposal with reasons?

- 9.1 Whilst the Consultation Paper indicates that the use of the “2.3 GHz band in Hong Kong for BWA applications is subject to further coordination with the Mainland authorities”⁵, it is not clear from the Consultation Paper why coordination with the Mainland authorities is required with respect to the 2.3 GHz band.
- 9.2 Whilst the Consultation Paper sets out that the 2.3 GHz band is allocated in China for fixed, mobile and radiolocation services⁶, there is no information as to the type of coordination activities that would be required with the Mainland authorities, particularly those in Guangdong Province⁷ or what the 2.3 GHz frequency bands are currently being used for that necessitates extensive coordination (or what they may be used for in the future). We urge the TA to provide more information to the industry and public in relation to this issue so further comments may be provided.
- 9.3 As previously discussed, it is premature to be considering the bandwidth that may be allocated in the 2.3 GHz band given the other regulatory considerations, however from a technical point of view, we believe the proposed bandwidth could be sufficient, but this is subject to the undertaking of testing and field verifications.

⁵ Paragraph 16 of the Consultation Paper.

⁶ Paragraph 15 of the Consultation Paper.

⁷ See paragraph 16 of the Consultation Paper.

10 Question 7

Question (7): Do you have any views on the frequency allocation plan for the 2.5 GHz band?

10.1 Not at this time given the inappropriateness of considering the 2.5 GHz band for BWA services prior to the WRC-07 meeting.

11 Question 8

Question (8): Do you have any comment on the TA's preliminary view that no restrictions should be imposed on the types of applications and service that may be provided using the BWA spectrum?

11.1 We agree that the TA should not impose restrictions on the type of applications and services that may be provided with the relevant BWA spectrum.

11.2 As the TA has expressed a preliminary view that there should be no restrictions on the type of applications and services that may be provided using the BWA spectrum, then the Government needs to re-consider its view that it will not introduce spectrum liberalisation in the short-term⁸ as this is inconsistent with a service-neutral approach.

11.3 From our perspective, licensees should have the ability to liberalise or re-farm the use of spectrum allocated to them so as to use the relevant spectrum in the most economical way.

⁸ See paragraph 5.4 of the Radio Spectrum Policy Framework released by the then Commerce, Industry and Technology Bureau on 24 April 2007.

12 Question 9

Question (9): Do you have any further comments on the preliminary view of the TA that he should not prescribe any particular standard or technology for the BWA deployment?

12.1 Apart from taking into consideration what technology and equipment are available in the market so as to decide which frequency bands should be allocated for BWA services, we are of the view that recognised open standards should be used for the deployment of BWA services.

13 Question 10

Question (10): Do you have any further comments on the TA's preliminary view that assignment of the frequency blocks for BWA services should be made on a territory-wide basis?

13.1 We agree that the relevant frequency blocks should be assigned on a Hong Kong territory-wide basis.

14 Question 11

Question (11): Do you have any further comments on the TA's preliminary view that BWA licensees will be required, under the licence, to roll out the services within 24 months from the date when the licence is issued and that a performance bond will also be required?

14.1 We believe that any roll out schedule should be subject to readily available equipment and systems in the market. If relevant equipment and systems are not available, then a period of 24 months may be unrealistic. We note Singapore has required a 18 month roll-out for the 2.5 GHz band BWA service (as the Infocomm Development Authority of Singapore (“**IDA**”) believed most BWA available equipment could readily operate in the 2.5 GHz band) but for 2.3 GHz,

the roll-out obligation is 36 months⁹ (as the IDA believed that equipment for the 2.3 GHz band was not as readily available and licensees would require more time to configure equipment for use in the 2.3 GHz band). Further, roll-out schedules (in terms of locations where retail services need to be rolled-out) should be consistent with previous roll-out obligations imposed by the TA on other licensees (for example, the roll-out requirements imposed on the 2G licensees acquiring PCS licences).

- 14.2 In relation to the performance bond proposal, without knowing the form in which the performance bond should be given (e.g. banker's guarantee or otherwise), the period for which it should be given (e.g. on a rolling basis) or the relevant monetary amount of the proposed performance bond, it is very difficult to provide comments on whether such a performance bond is needed. We suggest for the TA to provide more detail to the industry and public in order to obtain further comments.

15 Question 12

Question (12): Do you agree with the proposed frequency assignment method as stated above?

- 15.1 Subject to our comments below, in general, we agree with the TA that the BWA spectrum should be assigned by a hybrid selection method including a simple pre-qualification and an auction. However, we recommend that the TA continue the practice, as in the 3G auctions, to consult with the industry on the pre-qualification and auction rules, for the issuance of the BWA licence. In particular, we note the remark in question 13 of the Consultation Paper with respect to an 'open auction' and the lack of detail as to the meaning of this term. We have set out our comments in relation to this issue in our answer to question 13 below.

⁹ See <http://www.ofta.gov.hk/en/ad-comm/rsac/paper/rsac3-2006.pdf>, paragraph 11.

16 Question 13

Question (13): Do you have any further comments on the TA's preliminary view that an up-front lump sum payment basis should be adopted for SUF, the amount of which will be determined through an open auction?

- 16.1 The TA's preliminary view that an up-front lump sum payment should be adopted for spectrum utilisation fees ("SUF") is contrary to the position of the TA when auctioning the 3G spectrum in 2001 (when a deferred payment basis was preferred by the TA). If the TA is minded to utilise an up-front lump sum payment method then she must consider how this impacts upon the existing 3G licensees. In particular we note that the 3G licensees are required to engage in the production of detailed and time-consuming reports as required by the 3G accounting manual and must comply with extremely detailed anti-avoidance licence conditions which have been imposed on the 3G licensees as a result of the choice of the deferred payment basis by the TA. If the TA follows through with her preliminary view to implement an up-front lump sum payment method then the existing 3G licence conditions must be amended so as to create a level playing field between the 3G and BWA licensees.
- 16.2 One additional comment we wish to make is in relation to the remark in question 13 about the SUF amount being determined "through an open auction". We do not know, and have not been provided with details, about the TA's thinking behind this concept and there is no commentary in any of the paragraphs of the Consultation Paper about an 'open auction' or how this differs from the previous 3G auction process.
- 16.3 With the lack of information provided, we can only speculate as to the meaning of 'open auction', however note that the 3G auction held in 2001 was a 'dark room auction'. We understand the 'dark room auction' was designed by the Government to ensure there was no collusion amongst the bidders and all bidders were treated equally and fairly. It is not clear how, or if it is the intention that, the

‘open auction’ will still achieve these aims. Given the lack of detail about the ‘open auction’, we urge the TA to further consult the industry and public about this new concept or adopt the same auction style as in the 3G auction process.

17 Question 14

Question (14): Do you agree that BWA licensees should not be subject to an ex ante Open Network Access (ONA) requirement?

- 17.1 In general, we are of the view that all carrier licensees should compete on a level playing field. In this particular case, the relevant playing field is the application of the same licence terms and conditions to all carrier licensees.
- 17.2 However, at this point in time, the same terms and conditions do not apply to carrier licensees with respect to open network access (“**ONA**”) obligations. As the TA knows, the 2G and 3G licensees are subject to ONA requirements (in other words, the need to make available up to 30% of their network capacity to unaffiliated mobile virtual network operators (“**MVNOs**”) or content or service providers (“**CSPs**”)¹⁰) and consequential licence conditions (one example being the anti-avoidance provisions relating to MVNOs and CSPs in Special Condition 13 of the 2G and 3G mobile carrier licences), whilst all other carrier licensees do not have such obligations.
- 17.3 As such, if the TA is considering that the BWA licensees should not be subject to an ex-ante ONA requirement, then the same must apply to the 2G and 3G licensees and the ex-ante ONA requirements must be waived in these carrier licences. On the condition that the TA waives the ex-ante ONA requirements in the 2G and 3G licences before or when the BWA licences are issued, we do not object to the TA’s proposal.

¹⁰ Special Condition 12 of the 2G and 3G mobile carrier licences.

18 Question 15

Question (15): Do you consider that FMC services should be allocated with new number ranges?

18.1 We disagree with the proposal that FMC services should be allocated with new number ranges.

18.2 In particular, we disagree because it does not appear to make sense for one or more new number ranges to be made available for FMC services when:

(a) it is not clear what would constitute a ‘FMC’ service and therefore when a BWA licensee would be eligible to apply for a FMC number block (or whether other licensees would be eligible to apply for FMC number blocks should they provide ‘FMC’ services);

(b) it is not clear what telephone numbers could be utilised for FMC services given there are few, if any, complete number levels available to use within The Numbering Plan for Telecommunications Services in Hong Kong (“**Numbering Plan**”) for existing services, let alone ‘FMC’ services;

(c) there is a debate currently going on at the Telecommunications Numbering Advisory Committee (as established by the Office of the Telecommunications Authority (“**OFTA**”)) about the shortage of telephone numbers available for mobile services and the way forward when the existing numbers are soon exhausted – clearly there is a demand for telephone numbers to be used for mobile services and it would not make sense to utilise number blocks for ‘FMC’ services when these could potentially be used for mobile services;

(d) the TA is considering to move to a non-service specific Numbering Plan - in other words if fixed-mobile number portability is introduced then the Numbering Plan will cease to be service specific and the use of dedicated

FMC number ranges will be contrary to the use of level numbers 2, 3, 6 and 9 for both fixed and mobile carriers;

- (e) it is not clear if dedicated number ranges were allocated for FMC services how this would affect, or be impacted by, the TA's recent statement about universal service arrangements and the move to utilisation of certain number blocks (ie. 2, 3, 57, 58, 6 and 9) for universal service contributions ("USCs") and whether providers of FMC services that were allocated number blocks would be required to make USCs; and
- (f) it is not clear if there is enough demand for new 'FMC' number blocks and we note that since the decision by the TA to assign number levels with leading prefix '57' and '58' to 'Service Based Operators' (or voice over Internet protocol operators) very few blocks have been allocated¹¹.

19 Question 16

Question (16): Do you agree that numbers with prefixes "2" and "3" should be allocated to fixed/"limited mobility" BWA services while numbers with prefixes "6" and "9" should be allocated to "full mobility" BWA services?

19.1 First, it is incorrect to indicate in paragraph 48 of the Consultation Paper that during the second consultation process "all respondents agreed with the TA's proposal" in relation to the allocation of numbers for fixed/'limited mobility' services. When responding to the second consultation paper, CSL (as part of the joint operator submission) did not agree with this proposal.

¹¹ Since the decision within the TA statement relating to the Services Based Operator ("SBO") Licence dated 6 January 2006 to allocate number blocks with leading digit '57' and '58' to SBO licensees, we notice that only four number blocks out of the possible 200 number blocks (being 5800, 5802, 5804 and 5807) have been assigned to Class 2 SBO licensees, according to the Numbering Plan.

- 19.2 With respect to our position on this issue, we disagree with the proposal, particularly when considering the problems associated with defining the relevant services and the impact on portability.
- 19.3 For example, it is not clear from the Consultation Paper as to what constitutes a fixed or ‘limited mobility’ BWA service and what is a ‘full mobility’ BWA service. We question whether the TA is utilising definitions that were used in previous consultation papers or if the meanings of the terms have changed. Further, it is uncertain what would happen if a customer using a limited mobility service as offered by a BWA licensee later chooses to upgrade their service to a full mobility service from the same licensee. Should a new telephone number be provided to the customer by the licensee?
- 19.4 Further, if telephone numbers are to be allocated in such a fashion, does this translate to restrictions for number porting? In other words, if a customer ports their number from a fixed or limited mobility BWA service provider to a full mobility BWA service provider, would they need to change their telephone number?
- 19.5 If the TA is of the view that customers may port their numbers from limited mobility to full mobility services (and vice versa), then the TA must revisit the decision of requiring numbers used for class 1 services to be capable of porting but not numbers used for class 2 services.
- 19.6 Given the TA’s view, as set out in paragraph 31 of the Consultation Paper, that she will not restrict the type of applications and services that may be provided using the BWA spectrum, it is not clear if this means the TA will allocate telephone numbers to all BWA licensees or only those that decide to provide a retail service.

19.7 Finally, we believe it will be difficult to police when a user is using a BWA device in a fixed mode, a limited mobility mode or a full mobility mode. We believe these issues must be considered and resolved prior to allocating any numbers to BWA services.

20 Question 17

Question (17): Do you agree that BWA licensees should be subject to the requirement of facilitating both Operator Number Portability (ONP) and Mobile Number Portability (MNP), including the Fixed Mobile Number Portability (FMNP) to be introduced in the future?

20.1 We agree that BWA licensees should facilitate ONP, MNP and FMNP and urge the TA to commence the feasibility study into FMNP as soon as possible.

20.2 We note that the TA's proposal to allocate number ranges to FMC services seems contradictory to the notion of BWA licensees facilitating ONP, MNP and FMNP as presumably FMC numbers would not be able to port to fixed or mobile numbers, however fixed and mobile numbers may be able to be ported to a BWA licensee offering FMC services. As stipulated above, it makes no sense to allocate number ranges for FMC services and we disagree with the proposal.

21 Question 18

Question (18): Do you agree that BWA licensees should be subject to the requirement of denial of service to suspected stolen apparatus?

21.1 We understand in a current release¹² from the WiMAX Forum that device-user authentication is specified in detail, however device authentication is seen as an optional item and is out of scope of the current release. Without both the device-user authentication and device authentication, we understand it will not be

¹² [WiMAX End-to-End Network Systems Architecture Stage 2-3 Release 1.0.0](http://www.wimaxforum.org/technology/documents/WiMAXNetworkArchitectureStage2-3Rel1.0.0.zip) dated 28 March 2007
See <http://www.wimaxforum.org/technology/documents/WiMAXNetworkArchitectureStage2-3Rel1.0.0.zip>

- possible to detect stolen BWA devices. Although we understand the WiMAX Forum is now addressing the WiMAX end-to-end system architecture from a systems standpoint where device authentication and device-user authentication will be included, it is premature to consider this proposed licence condition until there is clarity from the WiMAX Forum.
- 21.2 Further, it is not clear whether the TA considers it appropriate to apply such a licence condition to all BWA licensees or only those that choose to offer a retail service.
- 21.3 Finally, as stated above, the licence conditions applicable to carrier licensees should, as far as possible, be the same. Therefore, should the TA decide to not include this licence condition in the UCL licence applicable to BWA licensees, then the equivalent licence condition in the 2G carrier licences must be removed or waived.

22 Question 19

Question (19): Do you agree with the proposed approach to resolve adjacent channel interference issues?

- 22.1 We note that the TA has proposed to not specify any requirements with respect to adjacent channel interference issues for the BWA service and suggests for licensees to coordinate amongst themselves to resolve any such issues.
- 22.2 Whilst we usually agree with light-handed or industry self-regulatory approaches, we are not sure if channel interference issues will be solved, even with the establishment of block edge emission masks (“**Emission Masks**”), particularly where time division duplex mode is utilised by a BWA licensee. We believe it is necessary for OFTA to undertake further technical tests in order to understand whether Emission Masks are adequate to solve adjacent channel interference issues or if other solutions, such as guard bands, need to be considered.

23 Question 20

Question (20): Do you agree with the proposed guard bands for the 2.3 GHz band? If the spectrum 2.300-2.305 GHz is made available for BWA, do you agree that the BWA licensees in that frequency need to do some technical adjustment to avoid possible interference generated by the Electronic News Gathering/Outside Broadcast links?

23.1 Whilst we are of the view that it is premature to be considering whether the 2.3 GHz band is appropriate for a BWA service, we agree, as a concept, that guard bands are needed when allocating spectrum generally. With respect to the guard band as proposed by the TA, in the event that the 2.3 GHz band is considered appropriate to be used at a later time, it may be sufficient, subject to the undertaking of testing and field verifications.

24 Confidentiality

24.1 We do not regard any part of this submission as confidential and have no objection to it being published or disclosed to third parties, however, this submission in its entirety is made on the basis that is without prejudice to our rights and the rights of our associated corporate entities.

-END-