



NEW WORLD PCS LIMITED

Submission

on

“Licensing of Mobile Services on Expiry of
Existing Licences for Second Generation Mobile Services

Analysis of Comments Received,
Preliminary Conclusions and Further Consultation

19 March 2004”

Submitted on
19 June 2004

1. **Background**

1.1 This written submission sets forth the position of New World PCS Limited ("NWPCS") in respect of the Consultation Paper entitled "*Licensing of Mobile Services on Expiry of Existing Licences for Second Generation Mobile Services – Analysis of Comments Received, Preliminary Conclusions and Further Consultation*" issued by the TA dated of 19 March 2004.

2. **Licensing Arrangement for the Existing GSM and PCS Licences**

2.1 NWPCS support the TA's position that "right of first refusal" shall be granted to 9 incumbent GSM and PCS licensees ONLY.

2.2 NWPCS agree with the TA that, if the existing GSM/PCS licensees ("Renewed Licensees") exercise the "right of first refusal" the commencement date of new licences ("Renewed Licences") will immediately follow the expiry of existing licences. We believe that this arrangement could foster smooth transition and avoid any possible service interruption to mobile customers.

2.3 Migration to 3G Services for PCS Operators

2.3.1 We concur with the TA that there is no overriding policy concern to implement the rationalization of spectrum at the present moment and that the TA will reserve sufficient seed spectrum in appropriate frequency bands to facilitate existing PCS operators for migration to 3G Services.

2.3.2 Nonetheless, we recommend the TA to

(a) set out timetable for the frequency rationalization exercise; and

- (b) clarify the roadmap and procedures on how to migrate the existing 2G services in PCS bands to 3G Services.

2.3.3 OFTA has indicated that the 2 x 4.9 MHz of GSM1800 spectrum currently unallocated will be treated in the same way as the Block B spectrum for E-GSM. This is described in the consultation paper as being for the purpose of future expansion and frequency rationalization of the incumbent GSM and PCS licence holders (Paragraph 47). However, it is not clear from the consultation paper exactly what kind of rationalization is envisioned, and in what timeframe.

NWPCS agree that “right of first refusal” shall be granted to 9 incumbent GSM and PCS licensees ONLY, and the Renewed Licences will commence immediately upon expiry of existing licences. The TA should set forth the timetable for frequency rationalization exercise and the roadmap for migration of existing 2G services to 3G Services.

2.3.4 With regard to the above Section 2.3.2(b), NWPCS believe that there are two possible approaches to offer 3G Services for the existing PCS licensees, namely, (a) deploying 3G Services in the existing 2G spectrum; and (b) deploying 3G Services in new 2.6 GHz spectrum respectively :-

- (a) 3G Services in the existing 2G spectrum : WRC2000¹ has made the decision to extend IMT2000 bands for the core 3G bands in 2.1 GHz into several new frequencies including those currently occupied by GSM and PCS operators. As a result, 3G Services could be deployed, by the Renewed Licensees, in 825–960 MHz and 1710-1880 MHz (collectively “2G Spectrum”).

Based on market source feedback, it is estimated that 3G spectrum will be needed in the most competitive markets as early as 2008. In many cases, operators who already have

¹ Refer World Radiocommunication Conference 2000 decisions concerning IMT2000 (http://www.itu.int/newsarchive/wrc2000/releases/imt2000_res-bands.html)

2G networks in service would prefer to re-use their spectrum for 3G if they could. For one thing, site acquisition would be less likely to be an issue – 1800 MHz sites (UMTS or GSM) will have similar cell boundaries, minimizing site acquisition required to migrate to 3G. Secondly, operators who did not participate in the early 3G auctions could deploy UMTS in their existing spectrum.

Of these two bands (GSM/PCS), the PCS band will be more likely to be supported for UMTS deployment. The most competitive GSM markets are those having PCS players. The reason the licences were allocated in 1800 MHz spectrum is that there were already GSM operators consuming the 900 MHz. Hong Kong is a terrific case in point – entry by PCS operators helped make Hong Kong one of the world's most competitive markets.

From market source feedback, it is believed that 1800 MHz spectrum is the most likely alternative spectrum for UMTS to be supported by the industry in an early timeframe. The 1800 MHz band is less cluttered around the world compared to the 800 or 900 MHz bands, making contiguous bandwidth more likely to be available on a global basis. More importantly, 1800 MHz spectrum is being considered for both US and Latin America markets, where the core IMT2000 bands are not available for mainstream operators to offer 3G Services.

Therefore, the feasibility of deploying 3G Services in 2G Spectrum hinges upon two important pre-requisites:

(i) Availability of 3G infrastructure facilities and handsets from suppliers for deployment on 2G Spectrum

From market source feedback, the estimated date, judging optimistically, would be 2008 since all suppliers currently engage most of their resources on 3G deployment in 2.1GHz spectrum ("3G Spectrum"). It would then take about 2 years to deploy and commission the new network and further 2-3 years for migration of 2G to 3G Services. Above all, there is no guarantee that such equipment would be developed and be commercially available in the market at

all. Given the TA's proposed timeline of converging 2G and 3G licensing conditions by 2010, it would be unfair that the 2G licence operators could not provide 3G Services by 2010, being deterred by the lack of supply of necessary infrastructure and facilities. Furthermore, the 2G licence operators have to adopt a conscious handset strategy that can encourage the existing large subscriber base to adopt dual-mode 2G/3G handsets with the right capability during the 2G to 3G service migration.

(ii) Availability of sufficient 2G seed spectrum for services migration for two or more PCS operators

There is a lack of sufficient seed spectrum reserved for this approach, and in fact no further seed spectrum can be vacated and made available in existing 2G Spectrum after licence renewal. From market source feedback, 3G Services migration within PCS bands by means of limited seed spectrum reserved in GSM/PCS bands, i.e.

- 2 x 4.9 MHz in PCS bands (1708.1-1785 MHz / 1875.1-1880 MHz)
- 2 x 7 MHz in GSM bands (Block B 883-890 MHz / 928-935 MHz)

would be technically difficult and challenging. The temporary allocation of this seed spectrum could allow the PCS operator to clear out a 5 MHz block from within its licence, in order to deploy the first UMTS carrier. The temporary spectrum would be needed for a fairly lengthy period while subscribers are migrated to the UMTS carrier. Once a sufficient number of subscribers have migrated, a second carrier of UMTS would be added. Once the UMTS market is the norm, the PCS network could be turned off and the temporary seed spectrum returned. Such implementation logistics would be complicated, inefficient and time consuming. The TA would need to be flexible about the length of time the seed spectrum is allocated. It would also be difficult to ensure the hybrid 2G users migrating to 3G could enjoy the same comprehensive coverage and

network quality admit the transitional periods, given today's market sophistication in Hong Kong.

In summary, both pre-requisites above do not favour for 3G migration within 2G spectrum for existing PCS operators. This approach, though technically feasible, is highly undesirable and therefore not recommended.

There are 2 possible approaches to offer 3G Services for the existing PCS licensees, namely, (a) deploying 3G Services in the existing 2G spectrum; and (b) deploying 3G Services in new 2.6 GHz spectrum. Option (a) is not recommended due to lack of availabilities of infrastructure facilities and handset and of 2G seed spectrum for cost-effective service migration.

- (b) 3G Services in new 2.6 GHz spectrum : Another alternative is to deploy 2.6 GHz spectrum for 3G service migration for Renewed Licensees and thereafter the renewed licensees would return 1800 MHz to the TA if required for future use.

The new 2.6 GHz spectrum has already been allocated by the ITU for IMT2000, and is vacant or nearly vacant in major markets around the world. It is undergoing the standardization process and will be proposed in ITU WRC 2007. In January 2004, CEPT ECC PT1 has agreed a "working assumption" that the whole additional UMTS band 2500 – 2690 MHz will be for terrestrial component (no satellite) of IMT-2000. Once frequency points are defined and exact spectrum allocation decided, the 3GPP standardization on 2.6 GHz spectrum can start. From market source feedback, some major infrastructure and equipment suppliers are prepared to have equipment at 2.6 GHz band by 2008, in line with the European band availability time schedule and with the band plan discussion and decisions.

As the 2.6 GHz spectrum is totally new with abundant supply of bandwidth for seamless 3G service migration for multiple PCS operators, compared with the approach set forth in Section 2.3.4(a) above, NWPCS would highly recommend the TA to closely follow the

2.6 GHz standardization process, clean up the spectrum in advance, and bring up the 3G Services in the 2.6 GHz spectrum to the benefits of existing 2G operators and the public at large.

- 2.3.5 Regardless of either one of the approaches as mentioned in Section 2.3.4 above, the introduction of 3G Services and subscriber migration would take additional 2 or 3 years. Since the timeframe for the existing 2G licensees to offer 3G Services is based on market needs, OFTA's target date for convergence of 2G and 3G licence conditions, including payment of SUF and ONA, should be dependent upon the time when 3G Services will be offered by the 2G operators but not be fixed as 2010.

Option (b) is recommended since 2.6 GHz spectrum allows seamless 3G service migration for multiple PCS operators. Since the migration from 2G to 3G Services would take 2-3 years and the equipment availability would also be uncertain, we recommend such new licensing conditions as payment of SUF and ONA will only apply if the existing 2G licensees do offer 3G Services.

2.4 Release of Seed Spectrum in GSM/PCS Bands

Following the discussion in Section 2.3.4(a) above, even if the 3G equipment were readily available in 2G spectrum, neither the Block B nor the spare 2 x 4.9 MHz in PCS bands could fulfill their reserved purpose as seed spectrum. Instead of leaving the scarce seed spectrum unnecessarily idle for unknown years before the required equipment and handsets become available from vendors, if the market does exist at all, NWPCS strongly recommend the TA to immediately release the reserved seed spectrum in GSM/PCS bands to existing 2G operators for capacity expansion and network enhancement. Compared with most dual band operators, most PCS operators have long been extremely efficient in spectrum utilization. Table 1 below illustrates the current spectrum utilization situation.

Operator	2G Spectrum (MHz)	3G Spectrum (MHz)	Number of subscriber*	Number of subscriber per MHz Exclude 3G Spectrum
New World PCS	11.6	0	1,210,000	104,310
Peoples	11.6	0	1,050,000	90,517
Hutchison	19.9	19.8	1,800,000	90,452
SUNDAY	11.6	19.8	660,000	56,897
SmarTone	19.9	19.8	1,043,000	52,412
CSL	19.9	19.8	1,000,000	50,251

Table 1 Spectrum Utilization

*Subscriber figures of operator other than NWPCS are quoted from 13 Apr 04 Sing Tao Daily

The TA should establish guidelines for the allocation of spare 2G spectrum made available from the seed spectrum. The awarding criteria, together with bidding process, if necessary, should include

- Number of time frequency reuse ≥ 80
- Number of subscribers per MHz ≥ 90,000
- Spectrum efficiency in Golden Bowl (Erlang per MHz per km²) ≥ 6
- Any other relevant factors

NWPCS strongly recommend the TA to immediately release the reserved seed spectrum in GSM/PCS bands to existing 2G operators for capacity expansion and network enhancement and to establish guidelines for allocating spare 2G spectrum made available from the seed spectrum.

3. Arrangements for the Existing CDMA and TDMA Licences

3.1 We agree that the CDMA and TDMA licensees should not be entitled to the “right of first refusal” and the TA should vacate the frequency spectrum that they are currently used.

3.2 Regarding the TA's suggestion that Block A (825-835MHz/870-880MHz) should be offered to a new entrant in the upcoming licence application exercise, NWPCS primarily support the TA position that new licensee for the said spectrum would be granted for quality mobile data services. However, the TA should stay technology neutral, as usual, for the new licence and should not be biased towards cdma2000 technology. Furthermore, NWPCS propose that the new licensee should be restricted to offer mobile data services ONLY, such that the new licensees can focus on the advanced and innovative mobile data service which is consistent with the main objective for the TA in granting new mobile service licence for Block A spectrum. Above all, in view of the severe market competition in GSM/PCS voice services in Hong Kong nowadays, as intensified by the recent and upcoming launch of 3G Services, the introduction of yet another new licensee for mobile voice services would by no means benefit any parties, existing operators, the public or the new entrant itself, since over-production of mobile voice services will only result in waste of resources. Furthermore, there is other readily available option for the new entrant to provide mobile voice services, if deemed necessary, by means of existing 2G/3G MVNO arrangements.

4. Issue one New Mobile Licence Employing Block A in the 800MHz band

4.1 We support the TA's position that Block A (825-835Mhz/870-880MHz) should be offered to the new entrant in the upcoming licence application exercise. However, as mentioned in Section 3.2 above, the TA should stay technology neutral and restrict the new licensee to provide quality mobile data services only. If an existing GSM/PCS operator can bid a Block A licence successfully, there would be other technology options in addition to cdma2000, such as GSM 1x, WCDMA800, etc. Therefore, the TA should not be biased towards cdma2000. To further encourage and stimulate the mobile data market in Hong Kong, two new mobile data licences could be issued in Block A, each with 5MHz of bandwidth which is considered sufficient for mobile data services only. This would allow healthy competition between the 2 mobile data services licences in providing advanced and innovative mobile data services for the public at large.

We agree that the TA should vacate the frequency spectrum of CDMA and TDMA licensees, but the TA should stay technology neutral and should not be biased towards cdma2000 technology. The new licensee for Block A should be restricted to offer MOBILE DATA SERVICE ONLY. Furthermore, two such mobile data licenses can be issued in Block A, with 5MHz spectrum each, while mobile voice services can be provisioned by existing 2G/3G MVNO arrangements.

5. Reserve Block B for Future Use

5.1 Please refer to Section 2.3.4(a) above for the NWPCS' suggestion of deployment of "Block B" Spectrum (i.e. 883-890 MHz / 928-935 MHz).

6. Other available spectrum identified in the First Consultation Paper

6.1 Please refer to Section 2.3.4(a) above for our recommendations for unallocated PCS frequency spectrum of remaining 2 x 4.9 MHz.

6.2 Please refer to Section 2.3.4(b) above for our comments for allocation of 2.6GHz spectrum.

7. Method of Awarding the New Licence for Block A

7.1 We primarily concur with the TA's position to adopt an approach similar to the one adopted in 2001 for the 3G licensing exercise for awarding the new licence(s) for "Block A".

7.2 We opine further that to ensure continuity of spectrum usage, the licensing process should start as early as practicable (say, January 2006) such that once the Block A spectrum is vacant by June 2006, the new Block A licensee(s) can launch services soonest possible (say February or March 2007).

- 7.3 We also support the TA's position that the incumbent 2G operators should be allowed to participate in the licensing exercise for Block A licence(s). This is consistent with the existing practice that telecommunications licensees are open for application by any legal entities lawfully incorporated and existing.

We propose that the licensing process for "Block A" should start as early as possible. The incumbent 2G operators should be allowed to participate in the licensing exercise for Block A licence.

8. Payment of Spectrum Utilization Fee (SUF) for GSM/PCS Licences

- 8.1 We support the TA that initially there is a case for setting SUF for 2G licensees according to the structure different from that for 3G licensees.
- 8.2 However, we reiterate that there should NOT be SUF on the 2G licensees as long as they stay within 2G operations.
- 8.3 If there will be any convergence of the two structures of 2G and 3G licences conditions (including payment of SUF), the convergence should be deferred to the time when the 2G operators provide 3G Services, as explained in Section 2.3.5 above.

We recommend that convergence of two structures of 2G and 3G licences conditions should be deferred to the time when the 2G operators provide 3G Services, and there should NOT be SUF payment by 2G operators as long as they stay within 2G operations.

9. Licence Conditions applicable to all Licences

- 9.1 Likewise, we propose that the ONA obligation should only impose on the Renewed Licensees commencing from the time when the 2G operators provide 3G Services, as explained in Section 2.3.5 above.
- 9.2 We applaud the TA' s inclination to withdraw the proposal to oblige licensees to provide coverage to specified locations, provision of Cell Broadcast Services (CBS) / Multi-media Broadcast Multicast Service (MBMS) and the need for the Renewed Licensees to provide performance bond to guaranty its licensing obligation.
- 9.3 We agree that certain Mandatory Codes of Practice, as long as their contexts are reasonable and technically and commercially feasible, would be part of the licence conditions for the renewed licensees.

The licensing obligation of ONA should only be imposed commencing from the time when the 2G operators provide 3G Services. The mandatory Code of Practice should be reasonable and commercially feasible if it will apply to the mobile industry and become the licence conditions for the renewed licensees.

Date this the 19th day of June 2004.

Submitted by

New World PCS Limited