CONSULTATION PAPER

ON

Overall Spectrum Management and Review of License Terms and Conditions.

November 2009

UNITECH WIRELESS SUBMISSION

CHAPTER 1.

SPECTRUM REQUIREMENT AND AVAILABILITY

1. Do you agree with the subscriber base projections? If not, please provide the reasons for disagreement and your projection estimates along with their basis.

It will be difficult to reach the projected subscriber numbers without an extensive overhaul of the licensing and spectrum regime. The current allocation of spectrum for the various operators is extremely fragmented, and for the most recent license holders, very small. Further, assuming that the projected growth will mostly come from rural or semi-urban areas, the current spectrum assignments and the lack of flexibility with regards to utilizing the assigned spectrum will require significant investments in order to reach the current un-connected. The current number of license holders will increase the competitive landscape and the required returns might not be forthcoming to roll out significant rural networks without amendments to the current restricted license conditions and the limited availability of 2G spectrum. It should be noted that it will take significant time before 2,1G 3G handsets and networks will reach the rural and lower ARPU customers. However, it might free up some 2G spectrum in the urban areas which could be re-assigned.

2. Do you agree with the spectrum requirements projected in 1.7 to 1.12? Please give your assessment (service area wise).

Spectrum requirement will actually greatly depend upon spectrum efficiency. In the current situation some operators have been allocated only the start up spectrum of 2x4.4 MHz in 1800 MHz band. If this practice continues, with further allocations of start up spectrum the projections will not be adequate. However, a more pragmatic approach to spectrum utilization would be to permit MVNO's, RAN sharing and spectrum sharing whereby sub-optimal spectrum blocks are aggregated by small operators on commercial terms to achieve greater spectrum efficiency. In this case, the projections might be reasonable

While it is difficult to give service area wise assessments without going into detailed analysis, it can be safely stated that the spectrum requirements at the levels projected by TRAI can be achieved following a market based approach, i.e.

- The socially optimal solution is that spectrum be allocated to commercial services whenever the value of its use for such services is higher than alternative uses.
- The demand for commercial wireless communications services will be particularly high in India compared to other countries due to limited wireline infrastructure.
- Government should utilize all possible bands which are commercially used internationally, since terminals and equipment is produced in large volumes in the bands, affording economies of scale.

In particular, TRAI should safely assume that the major commercial bands, as identified by ITU, are most valuable to the Indian society if used for commercial services. The spectrum allocation required to achieve the highest possible welfare in India consists, in each circle, of at least as much bandwidth as that identified by TRAI in the major frequency bands as identified by the ITU.

3. How can the spectrum required for Telecommunication purposes and currently available with the Government agencies be re-farmed?

Historically, regulators have issued licences to specific users for specific purposes, such as electronic communications networks and services, thereby limiting access to radio spectrum and how it may be used.

Over the last decade however massive growth in spectrum demand from both existing and new electronic communications services, combined with the convergence of platforms used to deliver services, has resulted in the need for a more flexible approach to spectrum management. The advantage of more flexible and market based approaches is that for many frequency bands under individual authorisation spectrum licensees have a greater scope to innovate and deliver better services to consumers. Market based approaches also facilitate easier and more rapid access for new spectrum users, resulting in new entrants and a more competitive market for electronic communications.

If restrictions are removed all licensees will have more freedom to deliver a wider range of services, meaning that it should be more difficult for one or more licensee to dominate the provision of a particular service as a result of their rights of access to particular spectrum. Nonetheless, although the potential problem is expected to diminish in the longer term, it will still be necessary for regulatory authorities to maintain sufficient powers to deal with any competition issues that may arise. In particular, technical restrictions in order to avoid harmful interference will continue to be necessary and, due to great demand, there will be spectrum scarcity in certain key bands.

Therefore, due to the obvious growing demand for spectrum in India, it is critical that the Government examines whether spectrum is being used in an efficient manner and that spectrum is released as soon as possible to those who value the spectrum the most.

One of the major concerns regarding Government agency use of spectrum is that they normally are not charged for the utilization of such spectrum. The opportunity cost to the State and the overall economy is usually rather large as such agencies are very often reluctant to relinquish commercial spectrum and make the required investments in alternative and very often more efficient, communication technologies. Utilization of commercially usable spectrum should carry a charge for private and government users alike.

We would argue that the benefits to the overall society are better served by charging all users of the main standardized commercial telecommunication bands.

The quantum of public sector spectrum holdings in India, is not in the public domain therefore it is difficult to assess its opportunity cost, however going by the figures in the other developed countries it will be roughly of the order of 50% of the total commercially usable spectrum bands. Past experience as known from the general information has been that, DoT has not been able to get the spectrum released from the Public sector bodies. Therefore, there is a need to have a new approach to manage Public Sector spectrum holdings and encourage its release, such as,

- Administered Incentive Pricing, so that the spare spectrum can be returned to the Government at an incentive price.

- Permitting Public Sector Bodies to take part in the spectrum trading, so that the benefit flows to the current user as well as to the new users, who are already licence holders.

In general, efficiency is achieved by exposing spectrum users to the opportunity cost of using spectrum. Government users of commercial bands would be so exposed if they had to acquire spectrum in auctions, and if they were allowed to trade their existing spectrum holdings. If Government agencies were allowed to sell their spectrum, (or receive a fraction of the revenues from sale of spectrum they use) they would immediately be given incentives to use their spectrum efficiently or dispose it of.

4. In view of the policy of technology and service neutrality licences, should any restriction be placed on these bands (800,900 and 1800MHz) for providing a specific service and secondly, after the expiry of present licences, how will the spectrum in the 800/900 MHz band be assigned to the operators.

As regard whether licence holder is free to use other technologies within the licence period, it is stated that the UAS Licenses are technology / service neutral. However, the specific spectrum bands allocated to the Licensees are not technology neutral as separate bands and bandwidths are allotted for GSM and CDMA operators. Therefore, UAS Licensees do not have an automatic right to use the allotted spectrum for offering services utilizing UMTS / HSPA / such 3G technologies, in the 800/900/1800 MHz bands. If commercial methods for allocation are used, than market forces and standardization will dictate the type of technology utilized.

Regarding use of different technologies on expiry of the current validity of the spectrum holdings (which is co-terminus with the current license period), all the expiring 800 / 900 MHz spectrums should be re-farmed and put up for auction, where after, the winner may use it for 3G Technologies. This is particularly so because current holdings traditionally are quite fragmented and cannot directly be used for other technologies, while respecting the spectrum mask. To facilitate this exercise and protect their customer's interest, the operators should be given advance notice of 3 years of this intent. This time is to enable the operators to plan their subsequent spectrum needs through market driven mechanisms like auction , trading and sharing, that we are recommending subsequently in the paper.

5. How and when should spectrum in 700 MHz band be allocated between competitive services?

The ITU-R WRC-07 identified spectrum for IMT within the UHF band 698 – 862 MHz, which is currently used for TV broadcasting in some countries. The band 698-790 MHz was identified for IMT in the following eight countries in ITU-R Region III: Bangladesh, China, Korea (Rep. of), India, Japan, New Zealand, Papua New Guinea, Philippines and Singapore. From an industry point of view, this band is of particular interest for mobile broadband services with respect to radio wave propagation characteristics that will allow cost-effective wide area network coverage as well as favorable deep in-building coverage.

Furthermore, work is also undertaken in APT/AWF to develop a proposal for a UHF band plan in the Asian region. In its work plan for 2010, the APT/AWF is currently planning on preparing, and subsequently finalizing in 2010, a draft AWF Report/Recommendation for harmonized UHF Digital Dividend band plan and ask for Management Committee approval. If necessary, they will inform APG of status of draft AWF Report/Recommendation for harmonized UHF digital dividend band plan, and, if necessary, update ITU-R WP5D meeting of the activity of

AWF WG-SPEC Sub-WG 1. The AWF Spectrum Sub-WG1 Correspondence Group is established to carry out further studies on technical aspects of the AWF work on "Digital Dividend".

We would propose that DoT considers an early allocation process for release of the spectrum in the UHF band with the aim of relieving the main standardized mobile bands of the large screen broadband traffic. Such a move would facilitate both a more rapid development of broadband but also facilitate the fast growing traffic on the mobile standard bands such as 850/900/1800/2100 MHz. DoT should consider the use of the UHF band for mobile services, in order to benefit from significant propagation advantages this band provides in providing ubiquitous, affordable, mobile broadband services. With regard to a UHF band plan for India, the we recommend that the 2x50 MHz option is preferable. Combined with the rapid roll-out of mobile networks and extensive subscriber growth in the Indian market, this leads to a situation where making maximum spectrum available in the UHF band is of utmost importance.

6. What is the impact of digital dividend on 3G and BWA ?

Due to severe spectrum scarcity in India, and the UHF band being important for mobile broadband, especially in rural areas, the digital dividend is a great opportunity to connect the unconnected. In particular the 700MHz band should be used immediately to facilitate the big screen wireless broadband market. Further, release of other bands outside the current standardized handset bands will spur the broadband market. In light of the severe spectrum scarcity in India and the pent up demand for spectrum combined with ever more bandwidth demanding applications and services, the UHF band will be important as a tool to meet growing and existing demand. TRAI should not compare this to the ITU standardized bands, such as 2.1GHZ which attains its value through the standard end user terminals and its superior mobility aspect. We would request TRAI to clearly separate the market for mobile services (small screen) and semi mobile services aimed at large screen terminals.

CHAPTER 2.

LICENSING ISSUES

7. Should the spectrum de delinked from the UAS license? Please provide the reasons for your response.

The current licensing regime is inefficient and holding back the development of the Indian wireless sector, and that establishing a regime where spectrum and license are de-linked are an important first step in approaching a more flexible spectrum regime that permits India to reach its full potential.

As of now, there are a variety of licences, which DoT has issued in the past for Telecom operations which includes UASL, BSO and CMTS as well as ISP category A & category B. Government is also considering TRAI's recommendation on Internet Telephony. This is likely to create complicated and conflicting environment. Therefore it is essential that as a policy anyone who gets spectrum should definitely be asked to obtain a license, the cost of which, should, be marginal because of de-linking of spectrum from the licence. This will lead to a single licence geographical area-wise for all the telecom needs.

TRAI in its recommendation of 13 Jan 2005 suggested that DoT should migrate from UASL policy to ULR (Unified Licence Regime). i.e. Moving from Unified Licence only for Access Services in a Licencing area to a Unified Licence for all Telecom services. The Recommendation also covers delinking of spectrum from issuance of Licence. This part of recommendation DoT left it from consideration at that time. Going forward acceptance of such a concept is over due. However, since 4.5 years have passed and sector has undergone numerous developments the subject requires to be re-studied in depth and the concept implemented.

In the light of the above, spectrum should be delinked from the UASL. Moreover, the methodologies of spectrum allocation in a linked environment are fraught with innumerable complexities like level playing field between operators at different stages of their life – cycle, efficient utilization of allotted spectrum (who decides that and how?), different treatment for different technologies, differing frequency bands and their characteristics, etc. Further, as new technologies are developed in existing bands, it will become increasingly impossible to administer spectrum allocation and pricing.

We therefore see no option but to revisit TRAI's Unified Licence recommendations wherein the licence is procured at a nominal price, and spectrum procured through auction, trading and such market driven methods. However, whereas such a regime would be easy to implement for future licencees, an equitable migration path needs to be worked out for existing licencees.

We propose the following:

- The existing licencees are **entitled to up to 2x6.2 MHz of GSM spectrum without payment of any additional up-front fee beyond that paid by them for procuring their licence**. This is based on a reading of the licence agreement (clause 43.5), and the fact that some of the older operators were allotted 2x6.2 MHz without meeting any Subscriber

Linked Criterion (SLC). **Kindly note that this has been a fundamental assumption in the Business Plans of recent Licencees, and any policy change that creates financial or other barriers in their transition to 2x6.2 MHz will seriously undermine their businesses.**

- Operators with 2x4.4 MHz should therefore be allotted **another 2x1.8 MHz on reaching the relevant SLC**. Adequate spectrum should be **earmarked**, and set aside **for 5 years**, for such operators to reach 2x6.2 MHz. Beyond 2x6.2 MHz they should procure spectrum through market determined mechanisms.

- Those **currently holding more than 2x6.2 MHz should pay a one–time per MHz amount** pro-rata to the remaining validity based on the winning prices determined in the forthcoming 3G auctions. This has also been recommended by DoT's Second Committee.

8. In case it is decided not to delink spectrum from UAS license, then should there be a limit on minimum and maximum number of access service providers in a service area? If yes, what should be the number of operators?

TRAI's paper shows that the HHI stabilizes at 6 operators per circle, which would be a desirable objective in the steady state. However given that there already are more than 10 operators per circle, while a cap cannot be mandated today, but incentivizing consolidation is desirable. A cap also becomes irrelevant in a Unified Licence regime. A floor is definitely essential from a competition viewpoint, and should be four as laid out in the M&A policy. As regards capping, the benefit of fewer players can be attained by resorting to market based approach which includes spectrum trading and relaxed M&A policy. The entry MVNO's should also be allowed.

Again, this issue should be viewed from a competition and available resources per circle. It is clear that the consumer benefit decreases in the longer term with too many operators sharing a relatively small spectrum base. Both from a natural resource and long term sustainability point, consolidation into fewer but more sustainable operations should be encouraged.

9. What should be the considerations to determine maximum spectrum per entity?

Where the government needs to determine maximum spectrum per entity, considerations should be made on the basis of criteria which must be objective, transparent, non-discriminatory and proportionate. Any such criteria must give due weight to the achievements of the objective of promoting competition by:

a) ensuring that there is no distortion or restriction of competition in the sector

b) encouraging efficient investment in infrastructure, and promoting innovation; and

c) encouraging efficient use and ensuring the effective management of radio frequencies resources.

10. Is there a need to put a limit on the maximum spectrum one licensee can hold? If yes, than what should be the limit? Should operators having more than the maximum limit, if determined, be assigned any more spectrums?

Yes, there is a need to cap the spectrum holding for specific services i.e. 2G, 3G, etc. Moreover, since it will be increasingly difficult to link technologies with spectrum bands, in future the cap should be applied on the total holding of a company.

We propose a **limit of 2x25 MHz per operator per circle**, for **all spectrum holdings i.e. 800 + 900 + 1800 + 2100 + 2300 MHz** bands. The limits should be regularly reviewed as and when new bands are inducted in the Telecom sector for large or small screens, depending upon the actual situation on the ground.

As per TRAI's paper (Clause 2.11 *"Presuming an average assignment of 2X8 MHz per GSM operator, an additional spectrum of 2x50.8 MHz spectrum will be required for GSM mobile services in Delhi. This would make the total requirement of spectrum in 900/1800 MHz as 104.4 MHz."*) **at 2x8 MHz per operator**, even if all the spectrum in the 900 and 1800 GSM bands were available, it would not be enough for all the existing operators in circles like Delhi. **In such circles there should be special provisions to cap combined holdings in these bands to 2x8 MHz**. Operators holding more than 2x8 MHZ should be incentivized to surrender the excess.

Further Dot should consider mandating (at administered prices) MVNO access in areas where spectrum is in short supply.

11. If an existing licensee has more spectrum than the specified limit, then how should this spectrum be treated? Should such spectrum be taken back or should it be subjected to higher charging regime?

One might consider charging significantly more for such spectrum in a transitional phase. Such spectrum should be allocated to operators who only have access to the minimum start up spectrum. If the optimum, as outlined above for 1800MHz is a block of 2x8 MHz, than this might be the threshold.

12. In the event fresh licenses are to be granted, what should be the entry fee for the license?

No more new start up spectrum should be granted in the main 2G bands (800/900/1800) until all current holders of spectrum have reached the optimum allocation of 2x8 MHz. It is of paramount importance that the current environment is re-structured, that all restrictions on consolidation, spectrum sharing or effective use of spectrum be removed, and that the industry is permitted time to re-structure, before further spectrum linked licenses are introduced in these bands. In relation to 2.1GHz, WiMAX and 700MHz, further allocations can be made as soon as possible to free up capacity in the current 2G/2,5G Bands.

13. In case it is decided that the spectrum is to be delinked from the license than what should be the entry fee for such a License and should there be any roll out condition?

TRAI's recommendation dated 13th January, 2005 on Unified License, duly updated, may be used. Once spectrum is assigned on the basis of a market – driven mechanism, there would be no need for roll – out obligations.

If the Government's objective is to ensure extensive network coverage, particularly rural & remote areas than offered by operators on commercial considerations, then there are other alternatives, such as:

a. offering alternate band choice like 900 MHz (to holders of 1800 MHz only) or 450 MHz, where roll out is relatively cost effective.

b. Separate tender/auction for specific area rural coverage, which requires the lowest subsidy from USO fund. In addition, contract could specify mandatory national roaming arrangements, as a part of the contract if desirable.

This will result in cost efficient roll out & operations, under contract stipulations, as distinct from regulatory framework.

14. Is there a need to do spectrum audit? If it is found in the audit that an operator is not using the spectrum efficiently what is the suggested course of action? Can penalties be imposed?

Spectrum audit might reveal spectrum hoarding and inefficient use of spectrum. Spectrum hoarding should be avoided as this could lead to one or a few market player(s) holding more spectrum than they need in order to prevent new entrants on the market. In these cases, spectrum audit might be useful, and a mechanism to remedy distortion of competition and inefficient use of spectrum.

It will not remedy inefficient use of spectrum to impose penalties of an economical nature, as this would probably not give an operator the right incentive to use spectrum more efficiently if they, at the same time are not running the risk of loosing unused spectrum.

In fact spectrum audit should cover Government & other public sector user Departments as well.

15. Can spectrum be assigned based on metro, urban and rural areas separately? If yes, what issues do you foresee in this method?

A spectrum crunch is being felt only in the dense urban areas of the country, which is where the maximum traffic density exists, and where all operators would like to be present. The objective of subdividing the present licence areas for assigning spectrum is, therefore, not evident to us. The downsides would be many: Increased spectrum management activity, the potential for disputes arising from commercial and interference issues arising from spill – over across boundaries of the areas et al.

16. Since the amount of spectrum and the investment required for its utilization in metro and large cities is higher than in rural areas, can asymmetric pricing of telecom services be a feasible proposition?

Asymmetric pricing of services would be a retrograde step. With enough competition in the market – place, Indian telecom services are the lowest priced in the world, and any administered pricing is not justified.

While auctions help Government solve the initial allocation problem in a transparent & non-discriminate way; Asymmetric pricing becomes redundant when secondary trading is permitted. In addition it unnecessarily complicates the spectrum trading/spectrum sharing.

CHAPTER 2.

M&A ISSUES

17. Whether the existing licence conditions and guidelines related to M&A restrict consolidation in the telecom sector? If yes, what should be the alternative framework for M&A in the telecom sector?

The existing M&A conditions are extremely stringent with respect to the spectrum retained by the merged entity. This is brought out of the fact that no merger has yet happened in the Telecom industry. An alternate framework, not linked to Subscriber-base, is therefore required for incentivizing consolidation. We propose that the cap be the **lower of 25% of the total allocated spectrum in all bands in a particular service area or 2x25 MHz** as mentioned above in our answer to Q 10.

M&A provide one of the methods of transfer of spectrum to a new user who can create greater value from it by way of better spectral efficiency or at a later date to select the applications and technologies that generate greatest value; as & when permitted by the regulatory framework, and hence the new owner is prepared to pay an amount that exceeds its worth to the incumbent holder. Therefore M&A help achieve consolidation.

Thus the limit of 2X25 MHz needs to be pragmatically reviewed as & when new tranches/ bands are inducted for commercial use in a particular licensing area.

18. Whether lock-in clause in UASL agreement is a barrier to consolidation in telecom sector? If yes, what modifications may be considered in the clause to facilitate consolidation?

The Lock-in clause in the UASL agreement constitutes a high exit barrier for promoters, and therefore it is not conducive for consolidation. Due to constraints in spectrum availability in a particular band and release in dribbles, spectral inefficiencies are not allowing the full exploitation of the scarce resource; therefore there is an urgent need to achieve consolidation. Hence this exit barrier should be removed.

19. Whether market share in terms of subscriber base/AGR should continue to regulate M&A activity in addition to the restriction on spectrum holding?

At least enumeration of two conditions is necessary in order to check and monitor the market monopoly conditions. Therefore apart from limiting the spectrum holding in the hands of merged entity, the market share in terms of subscriber base is also necessary.

20. Whether there should be a transfer charge on spectrum upon merger and acquisition? If yes, whether such charges should be same in case of M&A/transfer/sharing of spectrum?

This is answered in 22 below

21. Whether the transfer charges should be one-time only for first such M&A or should they be levied each time an M&A takes place?

This is answered in 22 below

22. Whether transfer charges should be levied on the lesser or higher of the 2G spectrum holdings of the merging entities?

There is a case for imposing Transfer charge in case if spectrum has been acquired without going through the market process. However the transfer fee should be of such a value that does not discourage the much needed consolidation. It should be a one time affair and subsequent sale of that slot should not attract any transfer charge. It should equally apply to the spectrum held by Government & Public Sector Bodies. As recommended by DOT Spectrum committee, the same fee should apply irrespective of whether the spectrum is being transferred or acquired through a merger/ trading/ sharing. If required an element of early bird incentive can be inbuilt into the transfer fee charges.

23. Whether the spectrum held consequent upon M&A be subjected to a maximum limit?

Yes, please refer to our response to question 10.

CHAPTER 2.

Spectrum Trading

24. Is spectrum trading required to encourage spectrum consolidation and improve spectrum utilization efficiency?

Management of Radio Spectrum is based on the premise that the spectrum is inherently scarce resource that must be apportioned among competing users and uses (at appropriate timing, regulated as per market dynamics). Any spectrum authority's responsibility includes protecting users from harmful interference. Therefore spectrum authorities should gradually delegate the responsibility of apportioning spectrum to the Market. In order to consolidate amongst those users who value the spectrum most, spectrum trading should be permitted soon to the extent of changing ownership of spectrum rights originally assigned by the spectrum authorities spectrum trading. This will help achieve better spectral efficiencies.

25. Who all should be permitted to trade the spectrum?

All UAS / CMTS Licence holders and Government / PSU holders of spectrum.

26. Should the original allottee who has failed to fulfill "Roll out obligations" be allowed to do spectrum trading?

Yes, the condition of fulfillment of Rollout Obligation should devolve on the new acquirer.

27. Should transfer charges be levied in case of spectrum trading?

As stated in reply to Q 22, the spectrum transfer should apply in all cases whether spectrum is transferred / acquired through Merger or trading or sharing.

28. What should be the parameters and methodology to determine first time spectrum transfer charges payable to Government for trading of the spectrum? How should these charges be determined year after year?

The Authority may kindly consider the recommendation of the Second Committee to address this issue. The salient features are, as follows: -

a) The Second Committee has already recommended transfer charges that may be payable on a service area wise basis for M&A, trading or sharing of spectrum. The methodology, assumptions and parameters taken into account by the Committee to arrive at its recommendations are detailed in Annexure A5 of the Report.

b) The Second Committee has further recommended that :

- Transfer charges applied for sale/merger/sharing of spectrum should be set at a level that does not discourage consolidation.
- In order to activate the market at the earliest, the transfer / merger charge should be discounted by 20 % for the 1st year from the date of announcement of policy.

- The transfer / merger charge may be revised by the licensor annually based on price discovery from auctions and other similar inputs.

29. Should such capping be limited to 2G spectrum only or consider other bands of spectrum also? Give your suggestions with justification.

As opined by us in our response to Q 10, the cap should be applied on all spectrum bands together. In response to one of the questions, we have suggested that spectrum holdings with the Government / Public Sector Bodies should also be subjected to market forces. As on date, Government / Public Sector Bodies have spectrum in all possible bands, which can be re-farmed for commercial use. Since, market is expected to see the release of spectrum by the holders in other bands as well, therefore the cap should be applied on all the spectrum bands together. The limit of ±25MHz can be reviewed by the Government periodically to ensure, no scope of spectrum hoarding.

30. Should size of minimum tradable block of spectrum be defined or left to the market forces?

Yes, it should be left to the market forces. When blocks of spectrum are traded, buyers while insure that do not buy spectrum in blocks so small that they cannot be efficiently utilized.

31. Should the cost of spectrum trading be more than the spectrum assignment cost?

We have not been able to understand the context and the meaning of this Question and hence are unable to reply to it.

CHAPTER 2.

Spectrum sharing

32. Should Spectrum sharing be allowed? If yes, what should be the regulatory framework for allowing spectrum sharing among the service providers?

AND

33. What should be criteria to permit spectrum sharing?

Yes, spectrum sharing should be allowed. As regards regulatory framework, we note that May 2009, Dot Committee report lists out broad principles and framework for spectrum sharing such as: -

- Uniform annual spectrum charge regime for all bands allocated.
- Entire spectrum holding should be shared between/ amongst the operators in a service area.
- Retention of sharing charges only to the extent leviable for the actual period (rounded off to the full year) of the sharing on prorate basis and refund of the difference.
- In case of sharing, each licensee has the benefit of aggregate shared spectrum. For the purpose of assessing total 2G spectrum holding of UAS / CMTS licencee, total shared spectrum will be counted in the hand each licencee.
- In case where non of the Licencees have fulfilled the rollout obligations, the penalty will be applicable on each Licencees; where as if one of them has fulfilled the rollout obligations, there will be no further penalties on any of the Licencees sharing the spectrum.
- Wireless Adviser to monitor the compliance with the various technical conditions of the spectrum licence.

34. Should spectrum sharing charges be regulated? If yes then what parameters should be considered to derive spectrum sharing charges? Should such charges be prescribed per MHz or for total allocated spectrum to the entity in LSA?

The answer to this question is dependent upon the underlying fee structure. In general spectrum fee should be such that their collections do not require the establishment of barriers or constraints to spectrum sharing.

35. Should there be any preconditions that rollout obligation be fulfilled by one or both service provider before allowing the sharing of spectrum?

We believe that fulfillment of Rollout obligation should not be made a pre-condition for sharing of spectrum

36. In case of spectrum sharing, who will have the rollout obligations? Giver or receiver?

As answered in Point 33.

CHAPTER 2.

PERPETUITY OF LICENSES

37. Should there be a time limit on licence or should it be perpetual?

DoT cannot perpetually delegate powers through a licence to any entity, and therefore all licences should continue to be of 20 years validity period. In case DoT decides to continue with start-up spectrum linked licences, renewal should be based on a consideration relating to efficient utilization, re-farming for in-band use, etc. However, if our proposal of Unified Licence delinked from spectrum is accepted, renewal should not normally be denied, except in the rarest of circumstances.

38. What should be the validity period of assigned spectrum in case it is delinked from the licence? 20 years, as it exists, or any other period

All currently assigned spectrum is linked with the existing licences, and therefore its expiry date should be the same as that of the licence. All purchases, henceforth, obtained through auction should have validity period of 15 years.

The phenomenal demands of data & broadband services are pushing the technology frontiers much harder and therefore even a 15 years timeframe for a particular technology is excessive. More over, currently, Government is liberalizing the spectrum policy to the extent of developing the spectrum market for achieving consolidation amongst its users.

39. What should be the validity period of spectrum if spectrum is allocated for a different technology under the same license midway during the life of the license?

Since the spectrum was issued under a linked regime, its validity should be co-terminus with the licence.

40. If the spectrum assignment is for a defined period, then for what period and at what price should the extension of assigned spectrum be done?

Automatic extension of spectrum validity is not advisable. On expiry of validity (15 years as mentioned in the answer to question 38), there should be an opportunity with the Government to review the technology status and take a view to re-farm/ put it to an auction process.

41. If the spectrum assignment is for a defined period, then after the expiry of the period should the same holder/licensee be given the first priority?

Following process is suggested -

- Three years before expiry, DoT should notify its intent to put up the spectrum to auction, and the terms and conditions therein.
- Any Unified Licence holder should be eligible to bid.
- If the current holder intends to retain the spectrum, he should win it through offering the highest bid. He should not be given the first priority/ right of first refusal.

- 3 years time period is sufficient to the current holder to work on re-engineering its network, purchasing/ sharing spectrum from the market place, and for notifying its customers appropriately.

CHAPTER 2.

UNIFORM LICENSE FEE

42. What are the advantages and disadvantages of a uniform license fee?

Non-uniform licence fee has now lost its relevance. It had been introduced in earlier telecom licences to incentivize private operators to enter the less profitable geographical areas and services. Now that the telecom industry has reached higher levels of maturity, the advantages of moving to a uniform licence fee, far outweigh any other consideration.

Apart from ease of administration, a uniform licence fee will eliminate the scope of illegal arbitrage across differing licence fee brackets.

43. Whether there should be a uniform License Fee across all telecom licenses and service areas including services covered under registrations?

Government has issued a number of licenses with license fees ranging from 6% to 10%. Non uniform license fee will hinder the spectrum liberalization regime and consequently the spectrum consolidation. Therefore there should be uniform license fee across all telecom licenses and service areas.

44. If introduced, what should be the rate of uniform License Fee?

Licence fees should not be a revenue generating device for the DoT, but be just adequate to meet the administrative cost. It should be less than 6%, based on a realistic evaluation of the USO component, going forward.

CHAPTER 3

Spectrum assignment

45. If the initial spectrum is de-linked from the licence, then what should be the method for subsequent assignment?

Through auction.

Market based approach will lead to efficient utilization of spectrum as this will allocate spectrum to operators who value it the most. Auction or free trading will thus help develop economically efficient markets, as at any time the spectrum will be valued depending upon the achievable spectral efficiencies and versatile spectrum usages.

46. If the initial spectrum continues to be linked with licence then is there any need to change from SLC based assignment?

In the interest of equity, we propose the following

Existing Licencees

- Licencees holding **2x4.4 MHz** of GSM spectrum should be allowed **another 2x1.8 MHz on reaching the relevant SLC**. Adequate spectrum should be **earmarked**, and set aside **for 5 years**, for such operators to **reach 2x6.2 MHz**. Beyond 2x6.2 MHz they should procure spectrum through market determined mechanisms.
- Those currently holding **more than 2x6.2 MHz** should **pay a one–time per MHz amount** proportionate to that determined in the forthcoming 3G auctions, as recommended by DoT's Second Committee.

We believe that in case spectrum available with the Government for release, as also the spectrum lying unused or in-efficiently used with the Government / Public Sector Bodies is brought to the market place through auction and trading in stages, shall achieve the purpose of Telecom market development as well as Fiscal returns to the Government in the minimum time frame.

New Licencees

- All new licencees should be issued under de-linked Unified Licence Regime, wherein any spectrum would be procured through market mechanisms.

47. In case a two-tier mechanism is adopted, then what should be the alternate method and the threshold beyond which it will be implemented?

Already answered in Q46 above.

48. Should the spectrum be assigned in tranches of 1 MHz for GSM technology? What is the optimum tranche for assignment?

Please refer to our reply to question 30. Beyond 2x6.2 MHz operators should procure through market determined mechanisms, and the trading lots should be left to market forces.

Since we have recommended that henceforth there should not be any spectrum linked with the Licences, and we as a policy intend to encourage consolidation instead of more operators, therefore Government should release through auction the available spare spectrum for 2G services (after reserving for meeting the requirement of existing operators of upto 2x6.2 MHz), in tranches of 2x1 MHz.

49. In case a market based mechanism (i.e. auction) is decided to be adopted, would there be the issue of level playing field amongst licensees who have different amount of spectrum holding? How should this be addressed?

Already answered in Q48 above.

50. In case continuation of SLC criteria is considered appropriate then, what should be the subscriber numbers for assignment of additional spectrum?

Not applicable.

51. In your opinion, what should be the method of assigning spectrum in bands other than 800, 900 and 1800 MHz for use other than commercial?

Henceforth, all releases of the spectrum, which can be commercially exploited, should be through open auction mechanism, with only exception that Government may allocate some spectrum for R&D purposes for a short-term fixed period linked with the outcome of specific R&D efforts.

CHAPTER 3

SPECTRUM PRICING

52. Should the service providers having spectrum above the committed threshold be charged a one time charge for the additional spectrum?

Yes. Please refer to in our answer to Q 7

53. In case it is decided to levy one time charge beyond a certain amount then what in your opinion should be the date from which the charge should be calculated and why?

From date of allocation of GSM spectrum beyond 2x6.2 MHz.

54. On what basis, this upfront charge be decided? Should it be benchmarked to the auction price of 3G spectrum or some other benchmark?

Yes. Please refer to our answer to Q 7

55. Should the annual spectrum charges be uniform irrespective of quantum of spectrum and technology?

If the Government agrees to allow spectrum trading, spectrum sharing and an open M&A regime, than there should be a case for moving to a uniform annual spectrum charge percentage. Varying spectrum charge creates arbitrage problems and making it flat will mitigate those issues in the context of trading / sharing / M&A. However, in the event that an open trading / sharing / M&A regime is not introduced there is no case for changing from present escalating spectrum charge regime.

56. Should there be regular review of spectrum charges? If so, at what interval and what should be the methodology?

Spectrum fee should have a stable regime. This would provide the comfort to buyers of spectrum through market forces that they can reasonably estimate their future costs on this account.

Since spectrum fee is expected to cover only the administrative costs which will be incurred in the management, control and enforcement of the general authorization scheme and of rights of use and of specific obligations which may include costs for international cooperation, harmonization and standardization, market analysis, monitoring compliance and other market control, as well as regulatory work involving preparation and enforcement of secondary legislation and administrative decisions, such as decisions on access and interconnection; therefore the spectrum fees in terms of percentage of AGR, once judicially fixed should continue to hold for the full spectrum period even if an operator acquires additional slots though market mechanism during the currency of original spectrum authorization. However, the escalating cost will get automatically covered by virtue of escalating revenues.

CHAPTER 3

STRUCTURE FOR SPECTRUM MANAGEMENT

57. What in your opinion is the desired structure for efficient management of spectrum?

A situation is emerging where the distinction between different infrastructure access methods is becoming less important, given that similar electronic communication services can be provided over a number of different platforms. Convergence, in infrastructure as well as services, digitalisation and technological advance, call for a new regulatory approach allowing more freedom for radio spectrum users including service and technology neutrality and trading of spectrum usage rights. This will support innovation and competition through the provision of new and better services.

A market-based, more flexible approach, to spectrum management facilitates easier and more rapid access for new spectrum users, resulting in new entrants and a more competitive market for electronic communications.

Radio spectrum is an essential input for electronic communications. Limiting competitors' access to radio spectrum can inhibit market players' ability to deliver services on end-user markets. New entry to the market may also become impossible. If large shares of spectrum are unused by their rights holders, the possibility to reorganize spectrum is also inhibited, postponing or rendering it impossible to prepare new bands for new services.

In the near to medium term, demand is likely to exceed supply in key bands. In prime spectrum, where demand will be high, avoiding distortion of competition will be imperative. The best remedy against spectrum-related competition problems is to make more spectrum available and apply least restrictive terms and with minimal conditions. When sufficient quantities of spectrum are available competition issues should diminish.

The structure for efficient management of spectrum in India should, in our opinion, be based on international best practices for spectrum management, with an accent in particular on the flexible and market based approach that is taken in the European countries.

To,

December 4, 2009

The Chairman
Telecom Regulatory Authority of India
Mahanagar Doorsanchar Bhawan,
Jawahar Lal Nehru Marg,
(Old Minto Road),
New Delhi – 110 002

Kind Attention: Shri Sudhir Gupta, Advisor [MN]

Subject: Additional submission on Consultation Paper on '*Overall Spectrum Management and review of license terms and conditions*'.

Dear Sir,

Further to the Authority's invitation to the various stakeholders to submit their final comments to the Consultation Paper on Overall Spectrum Management and Review of License Terms and Conditions, kindly find enclosed additional comments in, continuation of our earlier rejoinder of November 27, 2009 regarding the efficient use of spectrum from Unitech Wireless. The comments contained herein should be read in conjunction with the main submission made previously and do not in any way prejudice our claim to an additional 1,8MHz of spectrum when reaching the relevant subscriber numbers.

Unitech Wireless has already submitted a comprehensive document covering the various questions raised by the TRAI. However, the answers and suggestions given were based upon the information and situation prevailing at that time. As considerable developments have subsequently evolved, we feel that is prudent to highlight some pertinent matters to the Authority for their consideration. In light of this, and in recognition of the overall views raised during the Open House sessions, kindly find enclosed some further recommendations covering Chapter 2 on Spectrum Sharing.

In general, the regulatory framework should encourage effective and prudent use of scarce resources, in particular a finite resource such as spectrum. In light of this, the regulatory body should encourage and promote whatever method makes this possible. There are in general three methods for operators to increase the capacity of their network, namely through the pure addition of further spectrum thus achieving greater trunking efficiency, the construction of additional cell sites although no trunking efficiency is obtained, or through the collaborative method of "pooling" or sharing spectrum with other operators thus achieving the same results, namely a significant improvement of the spectrum and network efficiency.

The Indian market has been characterized by the allocation of very marginal spectrum blocks for their initial start up operations with the promise of additional 1,8MHz of spectrum if certain subscriber numbers were met. This practice has now been put in doubt, reducing the predictability of the Indian spectrum regime. The situation has further been compounded by the recent High Court cases relating to the eligibility for licenses and start up spectrum to an additional number of operators. This situation is creating significant unease among the operators, such as Unitech Wireless who have made the significant investments in networks and people, and is working hard to comply with the roll out obligations contained in their licenses. The ability of the DoT to allocate any further 2G spectrum in the near future

has by these two High Court rulings been put in doubt. The fact that some of the new operators have not even been given the start up spectrum blocks in various metros/circles/districts makes the situation even more pressing. We would like to emphasize that the start up spectrum of 2x4.4MHz is sub-optimal. The operators with start up spectrum only should, upon reaching the relevant subscriber linked criteria, be allocated 2x1.8 MHz so as to have 2x 6.2 MHz spectrum, as per the current policy regime.

However, taking due account of this situation, there are several methods whereby the regulatory body should actively promote a much more efficient and economic use of the already fragmented spectrum allocations, where the most logical decision would be to permit spectrum sharing/pooling among the various operators. This will immediately generate a much more efficient and beneficial situation for all Indian operators. Efficient use must be the number one priority for the regulatory body, and the immediate introduction of spectrum sharing will go a long way to ease some of the significant capex issues which are faced by all operators and will give all parties a breathing space until the availability of further 2G spectrum has been resolved.

We must emphasize that our opinion is that there should be no further fees to be paid by operators who on a voluntary basis makes the attempt of utilizing the allocated scarce resources in an optimum manner. On the contrary, such practices should be promoted and rewarded as it generates a win/win situation among all the stakeholders, ranging from consumers to operators to the government. The present prohibition on spectrum sharing, and indeed voluntary MVNO arrangements are in effect aggravating an already very tight spectrum situation for all parties and are having a direct impact on customer quality, reliability and at the end the ability to stimulate a healthy and sustainable competitive environment. Not only are the operators deprived of optimizing the use of the allocated natural resources, the Government is deprived of the multiplier effect on the revenues that would result from a flexible and optimizing spectrum policy.

Taking due account of that, Government did permit intra circle roaming arrangements, which in effect are a form of spectrum sharing without the added gains achieved by spectrum sharing/pooling, we would encourage the authorities to immediately permit both sharing and voluntary MVNO arrangements. We would further add that the issue of "windfall taxes/levies" should be addressed through different processes and not be used as a barrier to a speedy implementation of spectrum sharing.

One of the important criteria is that both parties to such a sharing arrangement must have full rights to their portion of the shared spectrum and, ideally, both parties should be serving customers through this common resource.

One further comment which we would like to raise is that the DoT should urgently examine the actual spectrum distribution as the re-arrangement into continuous blocks of spectrum could further improve the situation to the benefit of all parties.

In relation to our Country's specific situation whereby spectrum in general is in extremely short supply, and in areas where the available spectrum have been allocated to a few operators and where others are waiting for spectrum release, we would propose that the regulatory body carefully examine the possibility of mandating MVNO arrangements at cost oriented prices for such operators waiting to be allocated 2G spectrum. One of these areas is New Delhi, which for any operator

will be of extreme importance to cover, and to be able to build distribution and brand structures to service their customers. Intra or inter circle roaming arrangements do not work in such instances as any serious operator would endeavor to build distribution channels and brand loyalty through "on the ground" presence.

We would therefore urge TRAI to focus on spectrum usage optimization as a first priority and ensure that this is the cornerstone of any spectrum policy even if spectrum is in good supply. Further, the removal of artificial barriers through prohibitions or excessive fees should be seriously considered and we would again argue that spectrum sharing/pooling and voluntary MVNO arrangements should not be difficult to implement and would be a very good step towards achieving optimum consumer welfare for the Indian economy.

Yours faithfully,
for **Unitech Wireless (Tamilnadu) Private Limited**

(Vikram Chona)
Head – Regulatory Operations