



Cellular Operators Association of India

RSM/COAI/020
January 31, 2012

The Telecom Regulatory Authority of India
Mahanagar Door Sanchar Bhawan
Jawahar Lal Nehru Marg (Old Minto Road)
New Delhi-110002

Dear Sirs,

Sub: TRAI Consultation Paper on Allocation of Spectrum Resources for Residential and Enterprise Intra-telecommunication Requirements/ cordless telecommunications system (CTS)

This is with reference to the TRAI Consultation Paper No. 09/2011 dated December 26, 2011 on 'Allocation of Spectrum Resources for Residential and Enterprise Intra-telecommunication Requirements/ cordless telecommunications system (CTS)'

In this regard please find enclosed our response for your kind perusal.

We hope that our views and submissions will merit the kind consideration and support of the Authority.

Kind regards,

Sincerely yours,

Rajan S. Mathews
Director General

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COAI Response to TRAI Consultation Paper on Allocation of Spectrum Resources for Residential and Enterprise Intra-telecommunication Requirements/ Cordless Telecommunications System (CTS)

ISSUE WISE SUBMISSIONS

Q1. Whether the current allocation of spectrum for CTS is sufficient to meet the requirements? If not, then how to meet the demand of cordless telephony spectrum requirements?

- a. **Yes, the current allocation of spectrum is sufficient for CTS.** Any or all of the services that are felt to be provided by CTS are already being provided by existing licensed UASL/ CMTS. The mobile solutions are preferred over cordless due to much better services. Most of the DECT applications are well covered by 2G/3G/4G mobile radio rather than CTS.
- b. DECT being a single niche technology, and basically voice based (comparable to 2G), the 'mobile' can offer the full range of 3G/4G services and is preferred.
- c. ETSI/Europe has observed that knowledge on DECT in the industry has almost disappeared during the last years and interest has been lacking in many countries. The relevance of DECT has been getting lost in Europe too (market is small) and hence technological advancements have been largely restricted.
- d. It is pertinent to note that spectrum is a scarce resource. Allocating any additional spectrum for the purposes of a single niche technology would be entirely inconsistent with the basic licensing structure in India, and would be a highly inefficient use of valuable spectrum. It is also likely to lead to disputes and struggles to keep the licensee restricted to their defined technology – which will be extremely difficult to do given rapid technological development.

Q2. In view of the availability of cellular mobile services in the country and possibility of Fixed Mobile Convergence (FMC), is there any need to have DECT Phones?

- a. No, we do not feel the need of DECT phones in the country as mobile is serving the purpose better and is being largely preferred by the users. It is critical to note that any or all of the services that are felt to be provided by the specific technology of DECT are already being provided by existing licensed UASL/ CMTS.
- b. In particular, mobile telephony, which started more than 15 years ago in India, has almost revolutionized the communication landscape in India and has permeated through various segments of everyday life of citizens. Needless to mention, the importance of mobile in everyone's life has undergone a paradigm shift.

- c. Moreover, mobile subscription in India is affordable, easier and faster to get. With low cost handsets and low value pre-paid, including micro-prepaid, there are virtually no barriers to entry. Ease of use, clubbed with various value added services which come with the mobile service, have led to mobile becoming the preferred device for communication.
- d. The mobile phone is also providing significant / tangible economic and social benefits to the common man and is also universally acknowledged. The Indian mobile industry offers the lowest tariffs in the world and hence it is much more affordable and convenient for a person, even inside an office building to simply pick up his/ her mobile phone and make a call rather than using any other means. Moreover, the handsets which are now deployed in the Indian market can provide increasingly sophisticated services – call forwarding, call conferencing etc.
- e. With intensive commercial network rollouts in mobile communication all over the world, handset ecosystem has achieved the economies of scale which has made the purchase of a handset within the reach of people of all segments of society but given the limited usage of DECT technology it would be difficult for the parallel ecosystem of handsets to achieve the much required economies of scale. Furthermore from a user point of view, usage of one handset in all scenarios is preferred rather than different type of handsets for different scenarios.
- f. The evolved/indigenous version of DECT technology (CorDECT) still faces poor spectral efficiency issue. In a country like India, where spectrum is such a scarce and expensive resource, promotion of a technology offering a poor spectral efficiency should not be encouraged.
- g. DECT could find its application to provide large area coverage for limited local area mobility within a town/city. The cordless Terminal Mobility systems for city based mobility were launched in a no. of European countries, most notably Italy where the 'Fido' systems used DECT base stations to cover a number of Italian cities. The Fido system eventually failed and there is little evidence that the market for such systems still exist in Europe or anywhere else, given the ubiquitous nature of GSM /CDMA based mobile services coverage.
- h. In the initial phase of liberalization in the country, the challenge before the Government was to extend coverage of telephones in the country of large and remote geographical area since the landline was not able to cope and the tele-density was very low. Therefore, alternate solutions to the landline were desperately tried including wireless in the local loop. However, these challenges have been suitably met with the introduction of mobile telephony in the country.
- i. **There is, therefore, no need to have DECT Phones in view of the availability of cellular mobile services in the country and possibility of Fixed Mobile Convergence (FMC).**

Q3. Is there any requirement of allocating spectrum for digital CTS, in view of similar solutions being available in already de-licensed band 2.4 & 5.8 GHz?

- a. **No, there is no requirement of allocating spectrum for digital CTS.** As we have already stated above, allocating substantial portions of spectrum for the purposes of a single niche technology would be entirely inconsistent with the basic licensing structure in India, and would be highly an inefficient use of valuable spectrum.
- b. Unlicensed devices like Wi-Fi have been successful in providing short range services to residential consumers and enterprises. GSM/CDMA based 3G has outsmarted DECT for both voice and data. Hence, there is no requirement of allocating spectrum for Digital CTS.
- c. Furthermore, spectrum bands in 2.4 and 5.8 GHz have been de-licensed and the Wi-Fi technologies are serving the people with mass deployment. These technologies have become matured, proven and with passage of time offering benefits to the subscribers because of economies of scale and ease of deployment. At this point of time, the DECT technology doesn't offer anything comparable to Wi Fi.

Q4. Whether de-licensing of the spectrum for digital CTS applications will be the right path?

- a. With the advancement and widespread deployment of GSM and other cellular technologies, use of DECT for data services has lost its relevance with specific reference to India where there is a paucity of spectrum. This band therefore should not be de-licensed but utilized for IMT services on commercial basis.
- b. The use of CTS on an unlicensed basis would raise a host of issues regarding competitive distortions and losses to the exchequer since unlicensed services would be competing with, and substituting for licensed fixed and mobile services.
- c. The proposal of the Authority is to allow operation of communication services which are likely to be substitutable for licensed fixed and mobile services in unlicensed bands. This approach would be fraught with substantial implications given that services deployed over these spectrum bands are easily capable of being extended for mobility. The potential disruption of existing licensing norms, policies and established regulatory principles is therefore very significant. We sincerely submit that these need to be carefully and fully understood.
- d. This approach leaves a significant loophole to be exploited because the same service would then be provided by one set of operators at zero or no regulatory cost while another set would be hobbled by license fee and spectrum usage payments. This would create serious competitive distortions on relation to substitutable services.
- e. The Government has decided to auction all future spectrum for commercial uses. Spectrum for 3G and BWA has also been auctioned. We believe that once the decision has been taken to allocate spectrum transparently through an auction process in order to determine its correct underlying market value, it would be most incorrect to consider allocation of spectrum (and that too for a potentially substitutable service) for unlicensed use. Allocation of spectrum is best done through market based has also been recognized internationally. The practice by various regulators and by public demand is that all

spectrum must be priced and this price be declared publicly as a cost for a “natural resource” allocation. The same has also been recommended by the Committee headed by Mr. Ashok Chawla on Allocation of Natural Resources.

- f. It is extremely important that the very fundamentals of transparency of allocation of spectrum via auction and technology neutrality which are the bedrocks of the Indian telecom sector now should not be disturbed. Any ambiguity or change could create huge arbitrage opportunities which would be undesirable.
- g. **The de-licensing of spectrum and reserving spectrum for digital CTS applications will not be the right path** and would help only a handful of companies who are likely to misuse these as a facade for getting dedicated spectrum leading to becoming a service provider without going through the established process of licensing and compliance requirements.

Q5. Do you agree that the 1880-1900 or 1910-1920 MHz band (TDD Mode) be allocated for digital CTS applications? If yes, what should be the limits of emitted power (EIRP), power flux density (pfd), antenna gain etc.?

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Q6. Do you see any coexistence issues between existing cellular systems using adjacent band with low power CTS allocations in 1880-1900 or 1910-1920 MHz band?

- a. Allocating 10-20 MHz to a single niche technology (without any further advancements in the future) would be entirely inappropriate, especially when fixed and mobile operators are already providing substitutable services and will be able to increase data rates, QOS and sophistication of services with the introduction of 3G.
- b. Internationally, the 1900 MHz band has been identified for IMT and IMT-Advanced for public telecommunication services. The same has also been acknowledged by TRAI in its Consultation Paper on “IMT - Advanced Mobile Wireless Broadband Services” dated 19th Aug. 2011 as referred below:

“In Regions 1 and 3, the bands 1885-1980 MHz, 2010-2025 MHz and 2110-2170 MHz and in Region 2, the bands 1885-1980 MHz and 2110-2160 MHz may be used by high altitude platform stations as base stations to provide International Mobile Telecommunications-2000 (IMT-2000), in accordance with Resolution 221 (Rev.WRC-03). Their use by IMT-2000 applications using high altitude platform stations as base stations does not preclude the use of these bands by any station in the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-03).”

- c. From technical perspective, IMT band in 1900 MHz has favorable propagation condition and therefore it should be reserved for licensed services for pan India use and not wasted for short range unlicensed services. Considering the strategic value and importance of the 1900 MHz band, we recommend that band should be used for licensed IMT services and not for unlicensed DECT services.

- d. The spectrum allocations in 1880-1900 MHz band (TDD mode) for DECT in Europe have been normally regulated by limits on emitted power (EIRP), power flux density (pfd), antenna gain, etc. The maximum peak transmit power of residential and enterprise systems has been limited to 250 mW (24 dBm) both for base stations and handsets (total & not EIRP).
- e. However, the compatibility problems between DECT and DCS 1800 have continued to be studied since 1990's and ERC Reports 31, 100, 96, 146, 41 & 65 are relevant. ERC Report 31/June 1994 had summarized that the following interference mechanisms were identified as being the most problematic,
 - i. Blocking of DECT from DCS 1800_{base}
 - ii. DECT out-of-band emission interfering with DCS 1800_{mobile}
 - iii. Blocking of DCS 1800_{mobile} from DECT
- f. Indoor Cellular pico cell is basically problematic in relation to DECT. Further, ERC Report 65 indicates that interference from DECT to indoor MSs is a difficult scenario. The general conclusion on relevant interference scenarios, indicate potential interference due to DECT out-of-band emissions to cellular MS (GSM/UMTS) visiting a home or enterprise with a DECT system deployed.
- g. As regards the spectrum allocations in 1910-1920 MHz band for DECT systems, it is unproven for adjacency issues and is considered non-compatible for co-existence with IMT uplink (UL) at 1920-1980 MHz. It may interest that China, which had been deploying cordless PHS service in this band is phasing out/is closing down the cordless PHS services in the country (may use it for TD-LTE). The introduction of cordless in 1910-1920 MHz is not recommended.

Q7. Whether the de-licensing of either 1880-1900 MHz or 1910-1920 MHz band for low power CTS applications will result in loss of revenue to the government?

- a. **Yes, the de-licensing of either 1880-1900 MHz or 1910-1920 MHz band for low power CTS applications will definitely result in loss of revenue to the Government.** From Government's perspective, unlicensed operations would allow substantial revenues to be diverted from the licensed operators to unlicensed operators who would therefore substantially reduce the net revenues to the exchequer. While other spectrum bands are increasingly put up for auction and realizing substantial up-front fees, there is no justification for offering substantial spectrum for commercial services without upfront or on-going fees.
- b. As already stated above, de-licensing of this spectrum band for residential and enterprise applications would create a non-level playing field due to provision of similar services by one set of operators at zero or no regulatory cost whereas the licensed telecom service providers would be burdened with license fees, spectrum usage charges and other significant regulatory compliances.

- c. Moreover, the mobile operators in India currently pay between 6-10% of AGR as license fees and 2-6% of AGR as spectrum fees, plus substantial fees for microwave spectrum. DECT services would compete with the licensed fixed and mobile services, but on an unlicensed basis. DECT providers would therefore be given an unjustified cost advantages over mobile operators, thus placing the mobile operators who have invested heavily in network, coverage and a customer base exceeding 850 million at a serious disadvantage.

Q8. Will there be any potential security threat using CTS? If yes, how to address the same.

- a. **Yes, potential security threats may arise using CTS as unlicensed operations** would pose substantial concerns in relation to other aspects of the terms and conditions of the license regime. Hence, it would be difficult/ impossible to ensure that mandatory requirements like subscriber verification and lawful interception and monitoring are imposed on licensed telecom service providers if such services are offered on unlicensed band.

Q9. Amongst the various options of digital technologies available to meet the cordless telephony requirements, either spectrum allocation can be considered according to technology or the etiquettes/ specifications can be defined for the de-licensed spectrum band. What method of allocation of spectrum for digital CTS applications should be adopted?

- a. It is now an established licensing policy and enshrined concept in the NTP '99 and also in the draft NTP- 2011 that our telecom sector operates on a technology-neutral licensing regime.
- b. Any operator wishing to provide service that requires use of spectrum would have to be subject to the same rules and regulatory principles of spectrum allocation that have been currently defined and followed by the policy makers.
- c. Allocating substantial portions of spectrum for the purposes of a single niche technology would be entirely inconsistent with the principles of telecom licensing structure in India which is based on technology neutrality, and would thus result in an inefficient use of valuable spectrum.
- d. The IBS and DAS enhance overall coverage and capacity especially at locations where the potential for increase in data usage is evident. The IBS has the advantages of cost benefit due to enhanced network coverage and shared deployment. DAS design with Multi Operator and Multi Technology support for both indoor and outdoor sites delivers a better utilization of the overall infrastructure. All existing service providers are already deploying IBS to enhance network coverage and quality of service in urban areas. Therefore, the proposal of reserving the dedicated spectrum for DECT with the intention to enhance network coverage and quality of service in urban areas would be a waste of precious resource and out of context in the present telecom scenario.

- e. The services which are intended be offered using DECT technology are voice and data which can be fixed or with limited mobility. With regards the same, the provisions of limited mobility under UASL are quoted as below:

2.2 (c) (i) In respect of subscriber availing limited mobility facility, the mobility shall be restricted to the local area i.e. Short Distance Charging Area (SDCA) in which the subscriber is registered. While deploying such systems, the LICENSEE has to follow the SDCA based linked numbering plan in accordance with the National Numbering Plan of the respective SDCA within which the service is provided and it should not be possible to authenticate and work with the subscriber terminal equipment in SDCAs other than the one in which it is registered. Terminal of such subscriber in wireless access system can be registered in only one SDCA. Multiple registration or Temporary subscriber/ Subscription facilities in more than one SDCA using the same Subscriber terminal in wireless access systems is not permitted and the same Subscriber Terminal cannot be used to avail Limited Mobile facility in more than one SDCA. The system shall also be so engineered to ensure that hand over of subscriber does not take place from one SDCA to another SDCA under any circumstances, including handover of the calls through call forwarding beyond SDCA. The Licensee must ensure that the mobility in case of such limited mobile service/ facility remains restricted to SDCA.

2.2(c)(ii) The Licensee after migration to Unified Access Services License Regime will also offer limited mobility service for such customers who so desire

- f. The New Telecom Policy also envisages delinking the spectrum from the license under the proposed Unified licensing. Thus, any entity desiring to provide limited mobility may obtain Unified license which would be available on a nominal basis. The spectrum can then be made available to such desirous operators through market determined mechanism.
- g. It is therefore requested that the Authority should not seek to allocate spectrum bands on differential terms simply based on technology to be used because this has proven to be unsustainable in the past and will do so in the future. There can be no guarantee on the march of technology and thus providing spectrum for DECT services would lead to further disputes, delays and consequent disruptions in the sector, which is highly undesirable.