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SSTL/Reg/TRAI/1401/19
22/1/2014

Dr Rahul Khullar
Chairman,
Telecom Regulatory Authority of India
Mahanagar Doorsanchar Bhawan,
New Delhi

Subject: Counter comments: Consultation Paper on Reserve Price for Auction of Spectrum in the 800 MHz Band

Dear Sir,

Please find enclosed the SSTL's counter comments on consultation paper on reserve price for auction of spectrum in the 800 MHz band.

We hope that authority will consider our comments while formulating the guidelines on the mentioned subject.

Thanking you

Yours faithfully
For **Sistema Shyam TeleServices Limited**

Sunil Gupta
Associate Director

Copy to : 1. Sh. R K Arnold, Member
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Counter Comments: Consultation Paper on Reserve Price for Auction of Spectrum in the 800 MHz Band

1. Sistema Shyam Teleservice Ltd (SSTL) welcomes opportunity extended by the TRAI to give counter comments on responses received on TRAI's consultation paper on "Reserve Price for Auction of Spectrum in 800 MHz Band."
2. SSTL had submitted comments which are based on principle of ensuring level playing field, promoting competition, maximizing benefits for consumers and protecting government revenues. On the other hand GSM operators and COAI are suggesting an approach like parity in spectrum prices in 900 MHz and 800 MHz bands, creation of 880-890 MHz EGSM band etc which would stop spectrum supply and any possibility of growth for existing 800 MHz operators. Their suggestions if implemented would eliminate 800 MHz operators and reduce competition. Therefore, SSTL requests TRAI to reject GSM operator's suggestions and push a pro-consumer and pro-competition approach.
3. SSTL's counter comments on specific comments from COAI and GSM operators are given below:

(i) Reserve Price for 800 MHz should not be linked to Reserve Price for 900/1800 MHz Price based on technical efficiency

Most GSM operators have suggested that 900 MHz and 800 MHz are similar assets and the valuation arrived at for 900 MHz should be applied to 800 MHz for 3 metros and the same approach as was used for valuation of 900 MHz could be extended to other service areas.

SSTL Counter Comments

- LTE deployment in 800 MHz band is extremely limited compared to UMTS deployment in 900 MHz or LTE deployment in 1800 MHz spectrum bands. 1800 MHz and not 800 MHz is the mainstream spectrum band for LTE deployment globally and is greatly assisting international roaming. User device eco-system for LTE1800 has matured. Out of total 1,240 LTE user devices that have been announced, one third i.e. 412 devices are in 1800 MHz band. Thus LTE850 has poor eco system compared to 900/1800 MHz bands.
- There are very few smartphones available for LTE850 which mainly drive growth for any network. Access devices mainly available for LTE850 are dongles for which demand is continuously dwindling.
- There are only 3-4 LTE850 commercial deployments in countries like Korea which has no competition from 1800 MHz operators which is mainstream LTE band. In India LTE850 eco system would play major role in its success as it would have to compete with UMTS 900 MHz and LTE 1800 MHz in addition to LTE2300 MHz.

- 900/1800 MHz bands are contiguous spectrum bands but 800 MHz spectrum frequencies are non-contiguous in small holdings. The network efficiency gets significantly reduced when spectrum is non-contiguous spectrum. Getting 5 MHz of contiguous spectrum for LTE deployment in 800 MHz is difficult.
- There was no participation in 800 MHz in most circles which clearly indicates that reserve price set in the previous auction was high. Based on the responses in the auction of spectrum TRAI has significantly reduced reserve price for 900/1800 MHz bands and on the same basis, TRAI should reduce the reserve price of 800 MHz.
- Data revenue in 800 MHz is mainly generated mainly through dongles. However, dongle based growth would slowdown as consumers prefer to use their handsets as hot spots. This would significantly dent data revenues in 800 MHz band.
- CDMA services could not grow in the country as coverage and capacity combination in 800 MHz and 1900 MHz band was not provided to operators. Most GSM operators use 900/1800 MHz combination for coverage and capacity which gives them significant advantage over 800 MHz operators.
- 900 MHz, 1800 MHz and 2100 MHz bands are complimentary for GSM/UMTS services. Thus there is clear growth path available for 900/1800 MHz band operators. However, for 800 MHz there is no growth path available.
- Parity of 800 MHz with 900/1800 MHz would lead to a high reserve price and may result in spectrum remaining unsold. When spectrum is not sold, the Government Revenues would be impacted and important resource like spectrum would remain utilised
- Technical efficiency of 800 MHz spectrum in terms of propagation over 1800 MHz band for providing data services is not an important factor in valuation as as the throughput for data services decreases as the distance from the center of the cell increases.

Having regard to availability of fragmented frequencies in 800 MHz and poor LTE/CDMA ecosystem, the reserve price for 800 MHz should be less than 900/1800 MHz bands. , EGoM had recommended lower reserve price for 800 MHz spectrum and on the basis of its recommendations, Cabinet also approved lower price for 800 MHz band in January 2013. The reserve price for 800 MHz spectrum band was fixed at 0.65 times the reserve price for 1800 MHz spectrum band in the auction held in March, 2013. The ratio of reserve prices decided earlier is close to true valuation of 800 MHz and 1800 MHz spectrum bands and same may be considered while fixing reserve price for 800 MHz band.

(ii) UMTS standards and data capabilities are superior to EVDO



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COAI, Airtel and Vodafone have submitted that EVDO and UMTS technologies are comparable in terms of Data rates and in support they have submitted MTS advertisements

SSTL counter comments

- The claim of GSM operators that 3G(HSPA) and EVDO data capabilities are similar is baseless and misleading. The mainstream 3G-based standard in the UMTS family is the HSPA+ standard, which is commercially available since 2009 and offers 28 Mbit/s downstream and 22 Mbit/s upstream without MIMO, i.e. only with one antenna, and in 2011 accelerated up to 42 Mbit/s peak bit rate downstream using 2x2 MIMO. In theory speeds up to 672 Mbit/s is possible. On the other hand the fastest 3G-based standard in the CDMA2000 family is the EV-DO Rev. B, which is available since 2010 and offers 14.7 Mbit/s downstream with 3 carriers of 1.25 MHz. Thus, valuation of 800 MHz based on assumption that HSPA+ and EVDO are similar would be incorrect.

Comparison of Data capabilities

Common Name	Radio Tech	Downstream	Upstream	Notes
HSPA+	CDMA/FDD MIMO	21 42 84 672	5.8 11.5 22 168	HSPA+ is widely deployed. Revision 11 of the 3GPP states that HSPA+ is expected to have a throughput capacity of 672 Mbit/s.
EVDO Rel. 0 EVDO Rev.A EVDO Rev.B	CDMA/FDD	2.45 3.1 4.9 X N	0.15 1.8 1.8 X N	Rev B note: N is the number of 1.25 MHz carriers used. EV-DO is not designed for voice, and requires a fallback to 1xRTT when a voice call is placed or received.

- The existing frequency spots allocated to operators in 800 MHz band in many LSAs are separated by more than 10 MHz leading to inefficient usage even for EVDO services. Peak data rates that can be achieved with 3 carriers is 14.7 Mbit/s provided frequencies allocated are within 6 MHz. However, frequencies in most LSAs are spread across 20 MHz and it is not possible to achieve peak data rate of 14.7 MB/s. Carrier Aggregation beyond 6 MHz is not possible as per the existing algorithms & chipset available in the market. To use the entire spectrum, additional radio amplifiers need to be put in each base station. Radio amplifiers are the most expensive element of a base station and therefore disaggregated or non-contiguous spectrum allocated to Thus in 800 MHz even delivery of efficient EVDO services across all carriers is not possible.
- If 800 MHz was so efficient compared to 900 MHz or 1800 MHz bands, all other GSM operators who are migrating to LTE should have participated in previous 800 MHz band



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- 900 MHz is contiguous 5 MHz which generated much higher loading efficiency compared to fragmented frequencies allocated in 800 MHz band.

Thus peak throughputs given in MTS advertisements have no relevance to comparative valuation for 800 MHz and 900 MHz bands. Contiguous 5 MHz in 900 MHz is much more efficient for HSPA + deployment and has much higher capacity loading compared to fragmented 800 MHz band. Therefore, 800 MHz is of lower value compared to 900/1800 MHz bands.

II. Creation of 880-890 Mhz as EGSM band .

A number of operators led by COAI have supported creation of EGSM 880-890 MHz band by transferring the existing CDMA operators to 870-880 MHz band.

SSTL counter comments

- All GSM operators are suggesting creation EGSM bands which would only result in elimination of CDMA competition. It may be noted that 880-890 MHz is not a globally harmonized EGSM band. This band is being used for GSM services mainly in those countries where CDMA spectrum was lying idle. Any attempt to create 880-890 MHz as GSM band would be retrograde step as this band can be used more efficiently for LTE deployment provided frequencies are reassigned in contiguous band.