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Fwd: Consultation Paper No.06./2015

Sanjeev Banzal,Advisor TRAI <advmn@trai.gov.in> Mon, Dec 21, 2015 at 11:37 AM
To: vinod.kotwal@nic.in, fa@trai.gov.in, ramesh.al.trai@gmail.com, soniatrai@gmail.com

---------- Forwarded message ----------
From: Arvind Tiwary <arvind_t@sangennovate.com>
To: advmn@trai.gov.in
Cc: Jaipal Singh Tomar <trai.jams@gmail.com>
Date: Mon, 21 Dec 2015 07:56:03 +0530
Subject: Consultation Paper No.06./2015

Re Valuation and Reserve Price of Spectrum in 700, 800, 900, 1800, 2100, 2300 and 2500 MHz Bands

We IESA TiE IoT Forum would like to submit our comments to this consultation paper. TiE is working with IESA under a MoU between TiE and IESA . Ind 1992 in Silicon Valley by a group of 17 count

About India Electronics & Semiconductor Association (IESA)

IESA is the premier trade body representing the Indian Electronic System Design and Manufacturing ESDM industry and has represented it since 2005. It has over 230 members - both domestic and multinational enterprises. IESA is committed towards building global awareness for the Indian ESDM industry and supporting its growth through focused initiatives in developing the ecosystem. This is through publishing credible data, networking events and alliances with other international associations. IESA works closely with the Government as a knowledge partner on the sector, both at the centre and at the state level. For more details on IESA, visit www.iesaonline.org

About The Indus Entrepreneurs (TiE)

The Indus Entrepreneurs (TiE), was founded in 1992 in Silicon Valley by a group of successful entrepreneurs, corporate executives, and senior professionals with roots in the Indus region. There are currently 11,000 members, including over 2,500 charter members in 60 chapters across 17 countries. TiE's MISSION is to foster entrepreneurship globally through mentoring, networking, and education. Dedicated to the virtuous cycle of wealth creation and giving back to the community, TiE's focus is on generating and nurturing our next generation of entrepreneurs. TiE endeavors to cultivate and nurture the ecosystems of entrepreneurship and free-market economics everywhere, as it sees this to be the single most powerful instrument of prosperity. The Bangalore chapter was started in 1999 and is the fourth largest in the TiE system. See http://bangalore.tie.org/

The IoT Forum has been set up to promote the IoT ecosystem in India and we are tracking 280+ startups in this space. See IotForIndia.org . We hope disruptive technology that can reduce costs of smart city rollout from 300K USD/Km to 30-50K USD/KM is given a chance and not just current incumbents using dated technology.

As you may be aware the TiE IOT Forum and IESA workgroup on standards and interoperability identified lack of spectrum as a major stumbling block for smart grid and smart city roll out in India.**Earlier in June we presented a position paper around Spectrum for IoT and after much discussion among stakeholders finalized this in September.** We submitted this position paper to the Wireless Planning Coordination(WPC) wing of the DoT (the body managing the national frequency allocation plan). The paper(WPC Spectrum V3) is attached. The New Technology Group (NTG) is developing a national M2M roadmap and has accepted our proposal and the Telecommunication Engineering Centre (TEC) Power Workgroup in its November 2015 final report (TEC-TR-S&D-M2M-002-02) has recommended 10 -12 Mhz in the 800 Mhz band be allocated for IoT. We attach that report (tec-power-final)

We actually need 10-12 Mhz in 800, 700 and 400 Mhz band each over the next 25 years. the 12 Mhz recommended by TEC in the 800 Mhz band is a good beginning.

Q1. Whether the entire spectrum available with DoT in the 800 MHz band be put for auction? Justify your answer.

This is a very bad idea. Currently 2Mhz around 865Mhz is available for IoT/M2M. This is grossly insufficient as noted by TEC .

Section 3.9 Page 20 (PDF 39) of the TEC report

From the quantitative analysis shown in Section 3.3, it is noted that the existing 2 MHz (865-867 MHz) would not be sufficient to cater to the billions of M2M/IoT/IoE devices that would be deployed in the near future. Based on the calculations in the above Sections, it is recommended to allocate a frequency band of 10-12 MHz for catering to these devices. In addition, the permissible channel spacing may be increased to 400 KHz (maximum) for reducing adjacent channel interference and to achieve higher data rates.

Q2. How can the spectrum in the 800 MHz band, which is not proposed to be auctioned due to non-availability of inter-operator guard band, be utilised?

We need a contiguous 12 Mhz allocation as different protocols use different schemes. For example WiSun alliance proposed to be used by SmartGrid Operators is based on IEEE 802.15.4 and has different channels compared to LoRa being set up by some operators and 802.11ah and Weightless-N that are also contenders in this space. There is rapid innovation in the sub gigahertz Low Power Wide Area (LPWA) field and cellular operators are moving quickly to compete (4G and 5G will be too late) and are piloting NB-IoT (Narrow Band IoT) in Germany and expect to release in March 2016. The stakes are very high about 20 Billion USD and speed is too rapid for regulators to be on top. It is vital that regulators like TRAI facilitate innovation and quantum reduction in cost of SmartCities rollout rather then a roadblock. Parcelling smnall bits like 1.25 or 2 Mhz here and 1 Mhz there is a Non starter.

Section 4.2 Page 21 (PDF 32) of the TEC report

Frequency band selection

As per the National Frequency Allocation Plan (NFAP) 2011, over 35 MHz have been provisioned for Public Mobile Radio Trunked Systems (PMRTS) and Captive Mobile Radio Trunked Systems (CMRTS) as shown in Table 9. There may be a possibility of freeing spectrum after the examination of the current usage of PRMTS and CMRTS. *Freed spectrum can be earmarked to meet the demand of M2M/IoT/IoE communications. It will be preferable to have the spectrum close to the current delicensed band of 865-867 MHz.*

Q3. What should be the block size in the 700 MHz band?

For the unlicensed IoT we need a contiguous 10-12Mhz as a minimum,

Q6. Considering the fact that one more sub-1 GHz band (i.e. 700 MHz band) is being put to auction, is there a need to modify the provisions of spectrum cap within a band?

For the unlicensed IoT we need a contiguous 10-12 Mhz in 400,700,800 Mhz bands each .

Q7. Is there any need to specify a separate spectrum cap exclusively for the spectrum in 700 MHz band?

For the unlicensed IoT we need a contiguous 10-12Mhz as a minimum,

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SangEnnovate The (Multiple) Disciplines of Innovation. Biz IT Architecture

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SoundBites from IoTNext2015

Smart City

Three key themes in developing Smart City solutions – Need for Platformization, Inclusion of society and citizens and mobilizing the government machine

Healthcare

We are entering an age where every Healthcare entity needs to become a Software and Analytics organization
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Agriculture

Two game-changers for agriculture in India are IoT and agricultural producer organisations

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2 attachments

WPC Spectrum V3.pdf
462K

tec power final.pdf
1172K
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Akshantula Ramesh <ramesh.al.trai@gmail.com>

Fwd: Valuation and Reserve Price of Spectrum in 700, 800, 900, 1800, 2100, 2300 and 2500 MHz Bands

1 message

Sanjeev Banzal,Advisor TRAI <advmn@trai.gov.in> Mon, Dec 21, 2015 at 11:35 AM
To: vinod.kotwal@nic.in, fa@trai.gov.in, ramesh.al.trai@gmail.com, soniatrai@gmail.com

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From: Arvind Tiwary <arvind_t@sangennovate.com>
To: advmn@trai.gov.in
Cc: trai.jams@gmail.com
Date: Fri, 18 Dec 2015 17:31:06 +0530
Subject: Valuation and Reserve Price of Spectrum in 700, 800, 900, 1800, 2100, 2300 and 2500 MHz Bands
We wish to add comments to the consultation underway. Since we work with startups and are not an operator as such we have not participated in the regulatory process. We are sending our comments by email and will be happy to explain our observations

As you may be aware the TiE IOT Forum and IESA workgroup on standards and interoperability identified lack of spectrum as a major stumbling block for smart grid and smart city roll out in India

We submitted a position paper to the Wireless Planning Coordination(WPC) wing of the DoT (the body managing the national frequency allocation plan). The New Technology Group (NTG) is developing a national M2M roadmap and has accepted our proposal and the Telecommunication Engineering Centre (TEC) Power Workgroup in its November 2015 final report (TEC-TR-S&D-M2M-002-02) has recommended 10 -12 Mhz in the 800 Mhz band be allocated for IoT.

We have a website IotForIndia.org exclusively for IoT and are treacking over 280 startups. We hope disruptive technology that can reduce costs of smart city rollout from 300K USD/Km to 30-50K USD/KM is given a chance and not just current incumbents using dated technology

TiE Bangalore http://bangalore.tie.org/
IESA http://www.iesaonline.org/

A copy of the report can be found at *http://tec.gov.in/pdf/M2M/tec%20**power**%20final.pdf* and is enclosed.

Relevant sections are

Executive Summary Page iii(PDF 11)

Furthermore, a study of additional spectrum requirement for low power RF devices for M2M/IoT/IoE/Smart Cities applications has been undertaken. It has been concluded that the existing de-licensed frequency band of 865-867 MHz would not be sufficient to cater to the billions of connected/smart devices that would be deployed in the near future. After undergoing a comprehensive quantitative analysis, *it has been recommended to allocate a band of 10-12 MHz for low power RF devices.*

Section 3.7 Page 12 (PDF 23)

If a reactive approach is adopted and additional spectrum is allocated after the network gets

congested, a number of large scale projects may not be successful as interoperability issues will start showing up. This is because the installed devices may not have the capability to operate in the additional spectrum that would be allocated.
Hence, rather than taking a reactive approach by allocating additional spectrum 'as and when required', a proactive approach is needed by acting in advance and allocating an optimum amount of de-licensed spectrum.

Section 3.9 Page 20 (PDF 39)

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We request the DoT to operationalize this recommendation as soon as possible.

Additionally cellular operators have been requesting additional spectrum and TRAI has a consultation underway to value and auction additional spectrum in the **700, 800, 900, 1800, 2100, 2300 and 2500 MHz Bands. We request that 400,700 and 800 Mhz bands be given special consideration as M2M and IoT rollouts need 22Mhz bandwidth in these regions over the next 20 years. Preemptive licensing of this spectrum to cellular will gravely hurt the Smart City rollouts . Auctioning the 902-928 Mhz band (used in USA for IoT) may be a acceptable use of additional spectrum.**

Attached the TiE IESA position paper and the TEC report.

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