19-01-2017
Rasipuram

To,
Shri Sanjeev Banzal,
Advisor (Networks, Spectrum and Licensing),
Telecom Regulatory Authority of India
Mahanagar Door Sanchar Bhawan,
Jawahar Lal Nehru Marg,
New Delhi-110002

Subject: Comments on TRAI Consultation Paper - 'Spectrum, Roaming and QoS related requirements in Machine-to-Machine (M2M) Communications'

Dear Sir,
Please find my responses below on this consultation paper.

Q1.) What should be the framework for introduction of M2M Service providers in the sector? Should it be through amendment in the existing licenses of access service/ISP license and/or licensing authorization in the existing Unified License and UL (VNO) license or it should be kept under OSP Category registration? Please provide rationale to your response.
Comment: Better to keep it under OSP Category registration.
Rationale:
Business model for M2M services will be entirely different than the regular telecom service (PSTN, Mobile Leased Circuit etc..). Changing the mindset of telecom operators for providing the M2M service and adapt new business model is very difficult. If it is OSP, they can get the services from multiple service providers (e.g., BSNL, Airtel, Vodafone etc...) and provide the M2M services in the remote areas as well using the connectivity provided by any of these operators in that particular location.

Q2. In case a licensing framework for MSP is proposed, what should be the Entry Fee, Performance Bank Guarantee (if any) or Financial Bank Guarantee etc? Please provide detailed justification
Comment: Not Applicable as the proposal is to keep this under OSP category.

Q3. Do you propose any other regulatory framework for M2M other than the options mentioned above? If yes, provide detailed input on your proposal.
Comment: No.

Q4. In your opinion what should be the quantum of spectrum required to meet the M2M communications requirement, keeping a horizon of 10-15 years? Please justify your answer.
Comment: No comments.

Q5. Which spectrum bands are more suitable for M2M communication in India including those from the table 2.3 above? Which of these bands can be made delicensed?
Comment: No comments.

Q6. Can a portion of 10 MHz centre gap between uplink and down link of the 700 MHz band (FDD) be used for M2M communications as delicensed band for short range applications with some defined parameters? If so, what quantum? Justify your answer with technical feasibility, keeping in mind the interference issues.
Comment: No comments.

Q7. In your opinion should national roaming for M2M/IoT devices be free?
(a) If yes, what could be its possible implications?
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(b) If no, what should be the ceiling tariffs for national roaming for M2M communication?
Comment: In my opinion, national roaming for M2M/IoT devices should be free.
Reason is that, already national roaming is free for mobile services.
Having free roaming would reduce the capital & operational expenditures.
Also this would ease the MSPs to provide the services without any boundaries inside India.

Q8. In case of M2M devices, should;
(a) roaming on permanent basis be allowed for foreign SIM/eUICC; or
(b) Only domestic manufactured SIM/eUICC be allowed? and/or
(c) there be a timeline/lifecycle of foreign SIMs to be converted into Indian SIMs/eUICC?
(d) any other option is available?
Please explain implications and issues involved in all the above scenarios.
Comment: My preference is to have a timeline/lifecycle of foreign SIMs to be converted into Indian SIMs/eUICC. Most likely physical SIMs will be gradually migrated/converted to eUICC/eSIMs(embedded SIMs) within next couple of years. It is better to enforce eUICC/eSIMs as part of this initiative.

Q9. In case permanent roaming of M2M devices having inbuilt foreign SIM is allowed, should the international roaming charges be defined by the Regulator or it should be left to the mutual agreement between the roaming partners?
Comment: Better not to have permanent roaming due to various reasons (e.g., security, revenue loss, overheads on interconnect settlement etc..).

Q10. What should be the International roaming policy for machines which can communicate in the M2M ecosystem? Provide detailed answer giving justifications.
Comment: As M2M devices requires connectivity to connect back to the M2M platform in the home location, it can be done via Internet once these devices are connected through local internet.
If the connectivity needs to be enabled on its own using the local operator network, then better to follow the Remote SIM Provisioning (RSP) architecture.

Q11. In order to provide operational and roaming flexibility to MSPs, would it be feasible to allocate separate MNCs to MSPs? What could be the pros and cons of such arrangement?
Comment: Better not to allocate separate MNCs to MSPs.
Pros:
MSPs can get into better deal with various operators based on the availability of the connectivity provided by MNO in that region.
Easy to operate and manage, less complexity.

Q12. Will the existing measures taken for security of networks and data be adequate for security in M2M context too? Please suggest additional measures, if any, for security of networks and data for M2M communication.
Comment: Security/Trust is very important factor for M2M Communications. This would require additional measures to promote M2M services in all the relevant fields (e.g., Health, Security Monitoring etc..)

Q13. (a) How should the M2M Service providers ensure protection of consumer interest and data privacy of the consumer? Can the issue be dealt in the framework of existing laws?
A. May be need to enhance cyber security laws to support M2M communication.
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(b) If not, what changes are proposed in Information Technology Act. 2000 and relevant license conditions to protect the security and privacy of an individual? Please comment with justification.
Comment: No Comments.

Q14. Is there a need to define different types of SLAs at point of interconnects at various layers of Heterogeneous Networks (HetNets)? What parameters must be considered for defining such SLAs? Please give your comments with justifications.
Comment: No Comments.

Q15. What should be the distributed optimal duty cycle to optimise the energy efficiency, end-to-end delay and transmission reliability in a M2M network?
Comment: No Comments.

Q16. Please give your comments on any related matter not covered in this consultation paper.
C**omment:** No Comments.

Thanking you,

Yours Faithfully,
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