tsdsi Telecommunications Standards Development Society, India

TSDSI Inputs to the TRAI Consultation Paper on "Spectrum, Roaming and QoS related requirements in Machine-to-Machine (M2M) Communications"

Compiled/Submitted by

TSDSI Secretariat

Document No: TSDSI_TR_8004_TRAI_CP_V1.0.0_20170103

Document Version: 1.0.0

Submission Date: January 10, 2017

TSDSI Contact:

Babu Narayanan vicechairman@tsdsi.org

Jayeeta Saha, jayeeta@tsdsi.org

Bindoo Srivastava, bindoo@tsdsi.org

TRAI Consultation Paper on "Spectrum, Roaming and QoS related requirements in Machine-to-Machine (M2M) Communications" has brought out the significance of the area of Machine to Machine communications in India – for the governments, citizens, end-users and businesses. TSDSI, a national SDO for Telecom, also recognizes Machine to Machine communications as an important new area which has a huge potential to bring substantial social and economic benefits. TSDSI has a dedicated Working Group on M2M as part of the Study Group Services trying to address the standardization requirements of M2M networks and systems.

Following are the responses from TSDSI on the various issues raised by TRAI in the 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.

Ans 1) Since TSDSI is a standards development organization, the answer to this question is beyond the scope of TSDSI.

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.

Ans 2) Since TSDSI is a standards development organization, the answer to this question is beyond the scope of TSDSI.

Q3. Do you propose any other regulatory framework for M2M other than the options mentioned above? If yes, provide detailed input on your proposal.

Ans 3) TSDSI is primarily involved in standardization activities. However, regulator may like to look into vertical specific regulations to identify best practices for cross cutting aspects in M2M space.

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.

Ans 4) Spectrum needs of various telecommunication requirements are being studied in TSDSI. A more detailed study may be required of the M2M applications and the technologies to provide a view on the above question. However TSDSI feels that some applications may need dedicated bandwidth while it may be early to restrict or notify bands for non-critical applications.

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?

Ans 5) The response on spectrum bands to be used in India shall be dependent on the study as mentioned in Ans 4.

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.

Ans 6) The response shall be dependent on the study as in Ans 4.

Q7. In your opinion should national roaming for M2M/IoT devices be free?
(a) If yes, what could be its possible implications?
(b) If no, what should be the ceiling tariffs for national roaming for M2M communication?

Ans 7a) Answer to the above question is not in the scope of TSDSI. However, we feel that a free national roaming structure will provide a more seamless service for critical service sectors.

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.

Ans 8) We recommend option 8 c) there be a timeline/lifecycle of foreign SIMs to be converted into Indian SIMs/eUICC. There should be a timeline/lifecycle of foreign SIMs to be converted into Indian SIMs/eUICC.

(a) The data will get outside India
(b) There shall be restrictions on the products that are coming from outside for usage in the M2M scenario.
(c) This is a suitable option to retain the data generated in M2M devices in India

Note:

- The embedded SIM (also called eSIM or eUICC) is a new secure element designed to remotely manage multiple mobile network operator subscriptions and be compliant with GSMA specifications
- Available in various form factors, either plugged-in or soldered, the eSIM is easy to integrate in any kind of device.

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?

Ans 9) Answer to this question is beyond the scope of TSDSI.

Q10. What should be the International roaming policy for machines which can communicate in the M2M ecosystem? Provide detailed answer giving justifications.

Ans 10) We recommend appropriate International roaming policy for machines which can communicate in the M2M ecosystem. This however requires further study and analysis.

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?

Ans 11) With Mobile Network Code to MSP, one will be able to have a differential treatment, but it would be a complex system.

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.

Ans 12) For M2M communication over un-trusted public network, a secure tunnel needs to be created between the M2M gateways to the core infrastructure. This will require a firewall capability at the gateway as well as the core. The M2M devices should be tested and certified by agencies like TEC. Other methods like SIM binding with hardware ID etc., should be in place. On the data security part, M2M service provider should undergo a VAPT certification from listed audit companies and also get regular audit done to ensure that the customer data does not leak from their possession.

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?
(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.

Ans 13) This requires further study.

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.

Ans 14) Yes, there is need to define SLAs at point of interconnects, however the definitions of parameters for SLAs need further study.

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?

The contemporary reports from NGMN, 5G Americas and like organizations have revealed that the various parameters of determining network performance include optimal duty cycle for energy efficiency, end-to-end delays and, transmission reliability. However, the evolution of M2M space is in the early phases of inception and it requires further study to determine the specific parameters (with respective values) that can be used for deployment purpose.

Q16. Please give your comments on any related matter not covered in this consultation paper.

Ans 16) The consultation paper does not talk about tariffs and regulatory framework on the tariffs.