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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.

CII's Response:

1. At the outset, we respectfully submit that M2M communication services are not a new type of service or a recent technology innovation, as Telecom Service Providers (TSPs) have been providing these services under their CMTS/UASL/Unified License (Access Service Authorization) for the last few years.

2. M2M communication service is just another type of telecom service which is being offered by TSPs over their commercial network and technology and where both the sides just happen to be machines, earlier from P2P, A2P and P2A communication. As per DoT[1], *M2M communication is a form of data communication that involves one or more entities that do not necessarily require human interaction or intervention in the process of communication. M2M is also called Machine Type Communication (MTC) in 3GPP.*

3. Therefore, M2M communication services should continue to be provided under the CMTS/UASL/Unified Licence. There is no need to introduce any new term called 'M2M Service Provider" in the sector, which has neither been envisaged in our licensing framework nor has been contemplated in the National Telecom Policy 2012.

4. The issue of appropriate licensing framework for reselling M2M communication services was also deliberated by TRAI during the consultation exercise for the introduction of virtual network operators (VNOs). In its recommendations[2], TRAI had stated "*With the increasing deployment of Smart Grids, Smart Transportation, Smart Cars, Smart consumable durables, Machine–to-Machine (M2M) communication and Internet of Things (IoT) converged technologies are coming to occupy centre stage in peoples' lives. This will require that the machines or the equipment is embedded with a device at the manufacturing stage itself which has the capability of communicating with either other devices or a central controller through wireless or*

[1] white paper on "Machine-to-Machine Communication (M2M)"
[2] http://www.trai.gov.in/WriteReadData/Recommendation/Documents/Recommendations_VNO_01_05_2015.pdf

on IP platform. The present licensing framework does not have adequate provisions to facilitate these new developments. ***With the introduction of VNOs, a system integrator for such a network can acquire a VNO licence and get into an agreement with a TSP for such services.*** Pursuant to these recommendations, DoT has already introduced the Unified Licence (VNO). Therefore, entities who want to resell M2M mobile services can always obtain a VNO licence by tying up with the TSPs. Therefore, a new type of licence is not required.

5. Furthermore, any entity will not create an exclusive network and other infrastructure only for M2M communication services, as the same is neither practical nor commercially prudent. Thus, M2M communication services should continue to be provided by TSPs only over their commercial telecom network.

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.

CII's Response:

The government has already prescribed the rules related to entry fee, PBG, FBG, etc. of Unified Licence and Unified Licence (VNO). Since the current licensing framework is quite relaxed, we do not suggest any changes in that.

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

CII's Response:

As stated above, we recommend either a Unified License (Access Service Authorization) or Unified License (VNO with Access Service) regime for providing M2M communication services in India. We do not recommend any other regulatory framework, such as registration certificate for M2M mobile services.

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.

CII's Response:

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1. Spectrum is a scarce national resource and can be utilized for several technologies/services out of which the usage of spectrum for the provision of M2M communication services will be a small portion. Further, it is neither practical nor commercially prudent to buy any licensed spectrum through auction or otherwise for creation of any commercial telecom network, which can only be used for the provision of M2M communication services.
2. Thus, there is no strong case for the designation of specific frequency bands only for M2M communication services, since it can be carried out over 2G, 3G and 4G networks. M2M communication services can be used in a number of frequency bands. This provides a number of options and, thus, no single or multiple frequency bands should be defined for M2M, per se, since such a step will not only cause huge revenue loss to the national exchequer (due to limited use of spectrum) but also lead to sub-optimal usage of precious spectrum resources (due to non-usage of spectrum for other services/technologies).

3. Therefore, we believe that the licensed spectrum is capable to cope with the demand of M2M communication services and market requirements including for mission critical M2M communication services, and we do not foresee usage for such applications as being adequate to justify an increased requirement for spectrum significantly. In fact, the capacity of existing TSPs is such that the current and expected M2M traffic will remain a relatively small proportion of total network traffic demand and, therefore, in itself will not drive increasing spectrum requirements.

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?

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.

CII's Response:

M2M mobile services are a type of access service and can only be provided over licensed spectrum allocated in different bands. We do not recommend the delicensing of any spectrum band. Thus, we do not recommend the de-licensing of any frequency band only for M2M services due to the following reasons:

a. Spectrum is a precious national resource and hence should be monetized. Sub-GHz range is the most sought after band by TSPs worldwide and is most valuable to the government. The de-licensing of Sub-GHz would cause a substantial loss to the national exchequer.
b. The usage of the de-licensed spectrum often leads to sub-optimal spectrum efficiency due to interference amongst systems deployed in the unlicensed band. This is more critical for a sub-GHz band as the propagation is wider and creates more intra-system and inter-system interference.
c. The de-licensing of the spectrum would create a non-level playing field between the operators who have invested in acquiring the spectrum from previous auctions and those who would have access to the spectrum without paying anything for the same.

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?

CII's Response:
The current ceiling tariffs prescribed by TRAI for national roaming services should be applicable for M2M services as well. The wholesale roaming tariffs of M2M services should be determined based on mutual commercial arrangements between the TSPs.

Q8. In case of M2M devices, should;
(a) roaming on permanent basis be allowed for foreign SIM/eUICC;

CII's Response:
We do not recommend international roaming on a permanent basis for foreign SIM/eUICC as we believe that only Indian licensed operators should be allowed to provide telecom services in India. The concept of roaming is relevant only in the context of temporary provisioning of telecom services on visiting network and not on permanent basis. Such a framework will adversely affect the Indian licensing framework.

Q8. In case of M2M devices, should;
(b) Only domestic manufactured SIM/eUICC be allowed?

CII's Response:

We recommend that only domestic manufactured SIM/eUICC should be allowed for the provision of M2M services. We believe that the remote SIM provisioning can take care of all practical challenges. Further, such a regime will facilitate MNP regime for M2M services as well, fostering more competition in the M2M market.

Q8. In case of M2M devices, should;
(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.
Yes, the existing foreign SIMs should be converted to Indian SIMs within a reasonable time period.

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?

CII's Response:
International roaming arrangements should always be left to the mutual decision between two international operators.

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

CII's Response:
We are not in favour of any regulatory framework related to international roaming for M2M. International roaming policy for M2M ought to be left to the mutual agreement between two international operators.

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?

CII's Response:

Mobile Network Codes (MNCs) should continue to be given only to TSPs holding CMTS/UASL/UL (Access Service Authorization). We understand that DoT has already taken a decision to this effect and prescribed the numbering series for M2M services.

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.

CII's Response:

We do not suggest any additional security measures for M2M communication services as TSPs are already subject to stringent security and data guidelines under their licence.

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.

CII's Response:

We believe M2M mobile services should continue to be provided only by entities holding a licence under Section 4 of the Indian Telegraph Act. We do not recommend any further changes to the existing licence agreement.

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.

CII's Response:

TRAI has already prescribed QoS norms for bearer services, both wireless and wireline (voice and data) and the same should also apply to M2M communication services. The QoS/SLAs of M2M should be flexible, left to mutual agreement between customers and TSPs and based on the use case (instead of on bandwidth)

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?

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CII's Response:

N/A

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

CII's Response:

N/A