Response on TRAI's Consultation Paper No. 21/2016 on

# 'Spectrum, Roaming and QoS related requirements

## in

## Machine-to-Machine (M2M) Communications'

Response from

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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.**

1. Response on Q1 (section 2.13)
It should be easy to add MSP services into existing licenses like MSO / TSP / VNO / MVNO, probably as an extension to their licenses.
It is required to ensure that MSPs have at least access to their own / TSP's infrastructure to provide network connectivity for M2M devices. Else M2M service providers will mushroom without making long term plans and QOS towards consumers will deteriorate any time & controlling it will be very difficult for Govt.

**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.**

2. Response on Q4 (section 2.31)
M2M devices have low data bandwidth requirements and also no need for high speed.
2G technology has matured fully and become cost effective as compared to new ones like 4G.
Because of these reasons, mostly 2G is going to be / can be used for M2M communications and so the 2G bands will /can be utilized much more than other bands.

Unified license is being taken by all telcos. That means they can use any spectrum to send any data..e.g. telcos will be able to utilise part of 2G spectrum bandwidth to send 4G data...will that leave enough bandwidth for M2M devices to send the data using 2G? Will telcos lower the priority of 2G data as compared to 4G data, even in 2G spectrum? May be yes, to enhance their revenues from 4G. Despite of low data bandwidth requirement for M2M device, will it affect QoS? Well, the sheer number of M2M devices is going to be in millions / billions, as we deploy 2G chipsets into multiple devices. All put together will put a good bandwidth requirement, while the revenues are going to be low from M2M devices / users.

**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?**

3. Response on Q7 (section 2.41)
Most of the M2M devices will not be moving around, except few like transportation, personal health etc. That could be the reason for not

allowing free roaming, however data roaming is already free in India. And M2M doesn't require voice and SMS services, so pure data based M2M devices must have free roaming services.

Free roaming will also encourage people to use more & more M2M devices.

Possible implications for not providing free roaming - local service provider for M2M devices will have to ensure proper SIM and IMEI number to be used. If device is being relocated to other location within India, local service provider will have to provide another SIM and so number portability will be required.

Mobile Number Portability is not allowed as of now in M2M segment.

In case of a change of service provider (even in the same location), SIM can be replaced by the service team. However number portability will be required if the OEMs start using eSIM. Latest global trend in M2M devices is to use eSIM. Current policy will bind the device with operator and so will disable OEMs to use eSIM in M2M devices.

eSIM will have to be programmed by a service provider and later on change of service team / service provider, eSIM will have to be reprogrammed for new operator and hence the number portability needed in M2M as well.

Probably ministry has to come up with policies on eSIM usage in M2M and Mobile / Tablet devices as well, including how MVNOs / VNOs will operate in case of eSIM usage in M2M and Mobile/ Tablet devices.

**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.

## 4. Response on Q8 (section 2.41)

Roaming on International eSIM / InBuilt SIM should not be free. That would ensure that import of eSIM based devices (M2M as well as mobiles/Tablets) will be done through proper channel, in India.

Will discourage people to bring in international M2M devices just like that and will avoid uncontrollable situation in M2M devices. If we keep roaming charges on international SIMs/eSIMs, TRAI or any other agency can easily monitor these M2M devices, so that these M2M devices are not being used for illegal or terrorism related activities.

However SIMs / eSIMs can be manufactured anywhere in the world, but should be activated within India, with a local service provider.

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

## 5. Response on Q10 (section 2.41) & Q12 (section 2.52)

Machines involved in M2M eco system will generate lots of data. This data will be mostly private data of users of M2M devices, however if you analyse this data, it can give you trends in India, behavioral patterns of users / citizens, etc. All this could lead to security threats at individual level to country level, depending upon the analysis criteria used.

What if these threats lead to financial / economy disaster in the country? What if individual's behavior pattern lead to a prediction for a mass action in a particular area and that information gets into the wrong hands & gets misused? All this is possible as big data analysis takes place on day to day actions.

In any case, this M2M data should not go out of the country, while social media & emails could still continue to be outside country. Cloud infrastructure for M2M must be local. Reports getting generated must remain in the country. While process improvements from these practices / businesses can be given by MNCs / organisations working in India on this M2M eco system, to their counter parts outside country,  but without referring to actual data points.