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Subject: COAI response to the TRAI CP on “Embedded SIM for M2M Communications”

Dear Sir,

This is with reference to the Consultation Paper issued by TRAI on “Embedded SIM for M2M Communications” on 25th July 2022.

In this regard, please find enclosed COAI response to the Consultation Paper.

We hope that our submission will merit your kind consideration and support.

Regards,

Lt. Gen Dr. SP Kochhar
Director General

Cc:

1. Dr. P. D. Vaghela, IAS, Chairman, TRAI, Mahanagar Doorsanchar Bhawan, Jawaharlal Nehru Marg, New Delhi
2. Shri V. Raghunandan, Secretary, TRAI, Mahanagar Doorsanchar Bhawan, Jawaharlal Nehru Marg, New Delhi
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COAI Response on Consultation Paper on Embedded SIM for M2M Communication

With the successful completion of auctions and the deployment of 5G in India, industry may witness several use cases of 5G across various industry verticals. Machine-to-Machine (M2M) Communications and Internet of things (IoT) will present a huge opportunity to the Indian businesses and the Government to leverage various benefits and enhance efficiency. In light of the same, the consultation paper issued by TRAI on Embedded SIM for M2M Communications is very timely and we thank the Authority for providing us the opportunity to share the response to this consultation paper.

Summary of our response is as follows:

1. We submit that a time of maximum of six months in case of all types of M2M SIMs (including e-SIM/eUICC) should be given to the devices imported with international SIMs. Thereafter, the same should be converted/replaced with Indian TSPs SIMs/profiles.
2. We are of the view that while SM-DP should remain within India, the SM-SR should be allowed to be situated across the geographical boundaries, if it is GSMA certified site.
3. Integration between SM-SR and SM-DP of TSPs should be driven by mutual agreement/market forces. It should not be mandated through any regulatory intervention. Other options like profile donation, which are available should be explored.
4. Similarly, SM-SR swapping among the Indian TSPs should not be mandatory and should be driven by mutual agreement/market forces. Other options like profile donation, which are available should be explored.
5. The switch over from one TSP to another TSP should be driven by the TSP or the associated M2M service providers. We do not support user-initiated transfers.

Our response on the various questions raised in the paper is as follows: -

Q1. Whether the TRAI recommended timeline, about the foreign eUICC fitted devices to be on roaming with Indian TSP's network for a maximum period of three years only, needs a review? If yes, what should be the timeline after which the eUICC should mandatorily be configured with Indian TSP's profile?

COAI Response

1. As per M2M guidelines laid down by the DoT in 2018, there is a need to enforce restrictive communication on M2M SIMs. Further, there is a mandate on M2M Service Providers (M2M SPs) to ensure that end customer/user details are made available to Telecom Service Providers (TSPs). To meet these security requirements, it is essential that international roaming M2M SIMs are converted to Indian TSP profiles within specified timeframe.



2. We thus submit that a time of **maximum of six months in case of e-SIM/eUICC should be given to the devices imported with international SIMs. Thereafter, the same should be converted/replaced with Indian TSPs SIMs.** Permanent roaming of the international SIMs should not be allowed in view of potential national security risks associated with such SIMs.
3. A uniform guideline should be put in place for conversion of foreign roaming profiles to the Indian TSPs profile for all M2M/IoT use-cases (irrespective of whether these are based on universal integrated circuit cards (UICC) (1FF/2FF/3FF/4FF/MFF2) or embedded universal integrated circuit cards (eUICC) (MFF2/ pluggable eSIM capable of OTA remote provisioning). Without a framework for time-bound migration, these SIMs will end up not being compliant with Indian security norms.
4. Additionally, since a UICC/eUICC provisioned by a foreign operator being used on international roaming in India is controlled by entities outside India, **security features as required by the Indian Regulatory framework cannot be practically enforced on these connections unless they are converted to Indian TSP profiles.**
5. **Hence, to ensure all eUICC working in India follow Indian security and regulatory requirements, the three-year time period should be reduced to six months.** Further, the timelines (6 months as per our request), should clearly prescribe Start Date and End date. After this timeline (6 months as per our request), all such foreign devices fitted with eUICC, existing or new, should work only with Indian TSP profile. This would remove any areas of ambiguities which can be used for bypassing these guidelines.

Q2. Whether there is a need to change the controlling SM-SR from foreign TSP to Indian TSP in case of foreign eUICC fitted devices operating in India? If yes, what should be the methodology and time period within which it should be done?

COAI Response

1. We are of the view that **while SM-DP should remain within India, the SM-SR should be allowed to be situated across the geographical boundaries, if it is GSMA certified site.** This implies that the Indian TSPs' profile is downloaded into the eUICC through an integration of local (i.e., Indian TSPs) SM-DP with foreign SM-SR to cater various use case requirements. We believe that GSMA framework for eSIM solutions is a comprehensive framework and has well defined interfaces with requisite security features. GSMA also provides certification to the sites for SM-DP/SM-SR set-up; hence, GSMA certification for the site can be made as a requirement for using the SM-SR situated outside India.
2. SM-SR Swap is an exceptional scenario and most of stakeholders may not have adequate learning. There will be many stakeholders involved in transferring the SM-SR like services providers, end customers, SIM manufacturers etc. which may pose operational challenges.



3. Further, it is also pertinent to note here that in certain cases, there would also be requirement of changing the controlling SM-SR from foreign TSP to Indian TSP. This needs to be facilitated by explicitly allowing the same in DoT's guidelines and to be carried out as per GSMA's prescribed process. However, given the various complexities involved, a separate deliberation may be required on this aspect.

Q3. Whether there is a need for the SM-SR of each TSP to be integrated with the SM-DP of each other TSP? If yes, what should be the methodology for integration? Please specify the timelines also.

COAI Response

1. For use-cases involving foreign-manufactured eUICCs entering India or Indian-manufactured eUICCs leaving India, cross integration of SMSR-SMDP across TSPs (Indian TSPs' SM platform with Foreign SM Platform) would be required. However, TSPs should be given the flexibility to mutually agree on the same considering the nascent stage of use cases and market.
2. In case this refers to an arrangement between two TSPs within India, we believe that integration between SM-SR and SM-DP of TSPs should be driven by mutual agreement/ market forces. It should not be mandated through any regulatory intervention. Other options like profile donation, which are available should be explored.
3. Overall, we recommend that in order to enable the proliferation of M2M Services, the methodology/framework to be used should be left to the discretion of TSPs and decided on the basis of business use-cases and commercial requirements. Also, as of now the ecosystem is in a nascent stage and the market for such eUICC fitted devices needs development. Therefore, timelines for implementation of the same can be worked upon in later stages.
4. However, as mentioned earlier, a cross-integration of foreign SM-SR with Indian TSP SM-DP within the GSMA framework and at GSMA-certified sites could ensure the smooth working of various use-cases. It would ensure that the Indian subscriber profile is securely stored in India and securely transferred to the eSIM through the GSMA framework. In a similar manner, an eUICC being exported outside India could work on a cross SM-platform established by integration of India-located SM-SR with foreign located SM-DP.

Q4. Whether there is a need to prescribe SM-SR swapping among the Indian TSPs? If yes, what should be the modalities and procedure for such swap?

COAI Response

1. Similar to our response to Q2 and Q3, we submit that SM-SR swapping among the Indian TSPs should not be mandatory and should be driven by mutual agreement/ market forces. However, it is pertinent to mention here that M2MSP are important stakeholders in the



system and their requirements to swap SM-SR should also be facilitated. Other options like profile donation, which are available should be explored.

2. Also, licensing and regulatory norms laid by DoT and TRAI apply equally to all Indian TSPs and there is no other concern related to security requirements or level-playing field, which may merit need of SM-SR swapping.
3. Further, it must be noted that the SM-SR swap is still at a nascent stage worldwide and most of stakeholders may not have adequate learning. Therefore, approaches like 'profile donation' (in which the profile of one TSP can be securely transferred to another TSP) can also be explored to solve the same purpose.

Q5. Whether the profile switchover, from one TSP to another, is driven by the user or OEM? If yes, what methods can be deployed to execute such switchover?

COAI Response

1. The switch over from one TSP to another TSP should be driven by the TSP or the associated Enterprise (OEM or M2M service providers). We do not support user-initiated transfers.
2. The switchover from one TSP to another will be determined by the M2M Service Provider (M2MSP) as it is the entity that enters into commercial and takes connection from the TSPs and is responsible for providing M2M as a service to customers. This includes connectivity also. Based on the analysis of network performance and commercial considerations, M2MSP may take a decision to use the services of another TSP in case it deems the performance of the current TSP unsatisfactory.
3. **However, if the context is of a switchover from one profile to another within a SIM, in the instance of a multi-profile SIM**, then we understand that currently, there are solutions in the market wherein both user and OEM are able to drive the profile switchover from one TSP to another depending on the implementation and the use case. Additionally, OEM- triggered non-proprietary switching logic helps to switch profiles over the air in the case of an eUICC. In a multi-IMSI UICC solution, a proprietary solution is offered in the market for profile switchover over the air and this can be controlled by the OEM/user.

Q6. Whether non-TSP entities, such as OEMs and M2M Service Providers, should be permitted to own SM-SR and manage the subscribed profiles for their devices? If yes, what should be methodology and procedure?

COAI Response

Members will respond individually.



Q7. Whether the use of ITU allocated shared Mobile Country Code 901.XX (Global IMSI) be permitted in India for M2M Communication? If yes, what should be the methodology and procedure? If not, what are the reasons and challenges in implementation of Global IMSI? Please elaborate

COAI Response

1. **DOT has already allocated sufficient numbering resources for M2M services.** The same is sufficient for the time being.
2. Further, there will be security and data privacy related issues with the use of 901.xx numbering resources as there will be no mode to monitor the devices with this series and it will not be possible to impose Indian Regulations such as restrictions placed by DoT on these numbers leading to exposure to violations. **Furthermore, the Interception basis IMSI/MSISDN by a give operator would be a challenge. Besides, this would be contrary to the temporary international roaming provided to foreign IMSIs, and if allowed, it may accentuate the problem as explained under comments to Q1.**
3. Furthermore, there will be other technical concerns like Home Node mapping, Routing, MSISDN mapping IMSI and circle specific dimensioning challenges. **Therefore, we submit that at this stage, Mobile Country Code 901.XX (Global IMSI) should not be permitted in India for M2M Communication.**
4. With regard to the International Roaming SIMs with Global IMSIs (allocated to foreign entities but operational in India), as stated in our response to Q1, given the regulatory and security concerns, these should be allowed to be used in India provided that these are mandatorily converted to Indian TSP Profiles within 6 months.

Q8. Is there any issue, pertaining to the Consumer e-SIM, that needs to be addressed? Please highlight the issue and suggest mechanism to address it with justification.

COAI Response

Profile Transfer: Many handset manufacturers have introduced eSIM in their handsets and the trend is expected to continue to grow. Therefore, considering that there is likely to be a huge proliferation of eSIM devices in the near future, a solution may be mandated in the handsets to facilitate device to device transfer of profile (if the customer decided to switch over from one eSIM device to another). This will make the process of switching handsets seamless for customers.

Q9. Give your comments on any related matter that is not covered in this Consultation Paper.

COAI Response

These following points which are not covered in this consultation paper: -



1. Relaxation of 4 public IPs restrictive features on IoT/M2M SIMs
 - a. M2M customers today have a requirement of multiple public URLs/ IPs whitelisting as their offerings to end users have been enhanced on account of partnerships and collaborations with various entities to provide more and more services.
 - b. Restricting communication only to four Public IP addresses/URLs is proving to be a major challenge in most of the existing M2M solutions. Many M2M solutions have evolved as a result of partnerships and collaborations between various entities as no single organization is building an end-to-end solution (IoT/M2M stack) by itself. Therefore, there is a requirement of allowing more than four Public IP addresses/URLs for enabling M2M communication.
2. Creation of a Platform/ Forum involving all the key stakeholders to facilitate and strengthen the IoT/M2M ecosystem. **We suggest the establishment of a Common forum or portal for all IoT/M2M eco system players for easy access to details of government projects/guidelines/mandates in IoT/M2M domain.**
3. There is an unprecedented global shortage of semi-conductors, which is directly and severely impacting the supply of SIM Cards in the Telecom sector, not just in terms of increasingly lead supply times but also the prices for this commodity. While the industry has been facing this problem for the past 18 months or so - the supply situation has further exacerbated in the past few months. As per discussions with various SIM card suppliers, we understand that the SIM supply situation is unlikely to get resolved any time before the end of 2024. Under these circumstances, there is an immediate and urgent need to address this challenge and look at alternate options. We would like to suggest that one possible solution could be **to recommend the Smartphone Handset manufacturers in the country to introduce E- SIMS (in addition to the physical SIM slot) in all handsets costing Rs. 10,000/- and above. Furthermore, considering the wide proliferation of eSIM devices in coming time, solution may also be kindly mandated in the handsets to facilitate device to device transfer if customer changes between eSIM devices.** We believe that introduction of E-SIM in this price range of Handsets will shave off a reasonable quantity of Physical SIM cards from India and all Telcos stand to benefit from the same.
4. Require IoT/M2M device standardization/certification and device to network interoperability/ testing standards with governance framework
 - a. There is a lack of Device Standardization and Interoperability/testing standards in terms of connectivity of M2M/IoT device to mobile/cellular network and device interoperability with mobile network, proper testing of the same, and checking for capability of devices.
 - b. Our members have experienced cases where Non-standard & foreign devices with e-SIM and physical M2M SIM have caused a lot of overloads onto mobile network signalling on account of making multiple PDP sessions.



- c. It is important to ensure that mobile operator's network is not adversely affected due to faulty device configurations at M2M SP's or M2M device vendor's end.
5. In case of Internet shutdowns due to the law & order situations, the M2M related services should be excluded from the purview of internet shutdown orders issued by any competent authority.
 - a. 13-digit M2M SIMs different from 10-digit mobility retail customer SIMs, at present service providers are constrained to implement the barring orders for M2M SIMs as well. With expanding services horizon and technology advancements including 5G services launch, it is expected that these M2M SIMs will be adopted across wide range of industries / verticals, including many missions' critical applications. Therefore, suspending services on these SIMs during implementation of service barring order will not only cause loss of business but can also lead to massive and catastrophic service disruptions, when there are no security implications for permitting normal operations of these SIMs during such situations, as explained below.
 - b. These M2M SIMs have restrictive features in place to limit the number of IPs and SIMs with which the 13-digit M2M SIMs can communicate for data/voice/SMS under DoT instructions dated 30th May 2019. In view of this, there is no possibility of these 13-digit numbers getting used for any disruptive or malicious activities apprehended in the internet barring orders. Therefore, these numbers should be explicitly excluded from the service barring orders issued by Government Authorities.
 - c. Industry is rapidly transforming the way businesses conduct key activities and is a game changer for our industries. With technologies like IoT and M2M increasing the efficiency and productivity by leaps and bounds, these hold massive potential for development and innovation and would be critical for industrial leadership in post-Covid world.
 - d. IoT and M2M services are protected from disruption from any service barring order. Accordingly, to avoid customer inconvenience and to ensure the business continuity, we request you to issue a directive that 13-digit M2M numbers will not be covered in case of service barring orders issued by competent authorities due to the law & order situations.
6. Although online M2MSP registration has been initiated on Saral Sanchar portal w.e.f. 19.04.2022, however, the list of the registered M2MSPs is not publicly displayed. Therefore, we request that list of registered M2MSPs should be publicly displayed including those M2MSPs who are providing M2M services in India using foreign M2M SIMs.
