



VIL/PB/RCA/2022/ 015

September 19, 2022

**Advisor (Networks, Spectrum and Licensing)**  
**Telecom Regulatory Authority of India,**  
Mahanagar Doorsanchar Bhawan,  
Jawaharlal Nehru Marg (Old Minto Road),  
New Delhi – 110002

**Kind Attn: Shri Akhilesh Kumar Trivedi**

**Subject:** Comments on the TRAI's Consultation Paper on "Embedded SIM for M2M Communications" dated July 25, 2022

**Dear Sir,**

Kindly find enclosed herewith comments from Vodafone Idea Limited to the TRAI's Consultation Paper on "Embedded SIM for M2M Communications" dated July 25, 2022.

We hope our comments will merit your kind consideration please.

Thanking you,

Yours sincerely,

For **Vodafone Idea Limited**

**P. Balaji**  
**Chief Regulatory & Corporate Affairs Officer**

**Enclosed:** As stated above



## **VIL Comments to the TRAI Consultation Paper on “Embedded SIM for M2M Communications”**

At the outset, we are thankful to the Authority for giving us this opportunity to provide our comments to the TRAI Consultation Paper on “Embedded SIM for M2M Communications” dated 25.07.2022.

This consultation paper is another step towards the scalable and interoperable deployments to assimilate various eSIM (Embedded SIM) standards, outline policy and regulatory approaches and measures for eSIM proliferation increasing on regular basis.

### **Key submissions:**

1. Considering the matured Indian market and to ensure all eUICC (Embedded Universal Integrated Circuit Card) working in India follow Indian security and regulatory requirements, the three-year time period of foreign eUICC fitted device to work with Indian TSP’s profile, should be reduced to six months from present 3 years. This 6 month time-period should be defined in DoT’s instruction with one End date i.e. 6 month from the date of issuance of DoT’s instruction, after which the eUICC should mandatorily have Indian TSP profile.
2. Therefore, we would like to urge TRAI to recommend flexible approach and explicitly allow both the options i.e. integration of Indian SM-DP (Subscription Manager – Data Preparation) with foreign SM-SR (Subscription Manager – Secure Routing), as well as foreign SM-SR swapping with Indian SM-SR.
3. There is no need to prescribe SM-SR swapping among the Indian TSPs and it should be left to mutual agreement between TSPs and market forces.
4. In case of B2B2C connections, services and its related commercials are subscribed by OEM/Enterprise and they offer end to end solution to their customers. Therefore, all service management requests should be initiated by OEM/Enterprise only and not by the user.
5. For supporting innovation and growth, M2MSPs (M2M Service Providers), registered under DoT’s guidelines, should be allowed to own and manage subscription through their own SM-SR, as long as they have to follow the same rules as the ones imposed to TSPs.



6. Use of 901.xx numbering in Indian context is not required at this stage and any mandate around the same will bring in huge set of challenges and complexities.
7. eSIM should be introduced in the handsets in the price range of INR 10,000 and above.

In addition to above, we would like to submit our question-wise comments also as follows, for Authority's kind consideration:

### Question-wise Comments

**Q.1: 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?**

#### **VIL Comments to Q. No. 1**

##### **1. Earlier Recommendations from TRAI**

- a. TRAI vide its letter No. 103-3/2016-NSL-II dated September 05, 2017 provided recommendation on various aspects of M2M which included the following:

*"Devices fitted with eUICC shall be allowed in operation in roaming for maximum three years from the date of activation of roaming in the network of Indian TSP and mandatorily converted/ reconfigured into Indian TSP's SIM within the stipulated period or on change of ownership of the device, whichever is earlier. The Authority/Licensor shall review the condition based on the developments and requirements."*

##### **2. Review of timeline:**

- a. In our view, international in-roaming of foreign eUICC fitted devices with Indian TSP's network shall be allowed for the least possible time. Allowing international roaming on a long term basis undermines the basic security and regulatory framework of the Indian telecom sector as well as adversely affect the business prospects and investments of Indian TSPs due to non-level playing field.



- b. Ensuring security for these eUICC fitted devices is of crucial importance owing to its various applications in today's environment. The foreign eUICC devices roaming in India will not be complying with the domestic regulatory and security guidelines thus, compromising the Security of the Nation and also creating non-level playing field with competing eUICC from Indian players.
- c. In addition to above, there are concerns on non-availability of such services in J&K in case of imported devices pre-fitted with foreign SIM cards. This is due to restrictions placed on international SIMs roaming in J&K area.
- d. In this light, we submit that the above-mentioned time period of three years is a very extensive time-period and will allow the eUICC OEMs (Original Equipment Manufacturer) to use international profiles over roaming, for very long, without complying to the domestic regulatory and security requirements.
- e. **Therefore, we recommend that the timeline of three years needs a review.**
- f. The Indian market is very much matured for past few years and almost TSPs are having SM-DP (Subscription Manager – Data Preparation) and SMSR (Subscription Manager – Secure Routing), to cater various needs of M2M and consumer e-SIM use cases. The profiles in foreign eUICC devices can be replaced with profiles from Indian TSPs through two approaches i.e. by either carrying out integration between Indian TSP's SM-DP with foreign SM-SR OR by SM-SR swapping from foreign SM-SR to Indian SM-SR. However, if the foreign eUICC SIM is not capable of remote provisioning, it will require physical replacement of the foreign SIM with Indian M2M SIM.
- g. During the last few years, we have not seen any effort from foreign eUICC owners or their domestic partners, towards replacing the profiles to the same from Indian TSP, through either of the above modes.
- h. Continuing on such extensive timeline of 3 years would not help and would continue to support the status-quo i.e. foreign eUICC working in India on roaming, without following Indian security and regulatory requirements and also creating non-level playing field with competing eUICC from Indian players.
- i. **Therefore, considering the matured Indian market and to ensure all eUICC working in India follow Indian security and regulatory requirements, the three-year time period should be reduced to six months.**



- j. Further, this six month time period should not be a recurring time-period starting from date of activation in roaming else it would defeat the purpose with which such recommendations are issued. **In our view, there should be a defined 6 months' time-period in DoT's instruction with one End date i.e. 6 months from the date of issuance of DoT's instruction, after which the eUICC should mandatorily have Indian TSP profile.** Further, the DoT should define the compliance and audit mechanism for ensuring that foreign eUICC SIMs are not used beyond six months eg. Requiring the entity obtaining foreign M2M SIMs for provision of M2M services in India to mandatorily register with DoT as M2MSP so that the list of such entities is available with the DoT for compliance and audit and for ensuring compliance to the six month timeframe for replacement of foreign M2M SIM with Indian TSP profile.
- k. Within said 6 months, the existing foreign eUICC should be loaded with profiles from Indian TSPs based on any of the two approaches for the eUICC where profiles can be uploaded OTA (Over-the-Air) mentioned in point 2f above. Once either of the said two approaches are implemented for existing eUICC, there will not be any need of roaming and all eUICC can work with Indian profiles from starting itself, without any need of 6 months' time period.
- l. Further, the time-period provided should be clearly mentioned and not lead to any ambiguity.

### 3. Removal of ambiguity:

- a. The present recommendation of time-period along with allied conditions, has certain room of ambiguities and needs strengthening, e.g.:
- Foreign operator may conveniently 'steer' its M2M traffic from a Indian TSP to another Indian TSP e.g. for 2 years on TSP – A network, thereafter for 2 years on TSP – B network, thereafter for 2 years on TSP – C network and thereafter for 2 years on TSP – D network and so on. Thus, effectively having permanent roaming in India.
  - eUICC can have multiple profiles, foreign operators easily switch profiles from one to another, thereby continuing as on permanent roaming in India.
- b. Further, in our view, it would be challenging to identify change in user of the device. The use-cases and the market dynamics, in India or globally, are such that generally there is no identification or trigger available with the OEM or M2MSP or TSP in case there is change in user of eUICC device.



- c. Therefore, the recommendation and ensuing guidelines, should remove any areas of ambiguities which can be misused, and may end up bypass the norms. The recommendation of 'any time period' should have defined Start date (date of instructions from DoT) and defined End Date (6 months or any other time-period, from the date of instructions from DoT), post which, all such foreign eUICC should have Indian TSP's profiles.

**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?**

#### **VIL Comments to Q. No. 2**

1. 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 if mandated as an only option.
2. While there is certainly a need to have regulatory permission for changing the controlling SM-SR from foreign TSP to Indian TSP in case of foreign eUICC fitted devices operating in India, the ecosystem is yet not matured to cater to mandatory SM-SR swap at this stage.
3. Considering challenges in mandatory SM-SR swap, integration of Indian TSP's SM-DP with foreign SM-SR should be a better alternative at this stage and it must be explicitly allowed. The eSIM IoT/M2M ecosystem requires such flexible approach of allowing both SM-SR swap and integration of Indian TSP SM-DP with foreign SM-SR (without any mandate), to support innovation and growth with regulatory certainty and ensure there are no roadblocks to growth in eSIM ecosystem.
4. It is function of SM-SR to burn the TSP's profiles over the eUICC, allowing Indian TSP's SM-DP integration with foreign SM-SR, it would require the Indian TSP's profiles to be shared outside the Indian jurisdictions, which must be explicitly allowed in regulatory norms.
5. **Therefore, we would like to urge TRAI to recommend flexible approach and explicitly allow both the options i.e. integration of Indian SM-DP with foreign SM-SR as well as foreign SM-SR swapping with Indian SM-SR.**



6. **In case of SM-SR swap from foreign SM-SR to Indian SM-SR, the methodology and process should be aligned as per GSMA SGP 02.** Only GSMA compliant Remote SIM Provisioning System solution where the Server facility has been physically visited and certified by GSMA – only such solution should be allowed. Proprietary solution should not be allowed for e-UICC. In SM-SR Swap, each and every card data need to migrate from Foreign SM-SR to Indian SM-SR and this is generally a recurring process.
7. There is another specification (SGP.32) in progress at GSMA and is expected to be released by GSMA in near future that will change the process of profile download. It would become the latest IoT eSIM standard – referred as ESIMWG#7 or SGP31 and SGP32, which brings new agility for future IoT eSIM Devices. Future M2M/IoT eSIM Devices are likely to be compliant to the new IoT eSIM GSMA Std (SHP31/32) and not the “old” M2M eSIM Std (SGP01/SGP02). Hence, we request that TRAI should not hard code any such specification in its guidelines or recommendations and provide for flexible regulatory norms allowing moving to updated/latest GSMA standards, issued from time to time.

**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.**

#### **VIL Comments to Q. No. 3**

1. Yes, there is a need for the SM-SR of each TSP to be integrated with the SM-DP of each other TSP. However, as of now the ecosystem is in nascent stage and the market for such eUICC fitted devices needs development and innovation, as well as market forces need to be allowed to work. Therefore, timelines for implementation of the same can be worked upon in later stages.
2. This integration among Indian TSPs is required for profile download through OTA as per the methodology and process defined in GSMA SGP 02. It should not be mandated and same should be carried out basis mutual agreement between TSPs in India.
3. Presently, SM-SR and SM-DP of the TSPs are not integrated with each other. The same can be worked upon in detail once the ecosystem has evolved.
4. **Overall, we recommend that in order to enable the proliferation of M2M Services, the methodology/framework to be used should be left to the choice of TSPs and decided on the basis of business use-cases and commercial requirements.**



**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?**

**VIL Comments to Q. No. 4**

1. SM-SR Swap is an exceptional scenario and most of stakeholders may not have adequate learning. There will be many stakeholders involve in transferring the SM-SR like services providers, end customers, SIM manufacturers etc. which may pose operational challenges.
2. Hence, similar to our above comments to question no 2 and 3, we submit that there is no need to prescribe SM-SR swapping among the Indian TSPs. Also, Indian TSPs are already licensed and regulated by DoT/TRAI. Such licensing and regulatory norms apply equally to all Indian TSPs and there is no concern related to security requirements or level-playing field, which may merit need of SM-SR swapping.
3. To meet the requirement of change in profile of an Indian TSP with another TSP, there should be SM-DP & SM-SR integration among Indian TSPs which may cater all customer requirements, as mentioned in our comments to question no. 3 above.
4. **Therefore, we do not recommend SM-SR swapping amongst the Indian TSPs.**

**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?**

**VIL Comments to Q. No. 5**

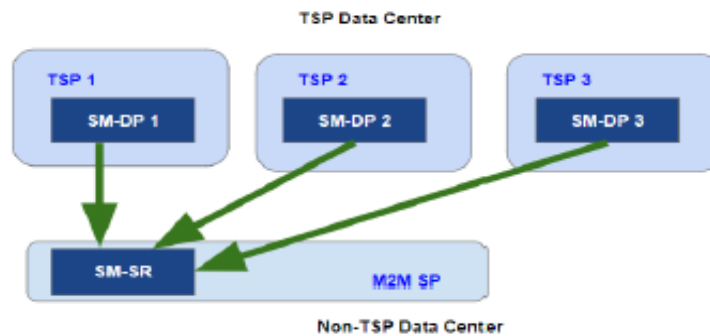
1. In case of B2B2C connections, services and its related commercials are subscribed by OEM/Enterprise and they offer end to end solution to their customers. In this case, TSP/M2MSP has commercial and service relationship only with the concerned OEM/Enterprise. Therefore, all service management requests should be initiated by OEM/Enterprise only and not by user.
2. To meet switchover of profiles from one TSP to another, there should be SM-DP & SM-SR integration among Indian TSPs, as mentioned above in our comments to question no. 3.



**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?**

**VIL Comments to Q. No. 6**

1. For supporting innovation and growth, M2M service providers, registered under DoT's guidelines, should be allowed to own and manage subscription through their own SM-SR (shown as below wherein each operator will provide its own SM-DP to create their profile), as long as they have to follow the same rules as the ones imposed to TSPs.



2. Any M2M Service Provider willing to manage subscription may deploy their own SM-SR and integrate the same with interested TSPs as per GSMA prescribed standards and certifications.
3. M2M SP site should be GSMA SAS for Subscription Management (SAS-SM) certified as per scope defined by GSMA - [https://www.gsma.com/security/wp-content/uploads/2020/07/GSMA-SAS\\_SM-Scope-Definitions-v1.pdf](https://www.gsma.com/security/wp-content/uploads/2020/07/GSMA-SAS_SM-Scope-Definitions-v1.pdf)

**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.**

**VIL Comments to Q. No. 7**

1. The basic purpose of ITU allocated shared Mobile country code 901.XX (Global IMSI) is to identify the M2M connections across different countries. This further helps the operator



with such IMSI series, to seek a different roaming commercial from its roaming partners in other countries. In absence of such separate IMSI series, it would not be possible for roaming operators to identify M2M connections and separate from non-M2M connections, for provision of separate commercials based on mutual agreements.

2. Any IMSI series which doesn't have Mobile Country Code of India will be treated as roaming IMSI in Indian TSP network. We feel that as the entities owning the IMSI series would be global in nature, Indian government would have limited capability to impose local M2M rules. This would pose concerns similar to the ones mentioned above in our comments to question no. 1.
3. In addition to this, we would like to highlight that in Indian context, the access authorizations are given separately for 22 licensed service areas. This may give rise to requirement of separate Global IMSI series for each of its 22 licensed service areas (LSA) and separate configurations in each such LSA. This would be a very complex process and use of 901.xx numbering will further complicate the existing arrangements.
4. Also, at present, Indian market is in evolving stage and we feel that we should look at this point when we have a mature market developed in India. Till such time, these IMSIs taken by global entities should be treated as international roaming IMSIs.
5. DoT has already allocated sufficient numbering resources for M2M services. Use of 901.xx numbering shall create complexity in international roaming traffic handling for foreign IMSI ranges.
6. **Hence, we recommend that 901.xx numbering need not be implemented in India at present.**

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

#### **VIL Comments to Q. No. 8**

##### **1. Transfer of profile from one eUICC to another e-UICC:**

- a. Currently, there is no guideline allowing transferring of profile from 1 eSIM capable phone to another eSIM capable Phone. A TSP has to burn a new SIM profile for the customer. (E.g.: if a customer is upgrading the phone from iPhone 11 to iPhone 12).



In case of physical SIM, this scenario is possible as customer can remove the SIM from old mobile to insert it into a new mobile. **We request TRAI to recommend allowing of transfer of same SIM profile to another mobile device in case there is no change in KYC details.**

- b. 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.
- c. There are various use cases where the device being imported in India are equipped with eSIM with a bootstrap profile which is registered on company's own SM-SR platform which is based outside India.
- d. In order to facilitate the download of Indian TSP's profile into these eSIM, either SMDP-SMSR integration or SM-SR swapping would be required, as per GSMA's standards and certifications. In both the scenarios, the Indian SM-DP or SM-SR would have to integrate and interact with the foreign IP of foreign SM-SR, as per GSMA process requirement. This should be noted and be made part of regulatory norms to be prescribed.

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

**VIL Comments to Q. No. 9**

**1. Relaxation of 4 public IPs restrictive features on e-SIMs:**

- a. In today's scenario, Enterprise customers require 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 to four Public IP addresses/URLs is a major challenge in most of the existing e-SIM solutions and their innovations as well as growth of new use cases. Many e-SIM 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. Due to this, more than four Public IP addresses/URLs are required to be allowed for enabling communication through e-SIMs. Moreover, with the movement of many applications to the cloud, the



requirement of the enterprises is to have whitelisting of more than 4 public IPs/URLs (eg. Entire IP pool, entire domain etc.). Globally, no such restrictions have been placed on M2M SIMs/services in leading M2M markets.

- c. **Hence, we request TRAI to recommend relaxation in maximum 4 public IPs/URLs restriction currently applicable for e-SIMs and allow as many IP/URLs as required by the specific application.** Even by increasing the number of public IP Addresses/URLs, these SIMs will still be in conformity with the principle of ensuring that these cannot be misused. These SIMs will always be used in a controlled environment and if required there can be a mechanism to check the record of TSPs to find out the destination IP Addresses/URLs which have been whitelisted for these SIMs procured by M2M Service Provider.
  - d. Additionally, we also suggest that regulatory guidelines should also allow transfer of ownership between companies for instance;
    - i. involving merger, acquisitions, takeover of companies
    - ii. for cases wherein companies wish to transfer the ownership from the parent company to its subsidiaries/ other group companies or vice versa/ and between its subsidiaries/ group companies
    - iii. for cases wherein M2M service provider is ceasing its operations or is filing for bankruptcy, etc. and the M2M SIMs are required to be either transferred to the new M2M service provider or directly to the company where M2M SIMs are used/deployed.
2. **Creation of a Platform/ Forum** involving all the key stakeholders to facilitate and **strengthen the e-SIM ecosystem:** The Government shall establish a Common forum or portal for all e-SIM eco system players for easy access to details of government projects/guidelines/mandates in e-SIM domain.
  3. **Require device standardization/certification** and device to network interoperability/**testing standards with governance framework pertaining to e-SIMs:**
    - 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. TSPs have experienced cases where non-standard & foreign devices with e-SIM have caused a lot of overload onto mobile network signaling 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 e-SIM device vendor's end.
- d. Hence, a working group of M2M SP, Module providers, Chipset providers, Telecom Operators and application providers shall be constituted by the Government to together create standard specifications for device and testing.

#### **4. Inclusion of e-SIM in Handsets:**

- a. There is an unprecedented global shortage of semi-conductors for long time period now, which is directly 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. This 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.
- b. Hence, we would like to suggest that one possible solution could be to recommend the smartphone handset manufacturers in the country to introduce eSIMs (in addition to the physical SIM slot) in all handsets costing INR 10,000/- and above.
- c. We believe that introduction of eSIM in this price range of handsets, will shave off need for a reasonable quantity of physical SIM cards from India. This will benefit both TSPs and handset manufacturers.

#### **5. Exclusion of M2M SIMs from Internet Shutdown:**

- a) At present, service providers are constrained to implement the internet/service shutdown orders for IoT/M2M SIMs as well. With expanding services horizon and technology advancements including 5G services launch, it is expected that these M2M/IoT connections will be adopted across wide range of industries / verticals, including many mission critical applications. Therefore, suspending Internet or other services on these IoT/M2M connections 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 IoT/M2M connections during such situations.

- b) More importantly, these IoT/M2M SIMs have restrictive features in place to identified IPs and SIMs with which the 13-digit M2M SIMs can communicate for data/voice/SMS under DoT instructions dated 30.05.2019. 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 or other service barring orders.
- c) **Therefore, we request TRAI to recommend that these numbers should be explicitly excluded from the service barring orders issued by Government Authorities. To avoid customer inconvenience and to ensure the business continuity, a directive needs to be issued 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. Information about M2MSPs:**

- a) 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.
- b) **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.**

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