

RJIL/TRAI/2023-24/117

11th July 2023

To,

**Shri Akhilesh Kumar Trivedi,
Advisor (Networks, Spectrum and Licensing),**

Telecom Regulatory Authority of India

Mahanagar Doorsanchar Bhawan

Jawaharlal Nehru Marg, New Delhi - 110002

**Subject: RJIL's comments on TRAI's Consultation Paper dated 02.05.2023 on
"Definition of International Traffic"**

Dear Sir,

Please find enclosed the comments of Reliance Jio Infocomm Limited on the consultation paper dated 02.05.2023 on **"Definition of International Traffic"**.

Thanking you,

Yours Sincerely,

For **Reliance Jio Infocomm Limited**

Kapoor Singh Guliani

Authorized Signatory

Enclosure: As above

**Reliance Jio Infocomm Limited's comments on TRAI's Consultation Paper on
"Definition of International Traffic" dated 2nd May 2023**

Preface:

1. We thank the Authority for giving us the opportunity to respond to the Consultation Paper. We note that Department of Telecommunication (DoT), in its reference, has sought Authority's Recommendations on Defining International SMS and Domestic SMS, and the Authority deemed it suitable to expand the scope of consultation to International and Domestic Traffic.
2. At the outset, we would like to emphasize that the matters under the consultation are already settled and there is no requirement to define the international SMS. Indian telecommunication networks have been receiving international SMS for over 20 years and have been able to identify them accurately without any need for an explicit definition. Therefore, we believe that there is no reason to add such a definition in Unified License.
3. It is also pertinent to mention here that wherever required, Telecom Service Providers (TSPs) have been defining the International SMSs for user convenience. An example of this can be seen in the Code of Practices (COP) prescribed by the TSPs under the co-regulation provisions of the Telecom Commercial Communications Customer Preference Regulations, 2018. RJIL COP clearly defines International SMS as herein below:

International SMS: Any data/application/system/servers etc. which influences, generates, control, facilitate or enable the generation, dissemination/ transmission of messages from a location outside the territory of India will constitute as International SMS. Any mirroring solution in India shall not impact and/or change the nature of such International SMS to national/domestic SMS.

The sender shall enter into a distinct agreement with the concerned Telecom Service Provider ('TSP') for international SMS. The OAP and TAP i.e. TSP's shall also have a written arrangement in place for International messages. The Header for international messages shall be distinct as may be decided by a TSP/Header Registrar.

If any case of misuse or unauthorised SMS termination including termination of International SMS as domestic SMS, is detected, RJIL shall have right to block the customer account as well as charge all such unauthorised SMSs terminated since provisioning of the customer account, with double the prevailing rate of International SMS termination.

4. **This definition has been filed with TRAI as part of COPs.**
5. It is also worthwhile to discuss the need for defining the international messages. The Authority is aware that we, as TSP have encountered certain entities deliberately withholding the complete call flow diagram of their SMS. Upon closer examination, it became apparent that the intention was to conceal the details of servers outside of India that prompts the generation and sending of SMS. **These messages are routed through mediation servers installed in India. Such mediation servers, receive the SMS in various forms such as IP through internet/leased lines and send it to the Indian domestic PSTN network using the links established with telemarketer/TSPs for domestic A2P messages.**
6. Hence, we deemed that these messages do not come under the purview of domestic telecommunication traffic under the prevailing regulatory oversight, as it are caused by servers situated outside of the country.
7. Before making any further submissions on the issues raised in the Consultation Paper (i.e. definition of International Traffic and Domestic Traffic), it is important to first outline the principal issue of International SMS (raised by certain entities) that has triggered this Consultation.

International SMS triggered by Mediation Solutions:

8. As mentioned by the Authority in the Consultation paper that certain entities, in their representations, have asked that their SMSs should be allowed to be transmitted via domestic routes rather than international routes. We submit that extensive deliberations have already been held between these entities, TSPs and the Authority on the issue and we firmly believe that there is no ambiguity in categorizing the messages from these entities as international SMS. Nevertheless, we are taking this opportunity to describe the messaging by these entities for complete understanding of the issue.
9. We submit that the SMSs sent by these entities fall under the category of international A2P SMSs (i.e. Application to Person) and are originated from the servers located outside of India. As previously mentioned, these entities had withheld the complete call flow diagram for such SMS. However, during the deliberations at TRAI and **presentation of call flow diagrams by these entities**, it became evident **that such SMSs are transmitted using a mediation servers/media gateways installed in India. In this solution, servers located outside India originates these SMSs, which are then routed to India through Internet/leased lines and pumped in the Indian PSTN using the media gateways/mediation servers located in India. SMSs sent to the Indian operators through such arrangement cannot be termed as domestic messages by any stretch of**

imagination. It is important to mention here that there are many other service providers that use similar mediation servers, however, they are not seeking to disguise their international SMS as domestic SMS.

10. Such international A2P SMSs, disguised and masked as domestic SMSs, are sought to be delivered to users in India through the SMS aggregators and telemarketers using the point of interconnections built for domestic A2P traffic. Even the aggregators are not explicitly informed about the nature of the traffic received, whether it is domestic or international. The Indian operators receive these SMSs on domestic Points of Interconnection (PolS) and have no means to identify and differentially charge such SMSs.
11. It is crucial to highlight that the **core application or server located outside India serves as the actual sender/originator of these SMSs, having sole authority over** the decision regarding recipients, timing, and content. The mediation server located in India simply acts as a media convertor and such messages are routed on the PolS established through the aggregator/telemarketers. **Like voice grey calling, this mechanism is not essential to the call flow and is employed solely to disguise international messages as domestic messages for the purpose of evading the payment of International SMS termination charge.**
12. We submit that, like voice grey market, employing a media gateway in **India does not alter the classification of the International SMS as domestic SMS, as the actual sender/originator of such SMSs is situated outside India.**
13. **The above set-up is deployed for avoiding payment of International SMS termination charge. But it also lead to a huge security threat as the call records of such international messages will show as domestic messages. Treating such SMSs as domestic would lead to the same menace as prevalent in the illegal Grey-voice calling route that Government is trying to address for the last so many years.** The modus operandi of Grey Calling route can be described as below:
 - a. the calls originated by users outside India are carried to a location in India through Internet/leased lines
 - b. The media gateway/mediation server (**also known as illegal exchange**) then receives these calls for further routing these to Indian users through domestic PSTN.
 - c. Such calls are terminated to telephone users in India by injecting these into Indian PSTN through PRIs/Mobile Connections (individual phone or SIM Box)
14. Through the aforementioned approach, entities are able to circumvent the network of ILD licensee, bypass PSTN ILD gateways and evade payment of international termination charge paid to terminating access provider either directly or through NLD service provider

15. The security agencies are not able to identify this traffic as International Traffic and are not able to trace their origin. Thus, this route has become **a preferred way of pushing illegal traffic (such as CLI tampering etc.) to India and has caused a concern amongst security agencies**. Fraudsters and anti-national elements have exploited the grey calling route¹ to carry out anti-national and anti-citizen activities.
16. **It is worthwhile to mention here that the Government is still grappling with the issue of CLI spoofing as recently as October 2022, Proof of Concepts (POCs) were commissioned to restrict the international calls coming to India with a +91 prefix. Thus, the issue is still unaddressed for voice services and extends to SMS services as well. The problem should not be exacerbated by creating a definition that primarily serves to reduce costs for certain entities and leads to further growth of SMS grey route through mediation solutions.**
17. **We submit that in case, SMSs sent through mediation servers are allowed to be treated (and routed) as domestic SMSs, it will create a grey route for SMS services, mirroring the existing situation prevalent in voice services.** The similarities between the two are:
 - a. In both the cases, the actual originator of the communication is located outside India.
 - b. The traffic (voice/SMS) originated outside India is routed to a mediation server/media gateway located within India on Internet or lease lines
 - c. The mediation server/media gateway then modifies the CLI of the traffic in order to disguise this traffic as domestic traffic. Thus, this traffic appears as domestic traffic to terminating access provider and the user despite the fact it is originated by a user/server located outside India
 - d. In case of voice grey calling route, the traffic is routed to Indian users on domestic Pols through SIM boxes/PRI etc. In case of the SMS grey route, traffic is routed on domestic Pols through the SMS aggregators.
18. The above modus operandi is employed to avoid the payment of International Termination charge (for voice/SMS) to the terminating access provider. This causes a loss of revenue to the terminating access provider and to National Exchequer. Notably, more than 26% (8% License Fee and 18% GST) of this revenue is payable to the National Exchequer.
19. While the above modus operandi is employed to avoid payment of ILD termination charge, it also leads to adverse security implications, as security agencies are unable to identify the origin of the traffic in the grey routing method.

¹ <https://government.economictimes.indiatimes.com/news/technology/artificial-intelligence-can-help-control-grey-calling-route-telecom-fraud/73211498>

20. We reiterate that if such traffic is treated as domestic traffic, **it would encourage routing of illegal SMS traffic, (similar to voice traffic in grey calling) and will become a security concern, as many entities would tie-up with telemarketers to push such traffic to the domestic networks.** The country is already grappling with the issue of spam/scam messages originating from other countries on OTT Communication² platforms. Given that the consumers perceive SMS as a more reliable means of communication, this traffic would likely shift towards SMS, resulting in potentially dangerous consequences. Considering the consequences of SMS grey route on revenue of service providers/national exchequer and the security of the consumer, no entity either big or small should be allowed to route such traffic.
21. Therefore, **while deciding the nature of communication – International or domestic, the sole criteria should be the location of the actual users between whom such information transfer takes place.** To begin with, humans were the only users of telecommunication services and there used to be only Person to Person or P2P communication. However, nowadays, a user can either refer to human or a machine and in addition to P2P communication, there can be A2P (Application to Person) communication or M2M (Machine-to-Machine) communication also.
22. In the case of SMS mediation solution method employed by these entities, the information is actually originated at the application server located outside the country and recipient within country. Therefore, **this service qualifies as an international telecommunication service. We emphasize once again designating this SMS traffic as domestic cannot be justified solely because the mediation server in India facilitates its transmission. The true originator of these SMS is the server or intelligence situated outside India making it imperative to classify them as international traffic.**
23. With the above background, we would now address the broader issues around the definition of International Traffic and Domestic Traffic, raised in the Consultation Paper.

Issue wise response:

Q1. Whether it would be appropriate to define the term ‘international traffic’ in the telecommunication service license agreements as ‘the international long-distance traffic originating in one country and terminating in another country, where one of the countries is India’? Kindly provide your response with a detailed justification.

&

² <https://www.indiatoday.in/information/story/like-a-video-and-make-money-scam-all-about-the-cyber-fraud-on-whatsapp-2376044-2023-05-07>

Q2. In case your response to the Q1 is in the negative, kindly provide an alternative definition along with a detailed justification.

RJIL Response:

1. To reiterate, we would like to submit that the DoT had sought Authority's Recommendations on Defining International SMS and Domestic SMS only. Further, the matters addressed in the consultation have already been resolved, and there is no necessity to establish a specific definition for international SMS.
2. Indian telecommunication networks have been receiving international SMS for over 20 years and have been able to correctly identify the International SMS without any need for an explicit definition and there is no reason to add such a definition in Unified License.
3. We submit that the moot point pertaining to issue under discussion is what should be considered the origin of SMS. We understand that origin for a P2P message would correspond to when a person decides to send a message to another person and initiates its transmission. Consequently, the location of this person becomes the determining factor for classifying the traffic as either domestic or international. Similarly, for A2P messages, the origin is established by the location of the core application server, which decides when to send a message to a person. Therefore, it is the location of the application server that should govern whether the SMS originated is classified as domestic or international.
4. In view of this, we believe that defining International Traffic as the traffic originating in another country and terminating in India (depicted in Figure 2.4 of the Consultation Paper) **will not address the principal issue of grey SMS route (described in the preface) unless it recognizes the distinction between the PSTN services (voice/SMS) and Internet services, as explained below.**

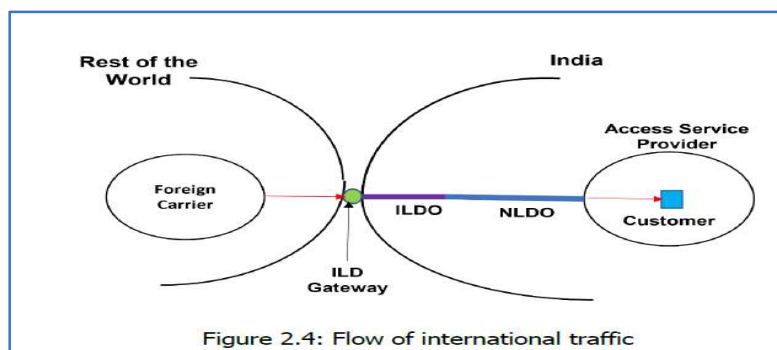
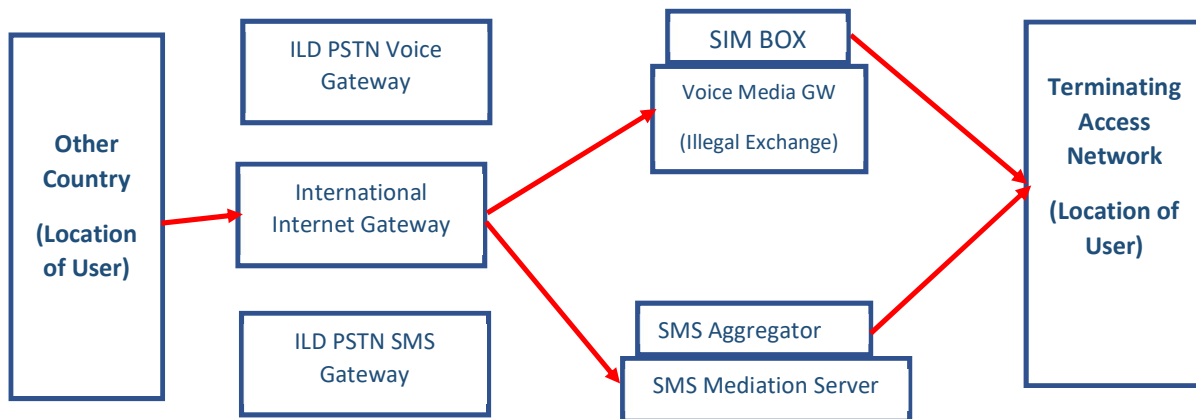


Figure 2.4: Flow of international traffic

Representation of International Traffic given in Consultation Paper

- a. India has well-structured Regulatory framework for the routing of traffic for various services. Although, these days PSTN and Internet use same type of bearer (i.e. IP), these are routed on two different networks (PSTN and Public Internet).
- b. PSTN services (voice/SMS) use the E.164 based numbering resources (i.e. MSISDN etc.) assigned by DoT and the voice/SMS traffic is routed on the PSTN using these identifiers. On the other hand, Internet traffic is routed on Public Internet using the IANA based numbering resources/identifiers (such as IP Address).
- c. Since Public Internet and PSTN are two separate networks, the PSTN and Internet traffic enters into India through different International gateways. The PSTN traffic (Voice/SMS) enters India through PSTN ILD Gateway and the Internet traffic enters India through International Internet Gateway.
- d. PSTN ILD Gateways are able to intercept/monitor (i.e. lawful interception) PSTN traffic and generate CDRs for such traffic. Whereas International Internet Gateway has the capability to intercept/monitor Internet Traffic and not PSTN traffic. Moreover, ILD termination charge is applicable to International incoming PSTN traffic, when it ultimately terminates into the network of access provider after passing through PSTN ILD network/gateway.
- e. Therefore, it is imperative International PSTN traffic enters India only through PSTN International Gateway (Voice/SMS) established by the ILDOs as otherwise, it will lead to bypass of security requirements and International termination charges payable to terminating access service providers.
- f. However, in grey routes for voice and SMS, the PSTN traffic (voice/SMS) is routed into India through International Internet Gateways not PSTN ILD gateways/network as shown in the figure below:



Representation Grey Route in SMS/Voice Traffic

- g. The above figure shows that how the PSTN traffic originated in other country is routed into India through International Internet Gateway. Since, this traffic is pushed on Public Internet, it needs to be somehow routed to an Indian User through the PSTN. Therefore, to route this grey voice traffic from Internet to PSTN, a voice media gateway (illegal

Exchange) uses SIM Box to inject this traffic on to PSTN. In case of grey SMS traffic, SMS mediation server pumps this traffic into PSTN through SMS Aggregators that route it along with other domestic telemarketer SMS traffic.

- h. Even in case of internet telephony permitted only to licensee with Access Services authorization, calls originated by international out roamers from international locations, it is mandatory to handover such calls at international gateway for ILDOs, so as to ensure mandatory requirements of lawful interception and payment of international termination charges are duly complied by all licensees.
- 5. The definition of International Traffic and its representation in the Figure 2.4 in the Consultation Paper do not address the above as they does not make the distinction between the International PSTN and Internet traffic and the regulatory conditions applicable to these (i.e. use of relevant International Gateway, lawful interception and payment of International termination charges)**
6. Notwithstanding our submission that there is no need to prescribe the definitions of domestic and international SMS, we submit that, in case the Authority is keen to define the international SMS, then it should examine the issue in a comprehensive manner, holistically and examine factors such as the cause, method, timing and entity responsible for the SMS instead of simply considering the physical location media gateways/mediation servers. The Authority should also address the issue of SMS mediation that has triggered this consultation.
7. We further submit that the provisions in the licensing and regulatory framework, practical implementation and general understanding prevalent in the sector also support that the SMSs sent through mediation server methods (described above) are International SMSs. It would also be important to reconsider the interpretation of applicable laws reproduced herein below:
8. In this regard, definition of Telecommunication Service in the TRAI Act, states as below:

*‘telecommunication service’ means service of any description (including electronic mail, voice mail, data services, audio tex services, video tex services, radio paging and cellular mobile telephone services) **which is made available to users** by means of any transmission or reception of **signs, signals, writing, images and sounds or intelligence of any nature, by wire, radio, visual or other electro-magnetic mean**;*
9. In the above definition, it is stated that Telecommunication Service ‘**is made available to users’** i.e. **it is the users who make use of the Telecommunication Service to convey signs, signals, writing, images and sounds or intelligence of any nature.**

10. Furthermore, in the Indian Telegraph Act, 1885, 'message' and 'telegraph' are defined as below:

"telegraph" means any appliance, instrument, material or apparatus used or capable of use for transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, visual or other electro-magnetic emissions, Radio waves or Hertzian waves, galvanic, electric or magnetic means.

"message" means any communication sent by telegraph, or given to telegraph officer to be sent by telegraph or to be delivered.

11. The combined and harmonious reading of the definition of Telecommunication Services (in TRAI Act) and of 'message' and 'telegraph' (in Indian Telegraph Act) makes it clear that Telecommunication broadly refers to conveyance of information (i.e. signs, signals, writing, images and sounds or intelligence) from **one user to another**.
12. **However, if SMSs transmitted through mediation method are classified as domestic SMS, it would contradict the broad definitions enshrined in the applicable laws.** The above definitions are based on fundamental principle of flow of information between the users and the proxy or mediation solutions cannot be exploited to circumvent the fundamental principles behind these definitions.
13. In view of the above, we submit that **International SMS needs to be specifically defined as per TSP COPs or alternatively as below:**

International SMS is a short message service enabling text message to be transferred and/or originated by any data, application, system, servers, handset device or terminal device etc. which influences, generates, control, facilitate or enable the generation, dissemination, transmission or transition of messages through a communication network process, including partial process, from a location outside the territory of India or a text message originated by handset device or terminal device located in India to such application, system, servers etc located outside India prompted in response to a short message by such data, application, system, servers etc. . Any mediation solution in India shall not impact and/or change the nature of such International SMS to national/domestic SMS.

14. Further, in case Authority decides to define International Traffic, we believe that it needs to be defined broadly on the basis of **only the location of actual users between whom information transfer takes place and should specifically prohibit usage of any kind of proxy or mediation servers to circumvent the licensing requirement.** This will comply

with the broad interpretation of definition of Telecommunication Services (in TRAI Act) and of 'message' and 'telegraph' (in Indian Telegraph Act).

15. Furthermore, it is crucial to consider the practical implementation and general understanding prevalent in the sector while determining the definitions of international and domestic traffic. The existing arrangements have been able to address the requirements and concerns of both consumers and service providers. It is essential to maintain stability and continuity in the telecommunication ecosystem by preserving the existing definitions, which have proven to be effective in managing and regulating international and domestic traffic. Moreover, it is imperative to ensure that any revised definitions explicitly prohibit the use of proxy or mediation servers as a means to circumvent licensing requirements or regulatory oversight. By doing so, we can effectively prevent any potential misuse or abuse of the telecommunication infrastructure while upholding the integrity of the regulatory framework. We believe that preserving the existing definitions, along with specific measures to address concerns related to proxy or mediation solutions, would be in the best interest of the industry and the overall telecommunication ecosystem.
16. It would also be not out of place to mention here that no Indian customer is affected by the prevailing dispensation as it is a B2B transaction and internationally accepted practice. For, instance, when Indian banks send notification to their NRI customers using similar cloud-based solution, the in-country TSPs treat such SMS as international SMS.

Q3. Since the terms 'Inter circle traffic' and 'Intra circle traffic' are already defined in the telecommunication service license agreements, whether there is still a need to define the term 'domestic traffic' in the telecommunication service license agreements? If yes, what should be the definition of the term 'domestic traffic'? Kindly provide your response with a detailed justification.

RJIL Response:

We emphasized once again that there is no requirement to further categorise traffic as international or domestic, as the existing arrangement has proven to be effective. Therefore, we submit that the existing definitions of Inter circle traffic and Intra circle traffic in the license agreements are adequate and have been serving the purpose thus far. As a result, there is no necessity to establish a separate definition for Domestic Traffic.

Q4. Whether there are any other issues/ suggestions relevant to the subject? If yes, the same may kindly be furnished with proper justification.

RJIL Response:

No Comments