



RJIL/TRAI/2016-17/584  
5<sup>th</sup> September 2016

To,

**Shri Arvind Kumar,  
Advisor (Broadband & Policy Analysis),  
Telecom Regulatory Authority of India,  
Mahanagar Doorsanchar Bhawan,  
Jawaharlal Nehru Marg,  
New Delhi - 110002**

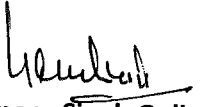
**Subject: Comments on TRAI's Consultation Paper on 'Internet Telephony (VOIP)  
(Consultation Paper No. 13/2016 dated 22.06.2016).**

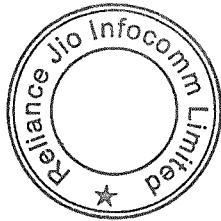
Dear Sir,

Please find attached comments of Reliance Jio Infocomm Limited on the issues raised in the Consultation Paper on 'Internet Telephony (VOIP)' (Consultation Paper No. 13/2016 dated 22.06.2016).

Thanking You,

Yours sincerely,  
For **Reliance Jio Infocomm Limited**,

  
**Kapoor Singh Guliani**  
Authorised Signatory



Encl.: As above.

**RJIL Response to the TRAI Consultation paper on**  
**“Internet Telephony (VoIP)”**

**General Comments:**

1. At the outset, we thank the Authority for issuing this consultation paper on ‘Internet Telephony (VoIP)’ to deliberate on issues arising out of, and including the licensing, technical and regulatory issues associated with the internet telephony. We appreciate the Authority’s recognition of the need to redefine the boundaries of Internet Telephony services when convergence and OTT services are redefining markets and blurring boundaries between networks and content.
2. However, we would like to point out that the unrestricted Internet telephony is already permitted in India to access service providers licensed under the Unified License with Access service Authorization, Unified Access Services License and Cellular Mobile Telecom Service, as also acknowledged by the Authority in the consultation paper para 3.5 and 3.6.

*3.5 The present regulatory framework permits Unified Access Service Licensee (UASL), Cellular Mobile Telecom Service (CMTS) licensees and Unified Licensee to provide voice services within country. They have been permitted to provide unrestricted Internet Telephony. The relevant clauses of UASL and CMTS licenses are reproduced below:*

*Clause 2.2 (a) (i) of UASL*

*“... Access Service Provider can also provide Internet Telephony, Internet Services and Broadband Services. If required, access service provider can use the network of NLD/ILD service licensee.”*

*Clause 2.1 (a) of CMTS License*

*“... The Licensee can also provide Internet Telephony, Internet Services and Broadband Services. If required, the Licensee can use the network of NLD/ILD service licensee ...”.*

*Clause 2.1 (a) (i) of UL*

*“.....The Licensee can also provide Internet Telephony, Internet Services including IPTV, Broadband Services and triple play i.e. voice, video and data. While providing Internet Telephony service, the Licensee may interconnect Internet Telephony network with PSTN/PLMN/GMPCS network.....”*



*3.6 Internet telephony in the above license has been defined as “Internet Telephony” Means “Transfer of message(S) including voice signal(S) through public Network”.*

3. Further, we submit that as the unrestricted Internet telephony is a legitimately permitted voice service under the scope of all the prevalent access services licenses, there is no need to redefine the general provisions like interconnection, allocation of numbering levels etc. for such services offered under the said licenses and the prevailing provisions including IUC charges should be applicable.
4. The only issues that are not covered under the present regulatory framework pertaining to internet telephony are the possibility of permitting unrestricted internet telephony to the Internet service providers (ISP) and OTT providers and the regulatory framework thereof. With respect to allowing unrestricted Internet telephony to ISP, we would like to point out that the Authority has itself addressed this issue in para 3.11 of the consultation paper. The Authority has noted that the issue of permission of unrestricted telephony to ISPs is also already addressed post implementation of Unified License regime, as now there are no prohibitive financial or other restrictions for the ISPs in migrating to Unified License with access services authorization and thereby offering the unrestricted Internet telephony. We are reproducing the relevant para as herein under.

*4.11 Since then, there have been significant changes in licensing framework of the country. Now allocation of Spectrum has been delinked with the grant of License. Unified license has been introduced with entry fee of Rs 15 crore for whole country. Therefore any ISP or new service provider who is willing to provide unrestricted Internet Telephony can obtain Unified License with authorization for Access services. Further, some existing access licensee are also planning to start Internet Telephony service. Unrestricted internet telephony to Unified Licensee only with authorization of access services will also ensure that only serious players would provide Internet Telephony. Therefore it is for the consideration of stakeholders that whether there is still need for permitting unrestricted telephony to Internet service providers (ISP) or they may be facilitated to migrate to Unified License with authorization of Access services if they wish to provide unrestricted Internet Telephony.*

Thus the ISPs can easily migrate to Access services authorization and in case they wish to provide the unrestricted internet telephony service under the existing license, they may be permitted to do so in commercial arrangement with Access service providers.



5. Further, another area of discussion that remains to be addressed under this consultation paper is how to accommodate the possibility of unrestricted internet telephony offered by the unregulated Over the top (OTT) service providers and how to ensure that the national security issues are not compromised while making these services unrestricted by ensuring legal intercept without putting unnecessary and prohibitive shackles on these services. Another aspect that the Authority may delve into is the quality of service parameters for these services as this may be the only differentiator with the traditional telephony as the Internet telephony will always depend on the public internet which, by its very intrinsic nature is dependent on multiple local factor besides the number of active users at a particular time.

**Internet Telephony provided by OTT Players:**

- (i) The social media, instant messaging and Internet telephony are three most popular OTT applications world over. In fact, with the advent of technology and ever increasing proliferation of broadband, RJIL is firmly of the view that Internet Telephony enabled OTT services can deliver genuinely new and innovative features, and will go way beyond in than delivering communication services rather than traditional telecommunication services. The known new features of Internet Telephony include presence awareness, nomadic usage, collaborative working (e.g. voice + video + file sharing), interactive multiplayer gaming, etc. Therefore, in many senses Internet Telephony is not a replacement of plain old telephony but an enhancement of it and the features of Internet Telephony will not be substitutable by the traditional circuit-switched telephony.
- (ii) For India, where the government is looking at increasing the pace of broadband penetration to succeed in enabling programmes like 'Digital India' and 'Smart Cities', etc. Internet Telephony has the potential of being that one clutter breaking application that will connect more Indians to the internet. The value proposition of Internet Telephony lies in the fact that upon being motivated by Internet Telephony, more and more people proactively seek out broadband access. This will also greatly benefit the population which is getting connected for the first time. In fact, one of the major challenges for the growth of the Internet, and particularly that of broadband, is the lack of that one simple, cost-effective application whose value can offset the entry challenges related to the acquisition cost of the broadband access device (e.g. smartphone) and also trumps the challenges of language, literacy & the user not being that IT-savvy. Unrestricted Internet telephony has the potential to assume that role, because of its costing and its capability to survive on any internet access. It can motivate more people to use internet &



broadband and be the harbinger of developmental changes that depend on connectivity and information access.

- (iii) The advent of smart phones and 3G / 4G technologies has brought a paradigm shift in internet telephony. Many applications were developed which were providing in-app and circuit switch networks connected voice telephony practically for free, the consumer only had to bear the data charges. Many telecom carriers internationally launched their own internet telephony applications to counter this. Consequently, many models of internet telephony have been developed.
- (iv) There are primarily the following categories of Internet Telephony products that are being or will be offered:
  - a. **Shared Controlled Access-** Internet Telephony services are supplied by a Telecom operator using its own servers (thereby complying with Lawful Interception and Monitoring (LIM) requirements) with no exclusive control over the transport layer infrastructure. However, the telecom operator routes all calls through its own core network. This is akin to the internet telephony already permitted under the Unified License and needs no additional regulatory framework.
  - b. **Access Independent of controls-** In this case the access points are not at all in control of the service provider and in fact the service merely needs internet to function and typically the service providers do not offer any access points. Common examples of this are the OTT communication services. These services however have the limitation of being accessible only to in-app community and the obvious unavailability of LIM. These services will be more useful if they can be terminated on PSTN and that can be facilitated by making suitable provisions where these services tie-up with service providers to offer access.

**6. Regulatory Framework for Internet Telephony- International Perspective:**

- a. Internationally, the regulators have taken different approaches in dealing with Internet Telephony. The EU directives impose a minimum set of obligations on all providers of electronic communications services including Internet Telephony, stating that:

*“With the specific exception of those operators that are designated as USO providers, the model in the EU framework is that a service provider has the commercial freedom to offer services that qualify him as ECS and hence operate within the rights and obligations that*



*apply to a provider of electronic communications services; or offer services that qualify him as PATS, and hence operate within the rights and obligations that apply to a provider of publicly available telephone services.”*

- b. At national level in Europe the debates were mainly on about whether the providers of VoIP-enabled services will be forced to meet the PATS (publicly available telephone services) obligations, with the majority of the countries agreeing on certain relaxations owing to the intrinsic nature of VOIP in the context of the capabilities of the technology, the cost of deployment and the new market developments.

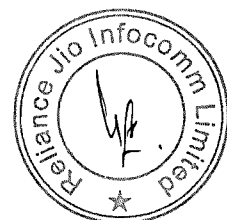
The major obligations under discussion have been:

- License fees and USO levies
- Access to Emergency Services
- Interoperability
- Interconnection
- Security
- Call records
- Number Portability
- Accessibility

- c. There is another aspect of the emerging partnership between the OTT services and telecom service providers in Europe. The Body of European Regulators for Electronic communications (BEREC) in its January 2016 report has noted this emerging partnership the Electronic communication services (ECS) and OTT services and its possible benefits to both OTT and ECS providers stating

*“6.5 Conclusions on partnerships*

*Partnerships between ECS and OTT providers have become more common in recent years and the area will likely continue to evolve in different ways in the near future. As ECS providers continue to look for revenues beyond traditional voice services, partnerships with different OTT providers may become increasingly attractive to help boost data traffic or to get a competitive edge through differentiation and added value to end users. Although differences in how and between whom partnerships materialize are likely to persist, due to competition and local variations in demand, more similarities may also be expected to show as the current experimentation starts to show what works well and what*



*does not. OTT providers, acting on a generally competitive market, are probably likewise interested in partnerships that enable them to promote their brand and their service by making it easier for users to find and have access to it.”*

- d. While FCC has made the general obligations of the TSPs also obligatory on the VOIP providers with some technology based adjustments. The FCC guide on VOIP states that

***“How does the FCC regulate VoIP?”***

***911 Services:*** Providers of "interconnected" VoIP services – which allow users generally to make calls to and receive calls from the regular telephone network – do have 911 service obligations; however, 911 calls using VoIP are handled differently than 911 calls using your regular telephone service.

***Portability:*** The FCC requires interconnected VoIP providers and telephone companies to comply with Local Number Portability (LNP) rules.

***Calling Records:*** The FCC limits interconnected VoIP providers' use of customer proprietary network information such as your telephone calling records, and requires interconnected VoIP providers to protect it from disclosure.

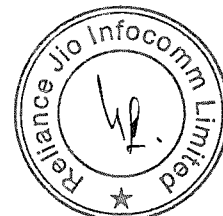
***Universal Service:*** The FCC requires interconnected VoIP providers to contribute to the Universal Service Fund, which supports communications services in high-cost areas and for income-eligible telephone subscribers.

***Accessibility:*** Interconnected VoIP providers must contribute to the Telecommunications Relay Services Fund used to support the provision of telecommunications services to persons with speech or hearing disabilities and offer 711 abbreviated dialing for access to relay services. Providers and equipment manufacturers also must ensure their services are available to and usable by individuals with disabilities, if such access is achievable.”

Thus, the international opinion is in line with Indian regulations treating unrestricted internet telephony at par with traditional Voice telephony and consequently mandate similar obligations barring some specific cases of technological hindrances. On partnership of OTT and Licensed TSP, the regulators are taking a wait and watch approach without mandating any rules as of now.

**7. Regulatory Framework for OTT Internet Telephony in India:**

- a. **Licensing:** The Unified License already has a provision for unrestricted Internet Telephony under the access service authorization, therefore the ideal way to implement unrestricted internet telephony by OTT/ISPs is by obtaining access service authorization by these



operators. However, in order to accelerate broadband penetration, unrestricted internet telephony by the OTT/ISP can be promoted by a simpler implementation wherein these providers to enter into commercial arrangements with telecom service providers having Access Service Authorization for terminating their calls on PSTN/PLMN networks.

- b. **Interconnection:** The Unified License in its present form covers the aspect of mandatory interconnection in the all type of networks, including unrestricted Internet telephony network. The following clause can be referred

*“6.2 It shall be mandatory for the LICENSEE to interconnect to / provide interconnection to all eligible Telecom Service Providers (eligibility shall be determined as per the service provider’s License Agreement and TRAI’s determinations/orders/regulations issued from time to time) to ensure that the calls are completed to all destinations. Further, the Licensor may direct the Licensee to implement the process whereby the subscribers could have a free choice to make inter-circle/ international long distance calls through NLD/ ILD Operator.”*

*“INTERCONNECTION is as defined by the TRAI in its relevant regulations.”*

*“SERVICE means collection, carriage, transmission and delivery of messages over Licensee’s network in Service Area as per authorization under this License.”*

*TRAI defines INTERCONNECTION as ““Interconnection” means the commercial and technical arrangements under which service providers connect their equipment, networks and services to enable their customers to have access to the customers, services and networks of other service providers.*

From above provisions, it can be clearly seen that all services that are as per the scope of Service defined in the respective License get covered under the existing Interconnection regime. The same shall also be applicable for the unrestricted Internet Telephony offered by the OTT/ISPs in collaboration with access service providers.

- c. **Numbering Levels:** As per the prevailing licensing conditions, use of E.164 numbering for Internet Telephony calls has only been permitted for the Unified Licensee having Access Service Authorization. Internet telephony is akin to mobile services. **Thus the use of E.164 mobile Numbering Scheme can also be extended to the internet telephony offered by the OTT/ISP players when in a commercial arrangement with an access service provider.**



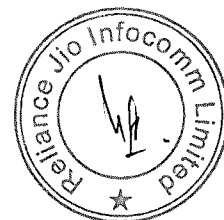


d. **Suggested regulatory obligations:** We suggest the following obligations should be mandatory for the OTT internet telephony service providers in India.

- **Customer on boarding and CAF Audits:** Generally the OTT service providers use the mobile number already available with the subscriber or a virtual number assigned by them and consequently these providers remain outside the purview of CAF requirements, however, in case these service providers are offering unrestricted Internet Telephony in collaboration or under a commercial arrangement with an Access service provider then the responsibility of customer onboarding compliances shall remain with the Access service Provider.
- **Lawful Interception and Monitoring:** The unrestricted Internet telephony service offered by OTT providers under a commercial arrangement with an Access service provider should come under the purview of LIM requirements as applicable for other access service providers and the responsibility of LIM compliances shall remain with the Access service Provider.
- **Call Detail Records and Location:** The unrestricted Internet telephony service providers may be obligated to provide call detail records to the security agencies as per the applicable CDR formats for the Internet Telephony service.
- **Access to Emergency services:** The unrestricted Internet telephony service providers may be obligated to provide access to the Government Emergency services however the limitations in providing location of subscribers may be given due consideration in this case.

In case the OTT service providers or ISPs wish to provide unrestricted Internet Telephony services independently then they may be asked to acquire/migrate to Unified License with access services authorization.

- Internet Telephony is nothing but a means to provide telephony services, therefore other conditions applicable for protection of interest of subscribers in mobile telephony services like MNP, DND, usage details notifications etc. shall also be applicable for Internet Telephony.



**8. Conclusion:**

- 1. The unrestricted Internet Telephony service is already permitted under the Unified License with Access services authorization/ UASL/CMTS licenses and therefore the relevant terms and conditions of respective licenses are applicable as it is a valid voice service under the scope of License.**
- 2. The unrestricted Internet Telephony by the ISPs / OTTs may be allowed only if they migrate to the Unified License with Access services authorization or they offer this service under a commercial arrangement with an existing Access service provider.**
- 3. There is a need to promote the innovative services like OTT internet telephony.**
- 4. The Authority shall endeavour to provide an enabling regulatory framework to promote unrestricted Internet Telephony offered by OTT players under commercial arrangements with Unified License with Access services authorization/ UASL/CMTS licenses**
- 5. There is no need to have provisions on numbering resources, interconnection, IUC etc. separately for unrestricted Internet Telephony offered by OTT or any other players in collaboration with an Access services licensee.**

9. Keeping in light the aforesaid backdrop, the queries raised in the Consultation Paper are answered as follows:

**Issue wise Comments:**

**Q1: What should be the additional entry fee, Performance Bank Guarantee (PBG) and Financial Bank Guarantee (FBG) for Internet Service providers if they are also allowed to provide unrestricted Internet Telephony?**

**RJIL Response:**

1. As mentioned in the General comments, TRAI in its recommendations on 'Issues related to Internet Telephony' dated 18th August 2008 recommended to the Government that ISPs should also be permitted to provide unrestricted Internet Telephony. However, these recommendations of TRAI were not considered by the Government at that point of time.
2. Further, if we compare the access service vis-à-vis ISP licence, there is significant difference in terms of scope, obligations and investment made (or required to be made)



by these licensees. Allowing both these kind of service providers to provide the same service despite one (ISP) not having to invest at the same scale as the other (Access Service Provider) is not equitable. Just prescribing additional entry fee, Performance Bank Guarantee (PBG) and Financial Bank Guarantee (FBG) is not sufficient to remove the advantage to ISPs in this regard.

3. It must be noted that unrestricted internet telephony is already permitted under the scope of Access Services authorization in the Unified License and post delinking of license from the spectrum, there is no obstacle or financial hindrance that should prevent the internet service providers from obtaining the Access services authorisation. Further, the prevailing financial requirements for access services authorisation are no way onerous and any ISP interested in offering Internet telephony shall comply with the same.
4. Therefore, in view of the above, ISPs should not be allowed to provide unrestricted Internet Telephony under their existing license and instead all aspiring providers of unrestricted Internet telephony (including existing ISPs) should be mandated to apply for/migrate to the access services authorization of Unified Licence or offer these services under a commercial arrangement with a Access services licensee.

**Q2: Point of Interconnection for Circuit switched Network for various types of calls is well defined. Should same be continued for Internet Telephony calls or is there a need to change Point of Interconnection for Internet Telephony calls?**

**RJIL Response:**

1. As per the prevailing interconnection framework, the existing circuit switched POI were prescribed keeping in view the SDCA based distributed, time consuming and inefficient hierarchy of Fixed network. In the era of Unified Licence and new technologies, wherein even fixed networks are continuously being replaced by IP based networks, such an arrangement is completely redundant at present. There is immediate need to review the prevailing interconnection framework, not only from the perspective of Internet telephony but the POIs should be redefined even for the fixed line and mobile services, as well. However, as we have said earlier also, Internet Telephony is akin to mobile services, therefore, for the purpose of interconnection, it should be treated same as Mobile Networks.
2. In this context, it is also submitted that for the Unified Licensee having PAN India networks, there should not be necessity of LSA based segmentation of the network, and the requirement to route the traffic through NLDO should be done away with. This is in



line with the convergence of networks as envisaged in the NTP'2012. National Telecom Policy -2012 sets out the vision to provide secure, reliable, affordable and high quality converged telecommunication services anytime, anywhere for an accelerated inclusive socio-economic development. Relevant strategies provided in the NTP are as follows:

*3.1 To orient, review and harmonise the legal, regulatory and licensing framework in a time bound manner to **enable seamless delivery of converged services in a technology and service neutral environment. Convergence would cover:***

**3.1.1 Convergence of services i.e. convergence of voice, data, video, Internet telephony (VoIP), value added services and broadcasting services.**

*3.1.2 Convergence of networks i.e. convergence of access network, carriage network (NLD/ILD) and broadcast network.*

**3.1.3 Convergence of devices i.e. telephone, Personal Computer, Television, Radio, set top boxes and other connected devices.**

3. Interconnection of the Internet telephony network with PSTN/PLMN/GMPCS networks is already permitted under the Unified License having authorization of access services and all voice traffic can be terminated by an Unified Licensee having authorization of access services on the existing Point of Interconnection (POI), irrespective of this being an Internet telephony traffic or otherwise. In order to facilitate convergence, till such time prevailing Interconnection framework gets suitably amended in line with the strategies of NTP'2012, the current POI for various calls should continue to be applicable for the unrestricted internet telephony offered by OTT players in collaboration with Unified Licence having authorization of access services.
4. In case of OTT / ISP service providers are interested in offering unrestricted telephony to its users, they can make commercial arrangements with a licensed service provider as suggested in general comments and offer their services, another option can be by leveraging the transit facility available to Access service providers and National Long Distance service providers to terminate calls to PSTN. The partnering access provider can be made responsible for LIM requirements for all OTT/ISP Internet Telephony calls carried on its network. This will obviate the need of defining new interconnection norms for these service providers as the Access service provider under its current license is anyhow permitted to terminate Internet Telephony calls on its existing POIs with other service providers. Additionally, in case a service provider has existing interconnection with other service providers and wishes to add the unrestricted Internet telephony layer in its network, its current interconnect arrangements should suffice.



5. It is pertinent to note here that despite Authority's recommendations to explicitly permit IP interconnection having been accepted by the Government by issuing necessary amendment to the Unified License, the resistance to upgrading to new technology persists. Therefore in order to realize the universal IP based interconnection, we request Authority to make it mandatory and the TSPs having TDM network should be mandated to bear the cost of requisite media gateways.

**Q3: Whether accessing of telecom services of the TSP by the subscriber through public Internet (internet access of any other TSP) can be construed as extension of fixed line or mobile services of the TSP? Please provide full justification in support of your answer.**

**RJIL Response:**

Internet Telephony is not location specific so it cannot be categorized as fixed line. As already submitted that it should be treated like mobile services.

**Q4: Whether present ceiling of transit charge needs to be reviewed or it can be continued at the same level? In case it is to be reviewed, please provide cost details and method to calculate transit charge.**

**RJIL Response:**

1. The provision of transit of telecom traffic is merely an extension of the facilitation to cover gaps in interconnection and maintain continuity of service. It should not be treated as the substitution of the requirement of establishing POIs by a new service provider with all access service providers. However, it should be leveraged to provide access to OTT service providers.
2. The prescribed ceiling of transit charges is on higher side and therefore it may be reviewed from the present prescribed limit of the less than 15 Paise/min. The Authority may consider to review the transit charges along-with the IUC review exercise, for which consultation paper has already floated by the Authority..

**Q5: What should be the termination charge when call is terminating into Internet telephony network?**

**&**

**Q6: What should be the termination charge for the calls originated from Internet Telephony Network and terminated into the wireline and wireless Network?**



**RJIL Response:**

1. The termination charges of voice calls including the internet telephony calls by the access service providers are very well defined under the prevailing interconnection regulations. As the unrestricted Internet telephony by other providers like OTT and ISP will be provided only in commercial arrangement with Access service providers the termination charges for such calls may be kept same as other calls.
2. However, we reiterate that the best model for termination charges in India remains 'Bill and Keep' (BAK) and the Authority should, be consistent with its earlier position, implement the BAK method.

**Q7: How to ensure that users of International Internet Telephony calls pay applicable International termination charges?**

**RJIL Response:**

It should be the responsibility of the Access Service Provider offering Internet telephony in collaboration with the OTT provider or otherwise to ensure that the international internet telephony calls are terminated in India through a licensed ILDO. This is one major area with possibility of arbitrage therefore the Authority may also mandate financial disincentives in case of willful non-compliance and attempts at arbitrage to this case.

**Q8: Should an Internet telephony subscriber be able to initiate or receive calls from outside the SDCA, or service area, or the country through the public Internet thus providing limited or full mobility to such subscriber?**

**RJIL Response:**

Yes, the entire purpose of internet telephony is that the subscribers, as long as they have an internet connection, should be able to initiate a call. Unrestricted internet telephony should be truly unrestricted and should not be bound by restrictions like being within the SDCA, etc. However, as indicated in our response to Question 7 above, appropriate measures must be taken for Internet Telephony for incoming international calls.

**Q9: Should the last mile for an Internet telephony subscriber be the public Internet irrespective of where the subscriber is currently located as long as the PSTN leg abides by all the interconnection rules and regulations concerning NLDO and ILDO?**



**RJIL Response:**

1. By virtue of the definition of internet telephony, yes, the last mile of the internet telephony subscriber will be public internet. Of course the PSTN leg of the call should comply with all interconnection rules and regulations concerning NLDO and ILDO with minor variances owing to the intrinsic nature of Internet telephony.
2. The voice traffic flow in unrestricted Internet Telephony is not very different from the voice traffic flow in the circuit switched networks. The only difference is that it involves the session border controller (SBC), which is a dedicated hardware device or software application that governs the manner in which phone calls are initiated, conducted and terminated on an Internet Telephony network. All PSTN calls initiated by an unrestricted Internet telephony customer can be handed over at the respective local POIs in the respective service areas post routing through an NLDO. Thus it is in no manner different to the normal offnet inter-circle call for the receiving party.

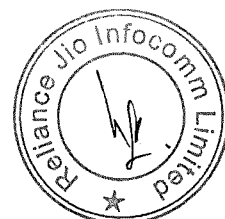
**Q10: What should be the framework for allocation of numbering resource for Internet Telephony services?**

**RJIL Response:**

1. The use of E.164 numbering resource is clearly permitted in the Unified Licence with Access Service authorization. Further, NTP'2012 envisage convergence of services i.e. convergence of voice, data, video, Internet telephony (VoIP), value added services and broadcasting services. Therefore, there is no need to create a separate identification of the internet telephony calls based on the number. The prevailing framework for allocation of numbering resources to Access Service Providers shall be continued for allocation of numbering resources for internet telephony services, as well. This is well defined under the current license conditions wherein only access service providers are allowed this as detailed below:

**a. Unified License with authorization to provide Access Services:**

*"2.1(a) (i) The Access Service under this authorization covers collection, carriage, transmission and delivery of voice and/or non-voice MESSAGES over Licensee's network in the designated Service Area. **The Licensee can also provide Internet Telephony, Internet Services including IPTV, Broadband Services and triple play i.e voice, video and data. While providing Internet Telephony service, the Licensee may interconnect Internet Telephony network with PSTN/PLMN/GMPCS network.** The Licensee may provide access service,*



*which could be on wireline and / or wireless media with full mobility, limited mobility and fixed wireless access.”*

***Clause 2.5: IP Address assigned to a subscriber for Internet Telephony shall conform to IP addressing Scheme of Internet Assigned Numbers Authority (IANA) only. Translation of E.164 number / private number to IP address and vice versa by the licensee for this purpose shall be as per directions/instructions issued by the Licensor.***

**b. Unified License with authorization to provide Internet Services:**

*Clause 2.1 (iii): The Internet Telephony, only as described in condition (ii) above, can be provided by the Licensee. Voice communication to and from a telephone connected to PSTN/PLMN/GMPCS and use of E.164 numbering is prohibited.*

*Clause 2.1 (iv): Addressing scheme for Internet Telephony shall conform to IP addressing Scheme of Internet Assigned Numbers Authority (IANA) only and the same shall not use National Numbering Scheme / plan applicable to subscribers of Basic / Cellular Telephone service. Translation of E.164 number / private number to IP address allotted to any device and vice versa, by the licensee to show compliance with IANA numbering scheme is not permitted.*

From the above, it can be seen that use of E.164 Numbering Scheme, which is applicable to the subscribers of Basic/ Cellular Telephone services as per National Numbering Plan is permitted only to the access service providers. Therefore the OTT/ISP providers opting for commercial arrangements with access service providers should be accorded the same facility.

2. Further, the time is now ripe for moving towards an 11-digit numbering system, as most of the TRAI recommendations for effective utilization have been implemented and it appears that there is not much scope to recycle the numbers any more.
3. Furthermore, in the multi-operator, multiple SIM scenario, the artificial conditions of reaching a threshold limit of the attached VLR in order to apply for additional numbering resources need to be removed as with the advent of 4G service these are required to spread the rollout of broadband, as wireless is the only feasible mode to connect the unconnected.
4. Additionally, the advent of Internet of things (IoT) further entails that more and more numbers will be required by the same set of users.





**Q11: Whether Number portability should be allowed for Internet Telephony numbers? If yes, what should be the framework?**

**RJIL Response:**

1. The basic premise of number portability is to allow a dissatisfied subscriber to change his service provider without changing his mobile number. As the unrestricted Internet Telephony will be provided under the same access service license conditions, there is no need to change portability obligations. Therefore we do not see any case for not providing the same facility to the internet telephony subscribers.
2. As detailed in the General Comments and in response to Q 10 above, use of E.164 numbering resource for internet telephony is clearly permitted in the Unified Licence with Access Service authorization, therefore we do not see any case for not providing the same facility to the internet telephony subscribers.

**Q12: Is it possible to provide location information to the police station when the subscriber is making Internet Telephony call to Emergency number? If yes, how?**

**&**

**Q13: In case it is not possible to provide Emergency services through Internet Telephony, whether informing limitation of Internet Telephony calls in advance to the consumers will be sufficient?**

**RJIL Response:**

1. As discussed in the General Comments, the only mode of providing location information will remain the IP address of the last mile internet access and on this basis the access point of the internet access may be located, this may be the closest possible approximation to the location of the subscriber.
2. The security agencies, even at present are able to utilize the IPDRs to great effect, therefore we do not see this as a major hindrance in provisioning of the internet telephony. However, we reiterate that all the internet telephony providers must be required to fully comply with the lawful interception and monitoring requirements. In this regard, we suggest that the following recommendations from the TRAI's recommendations on 'Issues related to Internet Telephony' dated 18th August 2008 shall be reiterated:



- a. All Service Providers providing Internet telephony within country shall ensure installation of suitable LI equipment in time bound manner as prescribed by DoT.
  - b. Pre-clearance of LI equipment by security agencies shall be required prior to starting of Internet telephony services.
3. The provision of Emergency services has two aspects. Firstly, access to the service area wise emergency number should be mandated as in the case of access services. Secondly, the provisioning the emergency service based on the location information of the subscriber, which may not be possible with a level of accuracy in Internet telephony due to the nomadic use of internet telephony.
4. We believe that the Authority may employ the judicious mix of both the options discussed in the consultation paper. The internet telephony service provider, may be required to transparently communicate that the emergency services may not be available due to in availability of the exact location and simultaneously, the Authority may mandate the routing of emergency services call to appropriate geographically decentralized emergency service centres.

**Q14: Is there a need to prescribe QoS parameters for Internet telephony at present? If yes, what parameter has to be prescribed? Please give your suggestions with justifications.**

**RJIL Response:**

1. We believe that for a service which depends upon public internet as last leg, forceful imposition of requirements of the Quality of Service will tend to be onerous. Anyhow the Internet telephony service providers will have to compete with other Access service providers on quality, therefore they will be required to maintain a certain level of quality.
2. Further, the Authority, may advise the internet telephony service providers to self-regulate for now and reiterate its previous recommendations as
  - a) *QoS on Internet telephony may be left to market forces at present.*
  - b) *The service providers must inform QoS parameters supported by them to their subscribers so that they can take informed decision.*
  - c) *The Authority shall review the decision regarding mandating QoS to Internet telephony service providers at appropriate time.*

**Q15: Any other issue related to the matter of Consultation.**

Nil

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