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THE TELECOMMUNICATION INTERCONNECTION USAGE CHARGES (FOURTEENTH AMENDMENT) REGULATIONS, 2018

(2 of 2018)

TELECOM REGULATORY AUTHORITY OF INDIA

NOTIFICATION

New Delhi, the 12th January, 2018

File No. 10-8/2016-BB&PA --- In exercise of the powers conferred upon it under Section 36, read with sub-clauses (ii), (iii) and (iv) of clause (b) of sub-section (1) of section 11, of the Telecom Regulatory Authority of India Act, 1997 (24 of 1997), the Telecom Regulatory Authority of India hereby makes the following regulations further to amend the Telecommunication Interconnection Usage Charges Regulation, 2003 (4 of 2003), namely:-

1.(1) These regulations may be called the Telecommunication Interconnection Usage Charges (Fourteenth Amendment) Regulations, 2018 (2 of 2018).
(2) They shall come into force from the 1st February, 2018
2. In Schedule I of the Telecommunication Interconnection Usage Charges Regulation, 2003 (4 of 2003), in paragraph 1 in the table under column "Termination Charge", for the words and figures "Rs. 0.53 (paise fifty three only) per minute", the words and figures "Rs. 0.30 (paise thirty only) per minute" shall be substituted.

(S.K. Gupta)
Secretary

Note 1. The principal regulations were published vide F.No. 409-5/2003-FN dated 29.10.2003 (4 of 2003) and subsequently amended vide notifications Nos. --

(i) 409-5/2003-FN dated 25.11.2003 (5 of 2003) (First Amendment);

(ii) 409-5/2003-FN dated 12.12.2003 (6 of 2003) (Second Amendment);

(iii) 409-5/2003-FN dated 31.12.2003 (7 of 2003) (Third Amendment);

(iv) 409-8/2004-FN dated 06.01.2005 (1 of 2005) (Fourth Amendment);

(v) 409-8/2004-FN dated 11.04.2005 (7 of 2005) (Fifth Amendment), which has been set aside by Hon'ble TDSAT vide its Order dated the 21.09.2005 in appeal No. 7 of 2005;

(vi) 409-5/2005-FN dated 23.02.2006 (1 of 2006) (Sixth Amendment);

(vii) 409-5/2005-FN dated 10.03.2006 (2 of 2006) (Seventh Amendment);

(viii) 409-2/2007-FN dated 21.03.2007 (2 of 2007) (Eighth Amendment);

(ix) 409-22/2007-FN dated 27.03.2008 (2 of 2008) (Ninth Amendment);

(x) 409-12/2008-FN dated 09.03.2009 (2 of 2009) (Tenth Amendment);

(xi) 409-8/2014-NSL-1 dated 23.02.2015 (1 of 2015) (Eleventh Amendment);

(xii) 409-8/2014-NSL-1 dated 24.02.2015 (2 of 2015) (Twelfth Amendment);

(xiii) 10-8/2016-BB&PA dated 19.09.2017 (5 of 2017) (Thirteenth Amendment)

Note 2. The Explanatory Memorandum explains the objects and reasons of The Telecommunication Interconnection Usage Charges (Fourteenth Amendment) Regulations, 2018 (2 of 2018).

Explanatory Memorandum to the "The Telecommunication Interconnection Usage Charges (Fourteenth Amendment) Regulations, 2018"

A. Interconnection

1. 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.

2. Interconnection is extremely important from a consumer perspective. Telecom users cannot communicate with each other or connect with services they demand unless necessary interconnection arrangements are in place. Commercial and technical arrangements must be made to facilitate interconnection between network operators. The most important commercial issue for a successful interconnection arrangement is the Interconnection Usage Charge (IUC). A brief description of the various components of IUC is given below.

(1) Domestic Termination Charge

3. Domestic termination charges are the charges payable by an access provider, whose subscriber originates the call, to the access service provider in whose network the call terminates. In a calling-party-pays (CPP) regime, the calling party subscriber pays for the call to his access provider and the calling party's access provider usually pays termination charge to the called party's access provider to cover the interconnection/ network usage cost.

(2) International Termination Charge

4. International termination charges (ITC) are the charges payable by an International Long Distance Operator (ILDO), which is carrying calls from outside the country, to the access provider in the country in whose network the call terminates.

(3) Transit Charge

5. When two telecom networks are not directly connected, an intermediate network is used through which calls are transmitted to the terminating network. Such an intermediate network is known as a transit network and the charges to be paid to the transit network to cover the interconnection/ network usage cost are called transit charges.

(4) Carriage Charges

6. Access providers in India can offer access services <u>within</u> the Licensed Service Areas (LSAs), also known as circles; the inter-circle traffic is required to be routed through a National Long Distance Operator (NLDO). The charges to be paid by an access provider to the NLDO to cover the cost for carrying the inter-circle calls are called carriage charges.

(5) Origination Charges

7. The calling party's access provider collects call charges from the calling party (i.e. his subscriber) as per the applicable tariff. From the amount so collected from the subscriber, the access provider has to pay termination charges to the called party's access provider and carriage charges (in case of an inter-circle call) to the NLDO. The access provider retains the balance amount to cover the cost of originating the call. The amount so retained by the calling party's access provider is called an origination charge. In India, origination charges have not been specified and are under forbearance.

(6) International Settlement Charge

8. International settlement charges are the charges exchanged between foreign service providers and Indian ILDOs for exchanging international traffic. The international settlement charge includes international carriage charge, national carriage charge (if any) and the termination charge applicable in the respective country.

B. Regulatory regime for ITC in India so far

9. Telecom Regulatory Authority of India (hereinafter, referred to as, TRAI or the Authority) established a regulatory framework for Interconnection Usage Charges, including ITC through 'The Telecommunication Interconnection Usage Charges (IUC) Regulation, 2003 (1 of 2003)' dated 24.01.2003. For improving and streamlining the IUC regime further, the Authority issued 'The Telecommunication Interconnection Usage Charges Regulation, 2003 (4 of 2003)' dated 29.10.2003. This Regulation, which superseded the earlier IUC Regulation dated 24.01.2003 and came into effect from 01.02.2004, is the principal IUC regulation in the country as on date. There have been 13 amendments in this regulation since its inception.

10. Through 'The Telecommunication Interconnection Usage Charges Regulation, 2003', the Authority, *inter-alia*, prescribed ITC as Rs. 0.30 per minute. Since then, the Authority has made two revisions in ITC as below:

(a) revision of ITC to 0.40 per minute with effect from 01.04.2009 through the Telecommunication Interconnection Usage Charges (Tenth Amendment) Regulations, 2009; and

(b) revision of ITC to 0.53 per minute with effect from 01.03.2015 through the Telecommunication Interconnection Usage Charges (Eleventh Amendment) Regulations, 2015.

C. The present exercise for review of ITC

11. In 2015-16, the Authority received representations from several International Long Distance operators (ILDOs) requesting intervention of the Authority to set a floor for International carriage charge/ International Settlement Charge so that the stand-alone ILDOs could survive in the telecommunication services market, dominated by the integrated service providers (having both international long distance and access service licenses). With a view to seek views of stakeholders on various aspects of IUC including ITC, the Authority issued a Consultation Paper (CP) on 'Review of Interconnection Usage Charges' dated 05.08.2016 through which, it raised, *inter-alia*, the following questions for stakeholders' comments:

Q7: Which approach should be used for prescribing International Termination Charge in the country? Should it be kept uniform for all terminating networks?

Q8: Whether, in your opinion, in the present regulatory regime in the country, the stand-alone ILDOs are not able to provide effective competition owing to the presence of integrated service providers (having both ILDO and access service licenses) and, therefore, there are apprehensions regarding sustainability of the stand-alone ILDOs in the long-run?

Q9: If your response to the Q8 is in the affirmative, which of the following approach should be used as a counter-measure?

(i) Prescription of revenue share between Indian ILDO and access provider in the International Termination Charge; or

(ii) Prescription of a floor for International Settlement Charge (levied by ILDO upon the foreign carrier) for international incoming calls; or

(iii) Any other approach (please specify)

Please provide justification in support of your response.

12. Stakeholders were asked to submit their written comments on the issues raised in the CP by 05.09.2016 and counter-comments by 19.09.2016. On the request of some stakeholders, the dates for submission of comments and counter-comments were extended upto 17.10.2016 and 31.10.2016 respectively. Written comments were received from five industry associations, 12

telecom service providers (TSPs) and six other stakeholders, including companies, organizations, firms and individuals. Counter-comments were received from four TSPs and one industry association. The comments and counter-comments received from the stakeholders were placed on the TRAI's website– www.trai.gov.in.

13. The Authority wanted to listen to the viewpoints of all TSPs prior to the discussion in an open house. Therefore, a one-day Workshop was held on 18.07.2017 at Delhi to discuss the issues threadbare with the TSPs. Subsequently, an Open House Discussion (OHD) was held on 20.07.2017 at Delhi to discuss the issues with all stakeholders. After examining comments of stakeholders and due deliberations, TRAI issued 'The Telecommunication Interconnection Usage Charges (Thirteen Amendment) Regulation, 2017 (5 of 2017)' on 19.09.2017. Through these Regulations, the Authority made a downward revision in the termination charge for wireless to wireless local and national long distance calls. While issuing the above mentioned regulations, the following was provided in the para 106 of the Explanatory Memorandum to the Regulations dated 19.09.2017:

> *"Another issue raised in the CP was about prescribing International Termination Charge and Prescription of revenue share between Indian ILDO and access provider in the International Termination Charge. The Authority is of the view that there is a need of more deliberation on the issue, and therefore the Authority will issue separate regulation on this issue".*

14. With a view to have a detailed deliberation on the matter of ITC, the Authority held a Workshop with ILDOs, who carry international voice calls to/ from India and access service providers (ASPs), on 16.10.2017. In the Workshop, the Authority provided further opportunity to the stakeholders to submit their views in writing.

15. Thereafter, the Authority, on 27.10.2017, asked all ILDOs who carry voice calls to/ from India to submit information on number of incoming and outgoing ILD voice minutes for the quarter ending September, 2017; and, to all ASPs to submit the information in respect of outgoing ILD voice minutes for the quarter ending September, 2017. Subsequently, the Authority, on 31.10.2017, asked all ASPs to furnish information in respect of incoming ILD voice minutes for the period from 08.11.2017 to 14.11.2017.

16. An analysis of the issues related to ITC, on the basis of the comments of stakeholders received in the consultation process and further deliberations, is being presented below.

D. Analysis of issues related to ITC

(1) Appropriate level of ITC

17. During the consultation process, while many stakeholders contended that ITC should be increased from its present level of Rs. 0.53 per minute, some others argued that ITC should be brought down to the level of domestic termination charge. It is worth mentioning that, at present, the domestic termination charges are as below:

(a) Rs. 0.06 per minute for wireless to wireless calls; and

(b) Zero for wireline to wireless, wireless to wireline and wireline to wireline calls.

18. The stakeholders seeking increase in ITC have supported their view-point with the following arguments:

(a) Argument#1: Low ITC is not good for Indian consumers.

The ITC of Rs. 0.53 per minute prescribed by TRAI is substantially lower than the world average of International Settlement Charge (ISC) which is about Rs. 3.00 to 3.50 per minute. Low level of ITC in India has resulted in a highly skewed pattern of ILD traffic in the country with ratio of ILD incoming traffic to ILD outgoing traffic of about 20:1. Such a skewed ratio of traffic has reduced the ability of Indian operators to negotiate ISC in international markets vis-à-vis their foreign counterparts as the latter have much larger (India incoming) traffic to trade as compared to the (international outgoing) traffic traded by the Indian operators. As a result, the Indian operators have to face a substantially high level of ISC in most countries. In effect, the Indian access providers are not able to provide affordable ISD (international outgoing) services to their customers.

(b) Argument#2: Increase in ITC will benefit the country.

An increase in ITC would result in increased inflow of Forex to Indian operators, which would, in turn, enhance their ability to provide more affordable services to Indian consumers and would also yield increased revenue to the exchequer in the form of License Fee and taxes. The Indian telecom industry earns about Rs. 4,500 crore per annum of Forex for terminating international calls into India; paying License Fee etc. of about Rs. 450 crore. Increase in ITC will provide higher Forex earning for the country, and also, a higher License Fee for the Government. Besides, an increase in ITC will generate additional funds for Indian operators which will aid them in creation of telecom infrastructure in rural areas and act as an enabler to provide affordable tariffs to Indian consumers.

19. The supporters of upward revision in ITC have advocated that ITC should be increased to about Rs. 1 per minute on immediate basis, and, to about Rs.3 to Rs. 3.50 in a phased manner, over a period of the next couple of years to bring it on par with the ISC paid by Indian ILDOs to foreign carriers. Besides, a state-owned TSP has advocated for prescription of 10% higher ITC for calls terminating on wireline networks than that for calls terminating on wireless networks.

20. On the other hand, the stakeholders, who have advocated that ITC should be reduced to the level of domestic termination charge, have furnished the following argument in support of their view-point:

<u>Argument: High ITC will diminish ILD carrier traffic, accelerate the migration to OTT traffic and encourage grey market.</u>

In India, ILD carrier traffic which was exponentially rising in the past has now started showing a declining trend. The main reason for this decline is competition from OTT VoIP services. In 2016-17 in India, total ILD traffic through ILDO carrier route was about 92 billion minutes; however, as per the projections of Ovum Ltd.[1] for 2017, International OTT traffic was more than 100 billion minutes. OTT traffic in India is following the global trends. Globally, OTT services are cannibalizing carrier traffic. As per the estimates of TeleGeography [2], in the year 2015, carrier *plus* OTT combined international global traffic was 970 billion with OTT contributing 520 billion minutes. Impact of OTT traffic could be seen from the fact that international carrier traffic which was growing at 7% CAGR [3] from 2007 to 2014 declined by about 1% in each of the past two years. Propensity of substitution of carrier traffic with OTT traffic is directly related to penetration of high-speed Internet as well as availability of devices, both of which have been increased rapidly in India in the last couple of years. Therefore, continuation of high ITC will accelerate migration of traffic to OTT, which will not only impact overall revenues of Indian access service providers and ILDOs, nullifying any possible short-term gains, but will also be a security hazard. In view of the significant arbitrage opportunity between ITC and domestic rates, high level of ITC will also give rise to growth of the grey market at the cost of national security and revenues of Indian operators. At present, about 20% international incoming calls terminate in India via grey routes. Therefore, lowering of ITC to the cost

[1] Ovum Ltd. is an analyst and consultancy firm.

[2] TeleGeography is a telecommunications market research and consulting firm.

[3] CAGR is acronym of Compound annual growth rate

level will facilitate shift of international incoming traffic from OTT services to ILD carrier and curb the menace of grey market, which will be in the interest of all stakeholders including security agencies.

21. Rebutting the argument that ITC should be lowered to facilitate shift of international incoming traffic from OTT to ILD carrier, the supporters of upward revision of ITC have contended that OTT traffic and carrier traffic are two distinct species; OTT calls are App to App chats and these do not terminate on PSTN/PLMN like carrier traffic; both OTT traffic and carrier traffic in respect of international incoming calls to India have seen an increase in volumes over a period of time; therefore, any reduction in ITC to compete with free OTT services will not be an economically sound proposition. They have also refuted the argument that there is a need for lowering of ITC to curb incidence of grey market. They have stated that various measures and checks could be used to control the incidence of grey market; in any case, UIDAI based e-KYC verification will further reduce occurrence of such incidences. Countering the contention that ITC should be fixed at cost level, the supporters of upward revision of ITC have asserted that such a proposition is fallacious; TRAI has been setting differential rates for domestic termination charges and ITC - while domestic termination charges have been prescribed on the basis of cost, ITC has been non-cost-based since the year 2009 and for valid reasons as enumerated in the Explanatory Memorandum of the IUC Amendment Regulations of 2009 and 2015 respectively.

22. On the other hand, the supporters of reduction in ITC have contradicted the claim that any increase in ITC will save and earn Forex for the country. They have contended that if ITC is revised upwards, the ratio of incoming ILD calls to outgoing ILD calls will get disturbed and in turn, the Forex earnings will also reduce. They have also countered the argument that with Aadhaar based e-KYC, grey markets will no longer be a worry, stating that, for grey market operations, normally fixed-line phones are used for which there is no Aadhaar based e-KYC.

23. From the above description, it is clear that, during the consultation process, the two sets of stakeholders were sharply divided on the matter of the level at which ITC should be prescribed. Simply put, one set of stakeholders has sought an upward revision of ITC claiming that – (a) it would help Indian access providers to offer more affordable domestic tariffs as well as ISD tariffs to their customers, and; (b) it would help generate more Forex to the country as well more revenue to the exchequer. The other set of stakeholders has sought a downward revision of ITC to the level of domestic termination charge claiming that – (a) it would facilitate shift of international incoming traffic from OTT services to ILD carrier, and, (b) it would curb the menace of grey market.

24. Before we begin to examine the issue, it would be worthwhile to mention that for the period beginning from 01.02.2004 upto 31.03.2009, the Authority prescribed ITC on par with domestic termination charge; however, for the period beginning from 01.04.2009, it fixed ITC at a higher level than the domestic termination charge as depicted in the following table.

Table-1: Termination Charges in India Since 2003

S. No.	Period		Domestic Termination Charge (per minute)	International Termination Charge (per minute)	Access Deficit Charge (ADC) to be paid to BSO/BSNL by ILDO (per minute)
	From	To			
1	01.05.2003	31.01.2004	Rs 0.15-0.50	Rs. 0.50	Rs. 5.00
2	01.02.2004	31.01.2005	Rs. 0.30	Rs. 0.30	Rs. 4.25
3	01.02.2005	28.02.2006	Rs. 0.30	Rs. 0.30	Rs. 3.25
4	01.03.2006	31.03.2007	Rs. 0.30	Rs. 0.30	Rs. 1.60
5	01.04.2007	31.03.2008	Rs. 0.30	Rs. 0.30	Rs. 1.00
6	01.04.2008	30.09.2008	Rs. 0.30	Rs. 0.30	Rs. 0.50
7	01.10.2008	31.03.2009	Rs. 0.30	Rs. 0.30	-
8	01.04.2009	28.02.2015	Rs 0.20	Rs. 0.40	-
9	01.03.2015	30.09.2017	Rs 0.14 [4]	Rs. 0.53	-
10	01.10.2017	Till date	Rs 0.06 [5]	Rs. 0.53	-

25. It is worth mentioning that while prescribing differential rates for ITC and domestic termination charge through the Telecommunication Interconnection Usage Charges (Tenth Amendment) Regulations, 2009, the Authority had noted that cost-orientation of charges should not be the sole criteria for fixing ITC, the international termination charges prevalent internationally should also be taken into account; it should also be seen as to what is more advantageous to Indian operators

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4 Through the Telecommunication Interconnection Usage Charges (Eleventh Amendment) Regulations, 2015, the Authority prescribed domestic termination charge of Rs. 0.14 per minute for wireless to wireless calls and zero for wireless to wireline calls, wireline to wireless calls and wireline to wireline calls.

5 Through the Telecommunication Interconnection Usage Charges (Thirteenth Amendment) Regulations, 2017, the Authority prescribed domestic termination charge of Rs. 0.06 per minute for wireless to wireless calls from 01.10.2017 to 31.12.2019 and zero thereafter. The termination charges for wireless to wireline calls, wireline to wireless calls and wireline to wireline calls shall continue to remain zero.

and Indian consumers. Thereafter, when the Authority again prescribed differential rates for ITC and domestic termination charge through the Telecommunication Interconnection Usage Charges (Eleventh Amendment) Regulations, 2015, it had noted that the ITC should be fixed at a level which meets three objectives viz. (a) encourage TSPs to reduce tariffs on outgoing international calls and prevent any pass-through to domestic tariffs of revenue losses arising from the calling card Regulation; (b) prevent the diversion of traffic towards OTT players such as Skype, Viber; and do not create arbitrage opportunity for grey market, (c) neutralize the effect of the foreign exchange rate variations.

26. In this background, the Authority attempted to find answer to the question as to which approach should be used for prescribing International Termination Charge in the country. The Authority observed that it has broadly two options at its hand, viz. (a) to leave ITC under forbearance; or (b) to prescribe ITC keeping in view the reasonable interests of consumers and service providers.

27. The Authority took note of the fact that any incoming call (including international incoming call) is a monopoly of the called party's access service provider (i.e. the access service provider whose customer receives the incoming call). In case ITC is left under forbearance, the called party's access service provider would always try to obtain as high termination charge as possible from the ILDOs, which may lead to a situation of non-settlement, and therefore, non-completion of the call. Accordingly, the Authority has decided not to leave ITC under forbearance and to continue with the practice of prescribing ITC. Having concluded this, the Authority embarked on to the question of arriving at an appropriate level of ITC. Towards this, the Authority attempted to make an analysis of the present day market for International incoming voice traffic in the country while keeping in view the global trends.

28. On the basis of information on outgoing ILD minutes for the quarter ending September, 2017 received from ILDOs, the Authority computed the average ISC paid by Indian ILDOs to foreign carriers in various continents/ country sub-groups as per the following table.

Table-2: International Settlement Charges (ISCs) Payable by Indian ILDOs for ILD Outgoing Calls for Q.E. September, 2017

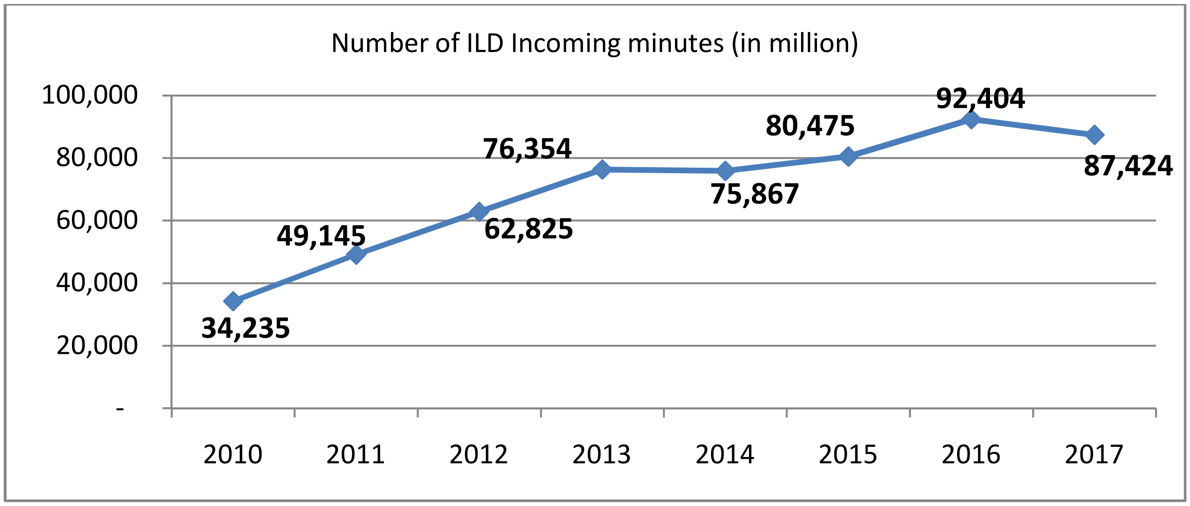
S. No.	Continent/ Country sub-group	Percent of total ILD outgoing traffic from India	Average ISC = Amount payable by Indian ILDOs to foreign carriers (in Rs. Per minute)
1	North America	32%	0.56
2	Asia (Other than Middle East)	27%	3.12
3	Europe	24%	1.25
4	Asia (Middle East)	13%	8.01
5	Africa	2%	9.57
6	Oceania	2%	1.85
7	South America	0.10%	3.91
8	**Global average**		**2.57**

29. The following could be inferred from the information given in above table:
    (a) The global average of ISC (Rs.2.57 per minute) is about five times higher than the present level of ITC in India (Rs. 0.53 per minute).
    (b) The average ISC for North America, in which about 32% ILD minutes originated in India are terminated, is only Rs. 0.56 per minute.
    (c) The average ISC for the Asia, Africa, Oceania and South America, in which about 44% ILD minutes originated in India are terminated, is Rs. 4.76 per minute.

30. Purely on the basis of the afore-cited global average of ISC, one may be tempted to conclude that there is a case for increase in ITC from its current level of Rs. 0.53 per minute to the global average ISC of Rs. 2.57 per minute, as it would help Indian access service providers to earn more revenue to which they can plough in expansion of their networks to improve overall quality-of-service apart from offering affordable tariffs for domestic calls as well as ISD calls. While, *prima facie*, an increase in ITC appears to be beneficial for the Indian access service providers in the short-run, it requires to be seen as to whether such an increase would indeed be advantageous for the Indian telecom sector in the medium-to-long-run in view of the fact that the ILD incoming traffic in India has shown

a declining trend in F.Y. 2017 (period from April, 2016 to March, 2017) as depicted in the following Graph:

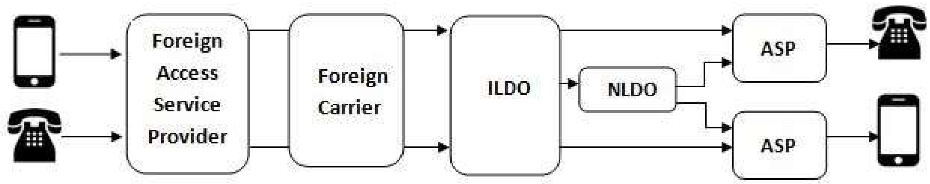
Figure-1: ILD Incoming Voice Traffic in India



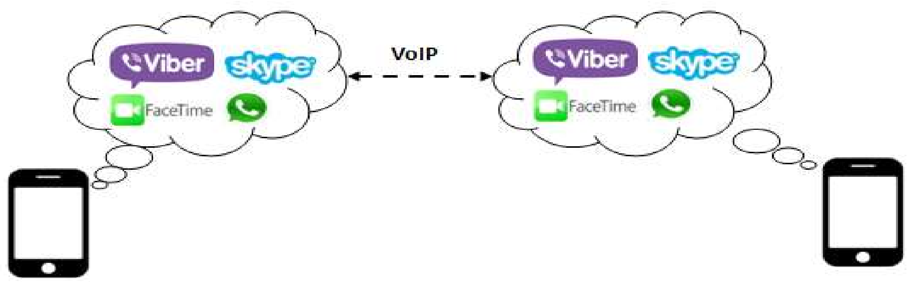
31. As can be seen from the above Figure, the ILD incoming traffic in the F.Y. 2017 was 87,424 million minutes implying that the average quarterly traffic in the F.Y. 2017 was about 21,856 million minutes. It is worth mentioning that as per the information furnished by the ILDOs, the ILD incoming traffic in India for the quarter ending September 2017 (Period from 01.07.2017 to 30.09.2017) was only 19,129 million minutes. Clearly, the ILD incoming traffic has witnessed a further decline in Q.E. September, 2017 of about 12% from the level of average quarterly traffic in F.Y. 2017. It would be useful to examine as to what could be the potential reasons for such a declining trend in ILD incoming traffic brought by Indian ILDOs in India.

32. As a matter of fact, an international incoming voice calls to India may follow any of the following three routes:

(a) **Carrier route:** A customer (calling party) of an access service provider (or a calling card service provider) in a foreign country originates an ILD voice call to India. The foreign access service provider hands over the call to a foreign carrier. The foreign carrier hands over the call to an Indian ILDO. The Indian ILDO, either directly, or through an NLDO, hands over the call to the Indian access service provider of the called party in India. The Indian access service provider makes the call reach to the called party.



(b) **OTT route:** A customer, by using an OTT App (such as Whatsapp, Viber Skype, Facetime etc.) installed on its smartphone, originates a voice chat using data services of its ISP to call a user of the same OTT App in India. The voice chat travels from foreign ISP, through Internet, to the Indian ISP, of which the Indian user is a customer.



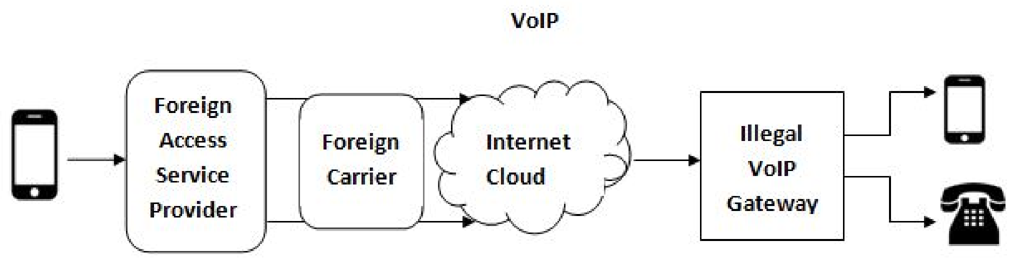
(c) **Grey route:** A customer (calling party) of an access service provider (or a calling card service provider) in a foreign country originates an ILD voice call to India. The foreign access service provider hands over the call to a foreign carrier. In order to bypass the ISC payable to Indian ILDO, the foreign carrier routes the call over Internet. A small party, which, in alliance with the foreign carrier, has set up an illegal VoIP Gateway (i.e. a SIM Box [6] or a PBX, which is connected to Internet at one end and to PLMN/ PSTN at the other end) in India, picks the incoming ILD call through VoIP route on an Internet connection subscribed from an ISP. It then, through a mobile or a landline connection subscribed from an Indian access service provider, routes the call to the called party's telephone. The greyness in this operation arises from the twin factors viz. –

(i) the VoIP Gateway installed by the party interconnects Internet with PSTN/ PLMN networks, which is not permitted, at present, by the Department of Telecommunications, Government of India; and

(ii) an international incoming call is made to appear as if it were a domestic incoming call (to exploit the arbitrage opportunity between the level of ITC and tariff for domestic

[6] A SIM box consists of an array of Subscriber Identity Module (SIM) cards subscribed from various access service providers.

calls in India) which is illegal and poses security threat as it masks the original CLI of foreign customer and replaces it with a CLI of a domestic telephone.



33. From the above description, it is clear that both OTT route and grey route act as substitutes of the carrier route for carrying international voice traffic. The extent of substitution could be estimated from the following inputs:
   (a) As per the estimates of TeleGeography, worldwide, the cross-border OTT traffic constituted about 50% of the combined volume of carrier and OTT international traffic in the year 2016.
   (b) As per industry estimates, about 20% of ILD calls terminate in India through grey route.

34. The twin facts viz. (a) carrier route for carrying international incoming voice traffic is facing a fierce competition from OTT route and grey route; and (b) international incoming voice traffic through carrier route has begun to decline from F.Y. 2016-17, together suggest that any increase in ITC is likely to result in a sharper decline of international incoming voice traffic on carrier route. Clearly, given the global traffic trends demonstrating stagnation or decline in international carrier traffic, the case for increasing ITC, from the present level of Rs. 0.53 per minute, is weak, at present.

35. The Authority further attempted to examine as to what should be level of ITC to safeguard the international carrier traffic from the onslaught from its substitutes viz. OTT route and grey route. The Authority observed that there are certain nuanced differences between these two substitutes. In case of both carrier route and grey route, the international voice call is originated in the network of PSTN/ PLMN provider of a foreign country. On the other hand, in OTT route, the international chat is originated, through an OTT App, in the network of an ISP of a foreign country. While the choice to use grey route in place of carrier route lies with the foreign carrier, the choice to use OTT route lies with the calling subscriber in foreign country. While a foreign carrier puts the grey route to use purely for saving cost of delivery of ILD voice call viz. to bypass ISC and to exploit the arbitrage opportunity between ITC and domestic call tariffs in India, adoption of OTT route has various other drivers such as availability of high-speed Internet, penetration of smartphones, penetration of a single OTT app in both the foreign country as well as in India apart from cost incentives to the

foreign customer (i.e. to avoid high tariff for international voice call through inexpensive tariff for data).

36. Owing to the twin facts viz. – (a) menace of grey route poses serious security threat to the country apart from causing significant leakage in the revenue accruable to the country and its TSPs, and, (b) proliferation of OTT route for the carrying international voice traffic has many non-cost factors, the Authority is of the view that, while deciding on the appropriate level of ITC in the country, curbing the menace of grey route should be a more important regulatory priority than facilitating the shift of the international incoming traffic from OTT route to carrier route.

37. Essentially, the players engaged in carrying international incoming voice traffic to India through grey route thrive on the significant arbitrage opportunity presently available between the ITC, on one hand, and, tariff for domestic voice call in India *plus* the cost of running illegal VoIP Gateway, on the other. At present, while ITC is Rs. 0.53 per minute, the average tariff for voice call [7] is about Rs. 0.23 per minute in the country. Besides, there would be certain cost, albeit small, for running an illegal VoIP Gateway. It is expected that if the arbitrage opportunity is plugged or kept to a minimum, the attractiveness of the grey route for carrying international incoming voice traffic would be lost, and thereby, the carrier route for international incoming traffic would witness a legitimate growth. This would not only plug the leakages in the revenue accruable to the country and Indian TSPs, but would also ensure that India continues to earn precious Forex from the International incoming voice traffic business. Accordingly, keeping in view the comments of the stakeholders and the foregoing analysis, the Authority has decided to revise the termination charge for international incoming call to wireline and wireless from Rs. 0.53 per minute to Rs.0.30 per minute. The Authority is of the view that, with this revision, the arbitrage opportunity between ITC and domestic call tariffs would become so insignificant that illegal VOIP Gateway business in India would become unviable; in turn, the grey market for ILD incoming traffic would eventually cease to exist.

(2) Apprehensions regarding sustainability of the stand-alone ILDOs

38. A majority of stakeholders, who are integrated service providers (having both ILDO and access service licenses in India), have submitted that the stand-alone ILDOs are able to compete quite effectively in the market and there should not be any apprehensions regarding sustainability of the stand-alone ILDOs in the long-run. They have further argued that about 30% market-share is held

[7] As per TRAI's Report titled 'The Indian Telecom Service Performance Indicators (July-September, 2017), the average subscriber outgo per outgoing minute from Home Service Area (HSA) for GSM and LTE Services in Quarter Ending September, 2017 was Rs.0.23 per minute.

by stand-alone ILDOs which indicates that stand-alone ILDOs are already flourishing and therefore, there is no need to provide any regulatory protection to the stand-alone ILDOs. A state-owned TSP has contended that the investment made by the stand-alone ILDOs is much smaller than that made by access service providers in India; at the same time, the earnings of ILDOs are much more from foreign carriers at international rates for ILD incoming calls. Another stakeholder has stated that in case the Authority still decides to prescribe a floor for the International Settlement Charge (ISC) then it may consider deciding a revenue share regime between Indian ILDOs and access providers in respect of the ITC, in proportion to the costs incurred by the respective operators in terms of the investments made in networks deployment.

39. On the other hand, several stakeholders including stand-alone ILDOs have submitted that the integrated service providers tend to cross-subsidize international incoming calls, offer predatory prices to foreign carriers, sometimes below cost levels; the stand-alone ILDOs lose out because they are not able to match such predatory prices. Many of such stakeholders have contended that, in order to protect the interests of stand-alone ILDOs, a floor for ISC, levied by Indian ILDO upon the foreign carrier, should be prescribed for ILD incoming calls and the revenue collected should be shared, in the ratio of 80:20, between Indian ILDO and access service provider.

40. On the basis of the information on ILD incoming minutes for the quarter ending September, 2017 provided by the ILDOs, the Authority computed the percent share of integrated ILDOs and Stand-alone ILDOs in the market and also the average ISC in India as follows:

Table-3: Market Share of Integrated and Stand-Alone ILDOs and Average ISC for ILD Incoming Traffic in India in Q.E. September, 2017

S. No.	Type of ILDO	Number of ILD minutes carried in Q.E. September 2017 (in Billion)	Percent market share (in terms of ILD incoming traffic)	Average ISC = Amount receivable by ILDOs from foreign carriers (in Rs. per minute)
1	Integrated ILDOs [8]	13.47	70%	0.60 [9]
2	Stand-alone ILDOs [10]	5.66	30%	0.57 [11]

41. From the above information, it could be inferred that the stand-alone ILDOs command a robust market share of 30% in the international incoming voice traffic market. If a stands-alone ILDO hands-over international incoming call directly to access service providers, without going through NLDOs, it can retain about Rs. 0.04 per minute.

42. It is understood that the ability to command market share and to negotiate ISC from foreign carriers is influenced by the number of Points of Presence (POPs) of an ILDO in India as well as in foreign countries. The twin facts viz.- (a) stand-alone ILDOs command a robust market share in ILD incoming traffic, and, (b) the ILDO segment is relatively much less capital intensive than the access service segment, - together, seem to suggest that the charges retainable by stand-alone ILDOs in ILD incoming calls are not low.

43. It is worth mentioning that when the matter of prescription of ISC came up for consideration before the Authority during the IUC review exercise of 2014-15, the Authority had examined the matter and

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8 Integrated ILDOs comprise of Aircel, Bharti Airtel, BSNL, IDEA Cellular, Reliance Communications, RJIL, and Vodafone.

9 One Integrated ILDO did not furnish information on amount receivable from foreign carriers. Accordingly, the average ISC for integrated ILDOs has been computed on the basis of information furnished by the remaining integrated ILDOs.

10 Stand-alone ILDOs comprise of Citycom, P3, Sify, Tata Communications and Videocon.

11 As per the information furnished by one stand-alone ILDO, it receives average ISC of Rs. 1.05 per minute from foreign carriers. As this number is much higher than the ISC of the remaining stand-alone ILDOs, average ISC for stand-alone ILDOs has been computed on the basis of information furnished by the remaining stand-alone ILDOs (excluding the outlier mentioned above).

had concluded that prescription of any settlement rate between Indian ILDO and foreign carriers is not appropriate.

44. On the basis of the comments of stakeholders and the foregoing analysis, the Authority is of the view that there is no need for prescribing any floor for ISC or a revenue share between Indian ILDO and access service provider in the ITC.

E. Review

45. The Authority would closely monitor the trends and patterns of ILD voice traffic in the country. The Authority, if it deems necessary, may review ITC from time to time.