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**THE TELECOMMUNICATION INTERCONNECTION USAGE CHARGES (TWELFTH AMENDMENT) REGULATIONS, 2015
(2 of 2015)**

**TELECOM REGULATORY AUTHORITY OF INDIA
NOTIFICATION
New Delhi, the 24th February, 2015**

File No. 409-8/2014-NSL-I ----- 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:-

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| 1. (1) These regulations may be called the Telecommunication Interconnection Usage Charges (Twelfth Amendment) Regulations, 2015. |
| (2) They shall come into force on the 1 st day of March, 2015. |
| 2. In Schedule II of the Telecommunication Interconnection Usage Charges Regulation, 2003 (4 of 2003), in paragraph (a), in Table-I, for words and figure " Rupees 0.65 per minute ", words and figure, " Rupee 0.35 (thirty five paise) per minute " shall be substituted. |

**(Sudhir 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-I dated 23.02.2015 (1 of 2015) (Eleventh Amendment).

Note 2. The Explanatory Memorandum explains the objects and reasons of The Telecommunication Interconnection Usage Charges (Twelfth Amendment) Regulations, 2015 (2 of 2015).

Explanatory Memorandum to “The Telecommunication Interconnection Usage Charges (Twelfth Amendment) Regulations, 2015”

Framework for IUC in India

1. The framework of Interconnection Usage Charges was established by the Authority through ‘The Telecommunication Interconnection Usage Charges (IUC) Regulation, 2003 (1 of 2003)’ dated 24.01.2003. This Regulation became effective from 01.05.2003. A revised IUC regime was notified through ‘The Telecommunication Interconnection Usage Charges Regulation, 2003 (4 of 2003)’ dated the 29.10.2003 superseding the earlier Regulation. This Regulation came into effect from 01.02.2004. In these Regulations the carriage charges were distance-based.
2. The Authority notified an amendment Regulation dated 23.02.2006, through which a ceiling on carriage charges was fixed. The change in the carriage charge regime provided a strong basis to the telecom service providers (TSPs) to reduce long-distance tariffs and to offer uniform STD tariffs across the country.
3. Subsequently, another IUC review was conducted in 2008-09. Based on the detailed consultation process, the Authority notified a revised IUC regime on 09.03.2009 which became effective from 01.04.2009. Through the revised regime, the ceiling carriage charge of Re. 0.65 per minute was continued and the transit carriage charge was revised and reduced from Re. 0.20 per minute to Re. 0.15 per minute.
4. To review the IUC regime, the Authority initiated this review of the IUC regime in the country in November, 2014.
5. As a precursor to the exercise, the Authority asked wireless access providers, wire-line access providers and NLDOs through letters of 30.04.2014 and 05.06.2014 to submit information related to network

usage and costs. Subsequently, the Authority issued a Consultation Paper (CP) on IUC dated 19.11.2014 to seek the views of stakeholders on various aspects of IUC. Stakeholders were asked to submit written comments by 11.12.2014 and counter-comments by 18.12.2014. On the request of some stakeholders, the dates for submission of comments and counter-comments were extended up-to 22.12.2014 and 29.12.2014 respectively. Written comments were received from two industry associations, 15 TSPs and 47 other stakeholders, including companies, organizations, firms and individuals. Counter-comments were received from six TSPs and one individual. The comments and the counter-comments received from the stakeholders were placed on the TRAI's website- www.trai.gov.in. An Open House Discussion was held on 09.01.2015 in Delhi with stakeholders. In the CP dated 19.11.2014, the Authority had sought the views of stakeholders on the various issues related to Mobile Termination Charge (MTC), Fixed Termination Charge (FTC), International Termination Charge (ITC), domestic carriage charges and transit carriage charges.

6. The Authority has issued an amendment to the IUC regulation on MTC, FTC and ITC on 23.02.15. Hence, this Regulation deals with the remaining IUC components i.e. Carriage Charge, Transit Charge and Transit Carriage Charge.

(1) Domestic Carriage Charge

7. Access licensees in India can offer access services within the Licensed Service Area (LSA). Inter-LSA calls have to be routed through a National Long Distance Operator (NLDO). The charges to be paid by a TSP to the NLDO to cover the cost for carrying inter-LSA calls are called carriage charges.

8. In the principal Regulation of 29.10.2003, the carriage charges for long distance calls within India, were specified as Re. 0.20, Re. 0.65, Re. 0.90, Rs. 1.10 per minute for the slabs of 0-50 Kms., 50+ to 200 Kms., 200+ to 500 Kms. and above 500 Kms. respectively. On the specified carriage charges, TSPs were allowed to negotiate a value within +/- 10% of the long distance call carriage charges.
9. The carriage charges were reviewed and the Regulation of 23.02.2006 stipulated a ceiling of Rs 0.65 per minute. These charges were reviewed again in 2008-09 and the Authority decided to retain the ceiling of Rs.0.65 per minute.
10. In the CP, a specific question was raised on the methodology for determining the domestic carriage charge. Stakeholders were also requested to provide their comments on the need for a separate carriage charge ceiling for some specific geographic regions, and how these geographic regions could be identified.
11. During the consultation process, service providers were generally of the view that there is no need for introducing asymmetric carriage charges for different geographic regions and the charge should be uniform across the country irrespective of region. Most service providers submitted that the ceiling of the domestic charge should be reduced. Some service providers submitted that it should continue to be at 65 paise per minute. These service providers contended that the continuation of the present ceiling of 65 paise will cater to all geographic regions as well as specific geographic regions on a mutual agreement basis. Many other stakeholders argued that the ceiling of 65 paise per minute was fixed in 2006; since then, with the increase in competition in the NLD segment as well as in NLD traffic, the cost of carriage has come down. Associated costs have also reduced substantially over time on account of economies of scale, improvements in network architecture, and advances in network

equipment. Service providers who argued for a reduction in the ceiling on carriage charges, suggested carriage charges varying between 8 paise per minute and 30 paise per minute.

12. The comments and suggestions made by the stakeholders have been carefully examined. The Authority is of the view that domestic carriage charges to be paid by the TSP to the carriage network (i.e. NLDO) for carrying inter-LSA voice traffic should be based broadly on the principle of work done by the NLDOs. Further, the ceiling of 65 paise for carriage charge was fixed in 2006. Thereafter, many developments have taken place (as referred to in para 11 above). New TSPs have entered the NLD segment. NLD traffic has increased significantly. The increase in traffic and the resultant lowering of costs cannot be ignored. Therefore, the Authority is of the view that there is a strong case to review the carriage charge.
13. The prevailing rate of carriage charges in the market was also taken into account. It was observed that there is a large variation i.e., some NLDOs offer carriage charges as low as 9 paise per minute while a few others charge at the ceiling rate, i.e., 65 paise per minute. The difference in rates reflects both the different levels of competition in certain dense traffic routes vis-à-vis other routes, and also the relative inelasticity of prices for traffic to remote locations. At the same time, prices that are near or equal to the ceiling charge point to the perverse incentive available to TSPs, especially those that are vertically integrated, to book higher revenues from NLDO operations that are not subject to levy of spectrum usage charges (SUC) unlike access service licences. The potential misuse of a high ceiling is another reason prompting a review of the carriage charge regime.

14. To analyse the matter further, the profits of major NLDOs were examined¹. The profitability of the top 6 NLDOs [measured by minutes carried as well as adjusted gross revenue (AGR), other than BSNL²] for their voice operations were computed. It was found that their PBIT margin (PBIT/AGR) is 38-91% (Table-6).

Table-6: PBIT margins of top 6 NLDOs

Sl.No.	Service provider	PBIT margin
1.	NLDO-1	74%
2.	NLDO-2	86%
3.	NLDO-3	91%
4.	NLDO-4	78%
5.	NLDO-5	38%
6.	NLDO-6	55%

15. Using the information provided in the Accounting Separation Reports (ASRs), further analysis was undertaken. The carriage cost per minute of top 7 NLDOs including BSNL (based on minutes carried as well as AGR), which together carried around 96% of NLD traffic in 2013-14, was assessed. The cost per minute (Capital Expenditure plus Operating Expenditure) of these 7 NLDOs ranges between 3 paise per minute and 84 paise per minute and the average carriage charge is about 31 paise per minute. For the entire industry (11 NLDOs), the average carriage charge is about 30 paise per minute.

16. It was noted that the average for the industry excluding BSNL was about 21 paise per minute. One of the reasons for the higher cost of carriage in the case of BSNL is that BSNL carries a significant amount of traffic to remote and rural areas. At the same time, unreasonable costs emanating from the legacy network and employee and operating costs booked

¹The analysis was done for 11 NLDOs carrying voice traffic, covering about 99% of the market by minutes carried as well as AGR.

²The Annual Report 2013-14 of BSNL indicates that the revenues from basic services and CMTS services are distributed to NLD (and ILD) segments on the basis of a formula adopted during 2010-11. In the absence of actual revenue information for the segment, BSNL has not been included in the calculation in Table 6.

against NLDO operations are also responsible for higher carriage costs reported by BSNL. In response to a previous consultation paper on IUC issued by TRAI on 27.04.2011, BSNL had submitted that the cost of providing carriage services in rural areas generally comes to about 1.5 times of the cost of providing carriage to other areas.

17. In this backdrop, the following methodology has been used for calculation of domestic carriage cost of the NLDOs carrying inter-LSA voice traffic (carriage of calls):
 - a) Fully Allocated Costing methodology has been followed.
 - b) Data from Accounting Separation Reports³ for the year 2013-14 related to revenue, costs and capital investment in NLD service and other reports/returns submitted by TSPs have been used in the costing exercise.
 - c) In the domestic carriage cost computation, costs incurred on the product “voice” have been considered. Costs incurred on non-voice related products i.e. leased circuits and others, have not been considered while calculating the carriage cost.
 - d) Sales and marketing costs (along with other relevant costs) incurred by NLDOs have also been considered relevant in the computation of carriage charge. Since a TSP is free to decide on the NLDO for carrying of its inter-LSA traffic, sales and marketing costs form part of relevant costs.
 - e) Data in Accounting Separation Reports of NLD service does not provide segregated revenue and costs of voice services for different distances of domestic carriage (for example, metro-LSA to metro-LSA or to remote location in less developed LSAs such as North East LSA). Therefore, the computation of the carriage cost per minute has been

³ Submitted by TSPs in compliance to The Reporting System on Accounting System Regulations, 2012 (7 of 2012).

arrived at for India as a whole irrespective of the distance the call is carried.

- f) The sum of the relevant costs and return on capital employed (RoCE) at 15% has been divided by the minutes carried by NLDOs, to derive the carriage cost per minute which is denoted below:

$$\text{Carriage Cost Per Minute} = \frac{X_1 + X_2}{Y_M}$$

(without LF)

Where

X_1 represents operating costs;

X_2 is return on capital employed at 15% and;

Y_M represents minutes carried by NLDOs.

- g) License fee (8%) has been loaded on the carriage cost per minute [computed in (f) above] to arrive at the total carriage cost per minute to be paid by the access service provider to the NLDOs:

$$\text{Carriage Cost Per Minute} = \frac{\text{Carriage Cost per minute (without LF)}}{(100 - \text{LF rate})}$$

(including LF)

- h) Based on the above methodology, the industry carriage cost per minute excluding BSNL comes to 21 paise. When BSNL is included, the average carriage cost comes to about 30 paise as shown in the following Table:

Table-7

(Rs. in crore)

Particulars	Industry
(A) Operating Costs (including depreciation)	7603
(B) Capital Employed	28878
(C) Return on Capital Employed (RoCE) @ 15%	4332
(D) Total Cost including RoCE(A+C)	11935
(E) Minutes carried by NLDOs (in crore)	42680
(F) Carriage Cost (including RoCE) per minute (in paise)...(D/E)	28
Carriage Cost per minute after loading LF (8%) (in paise)	30

18. Taking into account the earlier submission of BSNL (see para 16), the average cost of providing carriage services for rural and remote areas could be taken as 1.5 times of 21 paise per minute which comes to about 32 paise per minute. In this context, one option available is to fix a separate, higher ceiling for rural and remote areas. However, the Authority noted that fixing two separate ceilings would make carriage of calls to rural and remote areas costlier in practice, and further disincentivise calls to these areas. Hence, the Authority decided to set a single ceiling for NLD carriage, albeit with a markup, to reckon for any variations that could arise due to averaging or from differing cost allocations by TSPs as indicated in para 17 above. The Authority notes that a ceiling charge provides enough headroom and flexibility for TSPs to set actual interconnection prices in accordance with the work done, after taking into account market considerations.
19. The Authority is of the view that since carriage charges are regulated through a ceiling and NLDOs have to operate in a competitive NLD market for acquiring business (NLD traffic), it would be reasonable to fix the ceiling for carriage charges at 35 paise per minute (after giving a mark-up of about 10% on the carriage costs derived above).
20. Carriage charges play an important role in determining the long distance (STD) tariffs. In view of impending technological changes including full migration to IP in the core network, the carriage cost structure is also likely to change. Hence, the Authority has decided that it shall review the carriage charges regime two years after it has been in force, i.e., the review will be undertaken and concluded in financial year 2017-18.

(2) Transit carriage charge

21. According to the present regulatory framework intra-LSA mobile traffic from all TSPs to fixed lines of BSNL is being handed over at the Level-II

TAX in the fixed line network of BSNL. From Level-II TAX to SDCA level traffic is being carried by BSNL for all TSPs and BSNL levies a regulated charge of 15 paise per minute on the TSPs. The CP raised a specific question with regard to segregating of cost data of transit carriage from BSNL's ASR along with the method and costing details for estimating the transit carriage charge.

22. The TSPs are generally of the view that there should not be any transit carriage charge as the beneficiary operator (BSNL) has indicated the point at which it will accept a call terminating on its network; it can only recover a termination charge. Once the call has been handed over to the terminating operator, the concept of any additional transit carriage charge does not arise. These TSPs further submitted that BSNL does not provide POIs at any SDCA and has declared Level-II as the only point for termination for intra-circle calls from mobile to fixed line of BSNL. One service provider submitted that if the charge for usage of access network (whether mobile or fixed) for a call is already determined (i.e. fixed termination charge) there should not be a separate charge for the same service, just because a point of handover is unilaterally decided by BSNL. These TSPs further submitted that the Authority should either (a) direct BSNL to provide connectivity at all terminating points (SDCA), failing which level-II should be treated as the handover point of termination; or (b) allow the access providers to use private NLDOs for their intra-circle long distance calls for terminating at SDCA. Some service providers including BSNL submitted that the cost of providing transit carriage charge cannot be separated in the ASR since distance-based data is not captured in the ASR. One TSP has estimated a cost-based transit carriage charge of 2 paise per minute taking into account the recent ceiling fixed by TRAI for domestic leased circuits (DLC). The service provider further submitted that BSNL is shifting from its old switches to IP switches which would further reduce the transit carriage charge.

23. The Authority noted that the primary issue in transit carriage charges is the point of handing over of intra-LSA mobile to fixed call. A number of service providers have also focused on the point of handing over of these calls, than on the applicable charges. The Authority also noted that the question of handover of various types of calls is the subject matter of licensing conditions and other determinations of TRAI on interconnection. The present IUC Regulation deals only with the applicable charges, including for transit carriage. The Authority noted that the handover of intra-LSA mobile to fixed call was prescribed by the TRAI determination dated 08.01.2001. Subsequently, in 2001/2002, a similar clause was also inserted in the Cellular Mobile Telephone Service License. The relevant para of TRAI's determination dated 08.01.2001 is as follows:

“Para 7 the normal routing hierarchy for all types of inter-circle and inter-network calls is to handover the calls to a Level-I TAX, which in turn routes the incoming traffic lower down the hierarchy i.e. to Level-II and then to the local network at the SDCA level. This normal hierarchy should be followed for calls originated in mobile network and terminated in a fixed network. However, for traffic terminating in the LDCA, the gateway MSCs may at the request of the interconnection seeker, be directed connected to Level-II TAXs, i.e. bypassing Level-I TAX, in order to give the cellular operator greater flexibility and smoother flow of traffic. POIs below TAX and tandem level may also be provided with mutual agreement.”

24. In effect, the condition governing the handover of these calls has become a part of the CMTS license condition. Subsequently, however, the UAS and UL licenses did not contain this stipulation; nevertheless, since a number of CMTS licences were in operation, this condition was not revisited by the Authority. Significant time has elapsed since the determination of the point of handover of these calls. Further, TSPs have time and again requested the Authority to change the point of handover of intra-LSA mobile to fixed calls. The Authority is of the view that the primary issue of handover of these calls needs to be settled first. Since

the present Regulation is limited to prescribing the relevant charges, the Authority does not propose, at this juncture, to review/ amend the existing Regulation with respect to transit and transit carriage charge. The Authority shall issue a separate Consultation Paper to determine the point of handover of these calls.