Telecom Regulatory Authority of India

Notification

New Delhi, the 24th January 2003

No.311-1/2003-Econ

In exercise of the powers conferred upon it under section 36 read with clauses (ii), (iii) and (iv) of sub section (b) of Section 11 (1) of the Telecom Regulatory Authority of India Act, 1997 as amended by TRAI (Amendment) Act, 2000, to fix the terms and conditions of interconnectivity between Service Providers, to ensure effective interconnection between different service providers and to regulate arrangements amongst service providers of sharing their revenue derived from providing telecommunication services, the Telecom Regulatory Authority of India hereby makes the following Regulation**.**

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THE TELECOMMUNICATION INTERCONNECTION USAGE CHARGES (IUC) REGULATION, 2003 (1 of 2003)

Section I

Title, Extent and Commencement

1. Short title, extent and commencement:

(i) This Regulation shall be called "The Telecommunication Interconnection Usage Charges (IUC) Regulation 2003" (The Regulation).

(ii) The Regulation shall cover arrangements among service providers for payment of Interconnection Usage Charges, for Telecommunication Services, covering Basic Service which includes WLL (M) services, Cellular Mobile Service Providers and Long Distance Operators throughout the territory of India.

(iii) The Regulation shall be deemed to have come into force from the date of notification in the official Gazette.

Section II

Definitions

2. In this Regulation, unless the context otherwise requires:

(i) “Act” means the Telecom Regulatory Authority of India, 1997 as amended by TRAI (Amendment) Act, 2000.

(ii) “ADC” means Access Deficit Charge.

(iii) “Authority” means the Telecom Regulatory Authority of India.

(iv) “BSO” means the Basic Service Operator.

(v) “Ceiling(s)” mean(s) the upper limit(s) of a charge specified by the Authority.

(vi) “Floor” means the lower limit of a charge specified by the Authority from time to time below which such charges may not be offered.

(vii) “Forbearance” means that the Authority has not, for the time being, notified any charge for a particular telecommunication service and the service provider is free to fix any charge for such service.

(viii) "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.

(ix) "Interconnection Charge" means the charge for interconnection levied by an interconnection provider on an interconnection seeker.

(x) “Interconnection Usage Charge (IUC)” means the charge payable by one service provider to one or more service providers for usage of the network elements for origination, transit and termination of the calls.

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(xi) "Interconnection Provider" means the service provider to whose network an interconnection is sought for providing telecommunication services.

(xii) "Interconnection Seeker" means the service provider who seeks interconnection to the network of the interconnection provider.

(xiii) “International Subscriber Dialing” (ISD) means direct interconnection between an end user in India with another end user in another country by means of direct dialing through public networks.

(xiv) “National Long Distance Operator (NLDO)” means the Operator providing National Long Distance (NLD) Service.

(xv) "Order" means the Telecommunication Tariff Order, 1999 as amended from time to time.

(xvi) “Originating Network” means the network to which an originator of a telecommunication message (voice and non-voice) is proximately connected to.

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(xvii) “Originating/ Transit/ Terminating Service Provider” means the service provider whose network is used for originating/ transit/ terminating a telecommunication message (voice and non-voice) respectively.

(xviii) "Regulation" means The Telecommunication Interconnection Usage Charges (IUC) Regulation 2003.

(xix) “Reporting Requirement” means the obligation of a service provider to report to the Authority at least 45 working days before implementing any new Interconnection Usage Charge for telecommunication services under this Regulation and any changes thereafter.

(xx) "Set Up Costs of Interconnection" means the initial cost of any system up-gradation needed to provide the specific interconnection facilities requested.

(xxi) "Subscriber Trunk Dialing" (STD) means direct interconnection between two end users within India by means of direct dialing through the public long distance networks.

(xxii) "Terminating Network" means the network to which a receiver of a telecommunication message (voice and non-voice) is proximately connected to.

(xxiii) "Transit Network" means the network through which telecommunication messages (voice or non-voice) from originating networks or other transit networks are transmitted and delivered to terminating or other transit networks.

(xxiv) "Usage Charge" means the charge levied by a service provider for carriage of telecommunication traffic on its network, i.e. for use of its network elements.

(xxv) "WLL (M)" means limited mobility telephony service using wireless in local loop technology within a Short Distance Charging Area.

(xxvi) Words and expressions used in this Regulation and not defined herein but defined in the Act shall have the same meanings assigned to them in the Act.

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Section III

3. Interconnection Charges

Interconnection Charges shall continue to be governed by "The Telecommunication Interconnection (Charges and Revenue Sharing) Regulation, 2001(5 of 2001)", except to the extent modified by this Regulation.

Section IV

4. Interconnection Usage Charges (IUC)

The Interconnection Usage Charges are specified in Schedules hereto.

Schedule I –	Schedule Of Origination & Termination Charges for Long Distance Calls i.e. Inter-SDCC Calls Routed through one or more TAXs
Schedule II –	Schedule For Carriage Charges For Long Distance Calls
Schedule III -	Schedule for Inter-network intra-circle calls between Fixed and Cellular Table – A: Metro Networks Table – B: Circle Networks
Schedule IV –	Schedule for Inter-Network Intra-Circle calls between WLL (M) and Cellular Table – A: Metro Networks Table – B: Circle Networks
Schedule V –	Schedule for Inter-Network Intra-Circle calls between WLL (M) and Fixed Table – A: Metro Networks Table – B: Circle Networks
Schedule VI -	Schedule for International Long Distance Calls
Schedule VII –	Fixed to Fixed Local Calls between two Basic Service Providers

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(i) Unless specifically provided in the Schedules to this Regulation, the Authority forbears with respect to other Interconnection Usage Charges.

(ii) IUC values have been specified in the Regulation. For long distance calls beyond 50 Kms involving Fixed Line, the Service Providers are allowed to negotiate a Spot IUC value within +/ - 10% of the IUC value specified in the Regulation. The spot value of IUC as specified or negotiated shall be applicable for both incoming as well as outgoing traffic between operators, for the use of identical network elements.

(iii) In the event spot value of IUC mentioned in (ii) above is not arrived at within 45 days from the date of such request, either party will approach TRAI with the details of their network element costs and traffic particulars for a determination in the matter. Pending such a determination, the IUC value specified in the Regulation shall be applicable. Under the normal circumstances, TRAI would provide its determination within 30 days of the receipt of all relevant inputs from both the service providers.

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(iv) The date of effect for actual implementation of IUC shall be 1st April 2003.

(v) The existing revenue sharing arrangement or Interconnection Usage Charges arrangement, if any, between the Interconnecting networks shall hold good only up to 31st March, 2003 in respect of the items as specified in the Regulation.

(vi) All existing interconnect agreements/arrangements as on date shall stand amended on 1st April, 2003 so as to conform to the present framework of the IUC regime and these shall be submitted to TRAI for registration by 16th April, 2003, and for subsequent changes as per reporting requirement.

(vii) Values specified in this Regulation shall be applicable for all Reference Interconnect Offers by Significant Market Players (SMPs).

Section V

5. Reporting Requirement

(i) All service providers shall comply with the Reporting Requirement as defined in Section II in respect of Interconnection Usage Charges specified for the first time under this Regulation, as also all subsequent changes, subject to the provisions of paragraph 4(vi) above.

(ii) No service provider shall alter any Interconnection Usage Charge or any part thereof, without complying with the Reporting Requirement.

(iii) In respect of matters covered by the provisions of the Regulation, they shall have an overriding effect over any Regulations, Directions, Determinations, Orders of the Authority, Reference Interconnect Offers and existing Interconnect agreements/arrangements between Service Providers.

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Section VI

6. Review

(i) The Authority may, from time to time, review and modify Interconnection Usage Charge.

(ii) The Authority may also at any time, suo moto, or on reference from any affected party, and for good and sufficient reasons, review and modify any Interconnection Usage Charge.

Section VII

7. Explanatory Memorandum

This Regulation contains at Annex A, an explanatory memorandum to provide clarity and transparency to matters covered under this Regulation.

Section VIII

8. Interpretation

In case of dispute regarding interpretation of any of the provisions of this Regulation, the decision of the Authority shall be final and binding.

By Order

(DR. HARSHA VARDHANA SINGH)
Secretary-cum-Principal Advisor

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SCHEDULE – I

Origination & Termination Charges per minute for LONG DISTANCE Calls i.e. Inter-SDCC Calls Routed through one or more TAXs

Amount in Rupees per minute payable to	Cost in Rs. Per minute for	Intra Circle & Inter Circle up to 50 Kms	Intra-Circle (Above 50 and up to 200 Kms)	Intra Circle (Above 200 Kms)	Inter-Circle (Above 50 and up to 100 Kms)	Inter-Circle (Above 100 and up to 200 Kms)	Inter-Circle (Above 200 and up to 500 Kms)	Inter-Circle (Above 500 Kms)
Originating Access Provider								
(a) Fixed	Origination	0.15 for Inter-Circle and 0.25 for Intra-Circle	0.50	0.50	0.50	0.50	0.50	0.50
	Differential ADC	Nil	0.50	1.25	0.50	0.50	1.25	2.00
	Uniform ADC	Nil	0.50	1.50				
	Total at Originating end with differential ADC	0.15 for Inter-Circle and 0.25 for Intra-Circle	1.00	1.75	1.00	1.00	1.75	2.50
	Total at Originating end with uniform ADC	0.15 for Inter-Circle and 0.25 for Intra-Circle	1.00	2.00				
(b) WLL (M)	Origination	Forbearance						
(c) Cellular	Origination	Forbearance						
Terminating Access Provider								
(a) Fixed Line	Termination	0.15 for Inter-Circle and 0.25 for Intra-Circle	0.50	0.50	0.50	0.50	0.50	0.50
	Differential ADC	Nil	0.50	1.25	0.50	0.50	1.25	2.00
	Uniform ADC	Nil	0.50	1.50				
	Total at terminating end with differential ADC	0.15 for Inter-Circle and 0.25 for Intra-Circle 0.15	1.00	1.75	1.00	1.00	1.75	2.50
	Total at terminating end with uniform ADC	0.15 for Inter-Circle and 0.25 for Intra-Circle	1.00	2.00				
(b) WLL (M)	Termination	0.50						
(c) Cellular	Termination	For calls from Basic Service Rs 0.30 per minute in Metro and Rs. 0.40 per minute in Circles and NIL Incoming Air Time						

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SCHEDULE - II

SCHEDULE FOR CARRIAGE CHARGES FOR LONG DISTANCE CALLS

Distance Slabs	0 to 50 kms.	50 to 200 kms.	200 to 500 kms.	Above 500 kms.
Transit Carriage Charge per minute in Rs.	0.20	0.45	0.75	1.10

Notes: Following issues are relevant for all the Schedules in the Regulation

1. National / Intra-Circle Long Distance Carrier has to pay the Origination and Termination Charges as per Schedule I in addition to the recovery of his transit charge for call carriage on his network. Difference between Retail Tariff and IUC, i.e., mark-up may be shared between the operators involved in call carriage and origination/termination.

2. For Intra-circle calls between Fixed Networks and Cellular Networks, Schedule III is applicable. For Intra-circle calls between WLL (M) Networks and Cellular Networks, Schedule IV is applicable. Generally in Metros, the call hand-over is at Tandem Exchanges and in case of Circles at Trunk Automatic Exchanges (TAXs).

3. For all Inter-network Inter-circle calls and intra circle calls above 50 Kms, Schedule I is applicable.

4. The category "Metro" is defined for places where Cellular Mobile Operator has a Metro License.

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SCHEDULE – III

SCHEDULE FOR INTER-NETWORK INTRA-CIRCLE CALLS BETWEEN FIXED AND CELLULAR

TABLE – A

(METRO NETWORKS : Call Charges Rs. 1.20 per 90 seconds for calls originating from Fixed Line of Basic Service Network.)

	Direction of call	
	FIXED TO CELLULAR MOBILE	CELLULAR MOBILE TO FIXED
IUC for Origination per minute in Rs.	Residual	Tariff Forbearance
IUC for Termination per minute in Rs.	0.30	0.50

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TABLE – B

(CIRCLE NETWORKS : Call Charges Rs. 1.20 per 60 seconds for calls originating from Fixed Line of Basic Service Network.)

	Direction of call	
	FIXED TO CELLULAR MOBILE	CELLULAR MOBILE TO FIXED
IUC for Origination per minute in Rs.	Residual	Tariff Forbearance
IUC for Carriage per minute in Rs. through TAX	0.20	0.20
IUC for Termination per minute in Rs.	0.40	0.60

SCHEDULE IV

SCHEDULE FOR INTER-NETWORK INTRA-CIRCLE CALLS BETWEEN WLL (M) AND CELLULAR

TABLE – A

(METRO NETWORKS)

	Direction of call	
	WLL(M) TO Cellular Mobile	Cellular Mobile TO WLL(M)
IUC for Origination per minute in Rs.	Tariff Forbearance	Tariff Forbearance
IUC for Termination per minute in Rs.	0.30	0.30

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TABLE – B

(CIRCLE NETWORKS)

	Direction of Call	
	WLL(M) TO CELLULAR MOBILE	CELLULAR MOBILE TO WLL(M)
IUC for Origination per minute in Rs.	Tariff Forbearance	Tariff Forbearance
IUC for Carriage per minute in Rs. through TAX	0.20	0.20
IUC for Termination per minute in Rs.	0.40	0.40

SCHEDULE V

SCHEDULE FOR INTER-NETWORK INTRA-CIRCLE CALLS BETWEEN WLL (M) AND FIXED LINES

TABLE – A

(METRO NETWORKS)

	Direction of call	
	Fixed TO WLL (M)	WLL(M) TO Fixed
IUC for Origination per minute in Rs.	Residual	Tariff Forbearance
IUC for Termination per minute in Rs.	0.30	0.50

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TABLE – B

(CIRCLE NETWORKS)

	Direction of Call	
	Fixed TO WLL (M)	WLL (M) TO Fixed
IUC for Origination per minute in Rs.	Residual	Tariff Forbearance
IUC for Carriage per minute in Rs. through TAX	0.20	0.20
IUC for Termination per minute in Rs.	0.40	0.60

SCHEDULE – VI

Schedule for International Long Distance Calls

Access Deficit Charge for both Incoming as well as Outgoing Calls from International Long Distance Calls shall be Rs. 5.00 per minute. In addition origination/ termination charges of Rs. 0.50 / 0.50 per minute shall be payable to BSO. Carriage Charges to NLDO as per Schedule II shall also be applicable. In addition ILDO is required to pay towards settlement rates for Outgoing and incoming traffic between India and distant countries to the distant International carriers. Difference between Retail Tariff and Wholesale Tariff, i.e., IUCs paid for origination/termination and carriage of calls on the national network and the international settlements paid to foreign operators may be shared through mutual negotiations.

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SCHEDULE – VII

FIXED TO FIXED LOCAL CALLS BETWEEN TWO BASIC SERVICE PROVIDERS

Termination Charges of Rs. 0.25 per minute shall be applicable for the Intra SDCA Local calls, which are originating and terminating in the same SDCA between Fixed to Fixed lines.

ANNEXE – A

EXPLANATORY MEMORANDUM

1. With the opening up of the Telecom service market (Basic / Value Added) in 90s for private sector participation, the Authority notified its first Telecommunication Tariff Order in March 1999 and a Regulation on Interconnection Charge and Revenue Share in May 1999. Subsequent to these notifications, the National and International Long Distance markets have also been opened up to competition. These policy measures have resulted in significant reduction in long distance tariffs due to competitive pressures. This has drastically reduced the margin available to fund the Access Deficit incurred by the Basic Service Operators due to rentals being significantly lower than actual costs. In a Multi-Operator environment, it is important to specify an IUC regime which gives greater certainty to the Inter-operator settlements and facilitates interconnection agreements. Thus, there is a need for specifying cost based Interconnection Usage Charges (IUC) for origination, transit and termination in a Multi-Operator environment. Origination and Termination usage charges include Access Deficit Charge (ADC) payable to the Basic Service Operators which they must get in order to keep the rental as well as local calls affordable. The exercise to determine IUCs involved an assessment of the various cost items attributable to the different network elements involved in setting up of a call in a Multi-Operator environment. Every effort has been made to accurately assess the network element costs based on the inputs provided by various operators including the incumbent.

2. The IUC determination exercise started with detailed discussions with various stakeholders based on TRAI consultation paper 2001/5 dated 14th December 2001. This paper proposed a methodology for calculating Origination, Transit and Termination charges in a Multi-Operator environment based on International best practices. The paper identified the Network elements involved in the carriage of a long distance call from its origin to destination in a Multi-Operator environment.

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3. The Interconnection Usage Charges for Origination, Transit and Termination are also the underlying costs of carrying a call from the calling to the called party and are thus closely linked with determination of retail tariffs. The tariff re-balancing effected by the Authority was followed by intense competitive price declines in the long distance sector, which brought down the prices substantially. With the initiation of the IUC exercise, the Authority was also in a position to carry out its tariff review which has become essential in the new Multi-Operator Multi-Service telecom scenario which has emerged after opening up of all the segments of telecom service market such as Cellular, Basic and Long Distance. To discuss both Basic Service tariff and IUC, which are closely linked, the Authority released its Consultation Paper No. 2002/3 dated 23rd September 2002. This paper dealt with tariffs for Basic Services as well as the IUC regime including Access Deficit Charge.

4. Framework of the IUC regime has already been established by TRAI in its Regulation on Reference Interconnect Offer (RIO). As detailed therein IUC has to be determined based on minutes of usage for various Unbundled Network Elements and the cost of these elements. As brought out in the Reference Interconnect Offer (RIO), the IUCs for Origination, Transit and Termination are based on the principles of element based charging i.e. one operator charging the other for the resources consumed for carriage of its calls in terms of minutes of use (MOU).

5. The Access Deficit Charge (ADC) is assessed by fixing an affordable level for rental/ local call charges, special concessionary local call charges in the rural areas, provision of free calls, and any other below cost tariffs that the Regulator may need to specify to make the Basic telecom services affordable to the common man to promote both Universal Service and Universal access as per NTP'99. These tariffs are specified in the Authority's Tariff Order being notified separately. In order to reach the final estimates of IUC this Regulation takes into account the requirements of Access Deficit Charge arising out of the Tariff Order being issued. For certain distance categories the Authority has specified a range for the IUC

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and expects the final IUC for these categories to be a spot within the given range which will be mutually negotiated among the service providers. The mutually negotiated and agreed amount of IUC has to be paid/ received for the relevant calls.

6. Below cost rentals which are to be compensated by ADC applicable for Basic Service such as POTS. For other services such as Cellular Mobile and Wireless in Local Loop with limited mobility (WLL-M), the Access Deficit Charge is not applicable as the rentals and call charges have been left to market forces and have not been kept below cost by regulation, as is the case with fixed local telephone service (POTS).

Calculation of Interconnection Usage Charges

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7. As on date, the incumbent BSNL is the Main Significant Operator that provides Basic and NLD services covering about 38 million subscribers through a Basic Service Network of more than 35000 local exchanges located at various urban and rural sites spread out in 2647 SDCAs and Long Distance Network with TAX switches in 21 Level I and 301 Level II LDCAs. It has Intra-SDCA, Intra-LDCA, Intra-Circle and Inter-Circle digital transmission Network, mainly on the Optical Fiber media, which is used for interconnection between various switches as per a Network Hierarchy.

8. In the absence of actual cost data, the Authority had initially estimated IUCs using a bottom up approach i.e. partly based on a Proxy Model. These estimates were presented in its Consultation Paper (2002/3) for comments. Subsequently the Authority was provided with the network element and other costs by BSNL in the course of the consultations and subsequent discussions. When compared with the expenditures by the BSNL, these figures were found to be too high. Correspondence with BSNL to clarify the matter was not conclusive. Meanwhile the BSNL published its balance sheet for the year 2001-2002, which provided the Authority with an alternative source of data based on which IUC calculation was feasible. Accordingly for its IUC estimates, the Authority has used the data available

in the Annual Report 2001-02 of BSNL together with certain other information provided to it by BSNL, in their interactions with the Authority.

9. For the IUC exercise the Authority has taken the CAPEX, Depreciation and OPEX as derived from the audited BSNL figures for the Financial Year 2001-2002 (please see Table 1). The components include data on Depreciation charges during the year, Net Block, Capital Works in Progress, Current Assets, Current Liability, Employees Remuneration and administrative expenses. Information on the number of DELs at the end of the period is also provided. CAPEX + Depreciation costs and OPEX costs have been converted to cost per line against these heads by dividing the costs with the DELs as on 31.3.2002. The derived values have been also adjusted for costs attributable to telephone service with the assumption that only 95% of total revenues are derived from these services.

10. The overall CAPEX and OPEX have to be allocated to different parts of the network. This has been done by allocating these costs to the various network elements in the same ratio as has been done by the BSNL in its RIO Schedule cost data submitted to the Authority. Thus, based on BSNL inputs, the aggregate amount of CAPEX + OPEX has been allocated to network elements based on Mean Capital Employed for each un-bundled Network Element as shown in Table 2.

11. The data on minutes of use attributable to various Network Elements is as per the submission of BSNL to the Authority and pertains to April 2002. The data provided by BSNL shows the share of long distance calls (Inter-SDCC long distance minutes) to be 16.28 % of the total minutes. Since April 2002, the usage pattern for these calls is estimated to have changed substantially following the substantial price decline in the tariffs for long distance calls. Moreover, long distance tariffs are declining even further, and this too will affect the usage of these calls, leading to an increase in their share in overall minutes. In view of these developments, and based on the extent of tariff decrease and elasticity of demand ranging between 0.3 to 0.5, the Authority has taken the share of these calls to be 22 % of the total

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minutes (Table 3). This is also borne out by the fact that the decline in BSNL revenue has been lower than the extent to which it should have declined in the light of the long distance tariff reduction had the share of such traffic remained at 16.28% of the total, as was the case earlier. Further, the data on revenues, metered call units and DELs from BSNL covering A&N, Haryana, J&K, Karnataka, Punjab, Tamilnadu, Uttranchal and Calcutta for 3 months ending September 2002 suggest that Inter-SDCC long distance contribution could be around 22%. Data from other Circles is still not available. Thus, for the IUC calculations the Authority has considered Inter-SDCC long-distance minutes of usage as 22% of the total minutes.

12. On the above basis, Table 4 provides Cost per Minute for various unbundled Network elements. The costs do not include the amounts paid for revenue share License Fee and Spectrum Charge, because these cost items depend on the revenues earned, which in turn are not certain in view of the ongoing changes in competition driven market prices. However, to account for revenue share License Fee and Spectrum Charge, the cost based estimates have been enhanced by 12% for basic service and 15% for national long distance service.

13. The cost based monthly Rental (including License fee) is estimated to be Rs. 424/. Recent data from BSNL shows that at present their recovery on account of monthly rental is in the range of Rs. 165 to Rs. 175 per month. BSNL was charging lower Rentals for certain exchange capacity slabs. On that basis, a balance amount of Rs. 249/- to Rs 259/- per month per DEL needs to be recovered through Access Deficit Charge (ADC).

14. In order to calculate the overall ADC, we need to also take account of the costs incurred on free calls that are provided in the standard tariff package, as well as the call charges and monthly rentals specified by the Authority (in a Tariff Order that is being notified separately) . In addition, 30 free MCUs in urban areas for Local calls, 50 free MCUs in rural areas for Local calls, below cost call charges (below 300 MCUs) in Rural areas provided at

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present also add in no insignificant manner to this Deficit. The following charges have been considered in the IUC exercise:

- Existing Monthly Rental of Rs. 70, 120, 180 and Rs. 250 proposed for revision to Rs. 70, 120, 200 and 280 respectively based on total capacity of the exchanges in the Rural/ Urban SDCAs. Commercial Rentals are also proposed in Urban SDCAs.
- Each Local Call MCU shall be of 120 seconds duration.
- Local call charges up to 300 Local MCUs @ Rs. 1.00 per MCU and beyond 300 Local MCUs @ Rs.1.20 for Urban SDCAs
- Local call charges Up to 300 Local MCUs @ Rs. 0.80 per MCU and beyond 300 Local MCUs @ Rs. 1.20 per MCU for Rural SDCAs
- Monthly 30 Free Local MCUs for urban and 50 Local MCUs for Rural SDCAs

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15. If the access deficit were to be recovered from each minute of usage (local as well as long distance calls), this would be possible by charging each local minute at Rs. 1.00 (or Rs. 2.00 per 2 minute MCU), and each long distance call minute at Rs. 1.00 plus the cost of long distance carriage. In other words including the ADC, the cost of local call at present is reckoned to be Rs.1.00 per minute. However, since the local call charge has been fixed at only Rs. 0.80, Rs. 1.00 or Rs.1.20 per local MCUs of 2 minutes duration, in different situations, the portion of access deficit not covered by the local calls has to be recovered from the long distance calls. These are either intra-circle or inter-circle long distance calls. We have considered the distance categories for these calls on the same lines as prevailing at present, namely:

    - up to 50 Kms
    - 50 to 100 Kms
    - 100 to 200 Kms
    - 200 to 500 Kms
    - beyond 500 Kms
    - International Long Distance calls

16. The private sector operators are yet to Roll out completely and are generally serving Areas where monthly Rental Charges are higher, e.g., Rs. 180 and Rs. 250. Based on the proposed revision of Rental charges, it is estimated that average monthly rentals per month for BSNL would increase to a level between Rs. 190 to Rs. 200.

17. Basic Service Operators need to be paid the Access Deficit Charge due to deficit in rentals for POTS services, free calls and below cost local call charges. For Cellular mobile and wireless in local loop with limited mobility services do not have any access deficit on account of Rentals and free calls. The Authority has allowed for Cellular Services a tariff regime under which there is no access deficit. The same has been permitted in the case of WLL(M) as well.

IUC Calculation:

18. The total Interconnection Usage Charges for carriage of a call in a multi-operator environment are to be shared for Origination, Transit and Termination on the basis of work done in each segment for the carriage of the call. The IUC is based on the Annual CAPEX & OPEX of different Network segments. To the extent that competition does not take the tariffs down to bare costs, the difference between retail and wholesale tariffs (summation of origination, transit and termination IUCs) may be shared among the networks involved in the call, based on commercial negotiations.

19. The Rental component of the Basic Service Network is derived on the basis of CAPEX for the Network segment up to the SDCC Tandem, plus an average revenue share License Fee and Spectrum charge of 12 %. Local Charges are computed on the basis of the OPEX of the same segment, distributed on the basis of average Minutes of Usage (MoUs). The IUC for the Transit is determined on the basis of sum of CAPEX & OPEX of the segment used for the carriage of the call and is dependent on the MOUs transited in the segment concerned. The carriage of the call could involve transiting through 1TAX, 2 TAXs, 3 TAXs or 4 TAXs as far as it relates to the

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long distance network. Depending upon the number of TAXs and distance of the carriage, the transit access charge or transit IUC will be different. For the cost items of long distance carriage, a revenue share License Fee of 15 % is added.

20. At present, Rents charged for the Basic Telephone Service are below costs. Keeping in mind the important objective of affordability, the Authority has considered a very limited increase in the prevailing monthly rentals. The difference between the average monthly rental and the cost based monthly rental has to be obtained through Access Deficit Charges. To this amount, we also need to add the costs of free calls and any below cost tariffs that might be put in place to attain the policy objectives of the Government to keep basic telephone service, i.e. POTS, affordable. This total deficit due to cost minus regime has to be funded through the Access Deficit Charge ("ADC") mainly recovered through retail long distance tariff over PSTN.

21. There are three main elements of the cost based charge items. One is the amount that is to be paid to the originator of the call, another is that to be paid to the network terminating the call, and a third amount is the charge for long distance carriage or transiting the call through the network of the NLD operator. Taking both the origination and termination amount to be equal, we can calculate the total per minute charge that will cover costs and will provide the ADC. Both origination and termination IUCs have been computed to be identical assuming near-end handover in the LDCA in which the call has originated and a far-end handover in the destination LDCA.

22. The issue of affordability is critical for local calls (POTS) as such calls provide essential means of communication within the local community of interest. It is therefore felt that a local call charge of Rs. 1.00 per minute would be too high in that context. The Authority has therefore not covered the entire ADC related cost from the local call charge. The amount that is not recovered from such calls has been included in the ADC component of IUCs to be realised from the long distance (STD/ISD) retail tariff..

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23. For long distance calls also, for each distance category for intra-circle and inter-circle calls, the amount to be charged to cover the cost and ADC would be Rs. 1.00 plus the cost of call carriage i.e. for network elements used to carry the call. To this amount, we need to add the ADC that is not covered by the local call charge. Since the share of local calls is 78% in total minutes of use, a specified shortfall in recovering ADC would be multiplied by about 3.55 (i.e. 78 divided by 22) to be recovered from the long distance calls. However, for intra-circle calls up to 50 Kms and Inter-circle calls up to 50 Kms, call charges are being kept equal to the cost of the local call taking the community of interest of the subscribers within these short distances. For such inter-circle calls origination and termination charges payable to the BSOs will be Rs. 0.15 per minute each. The NLDO may either accept Rs. 0.20 per minute for the carriage or choose to get compensated for the work done here from other longer distance calls. NLDO could recover his carriage share from traffic falling in higher distance slabs. For Intra-circle long distance calls the origination and termination IUC could be Rs. 0.25 per minute. This again is a below cost recovery for BSO also. This further increases the amount of ADC which is required to be recovered from the intra-circle calls beyond 50 Kms, inter-circle calls beyond 50 Kms and International Long Distance calls.

24. If it were possible to recover ADC from each of the call minutes, then the amount of the ADC recovery from long distance calls would be as follows:

Origination	Call carriage	Termination
Rs. 0.50 per minute	Ranging from Rs. 0.20 to Rs. 1.10 per minute for various distances	Rs. 0.50 per minute

However, if we try to follow this arrangement and recover the ADC component from local calls then these rates are bound to become too high and un-affordable.

25. Similar to monthly rental and local calls, the call charge in lower distance categories has also been kept low to make such calls more affordable. The amount of access deficit that is not recovered out of the tariffs for these distance categories has also to be recovered from the other long distance calls. Keeping the call charge too low for these distance categories would imply a uniformly higher ADC for all the other distance categories.

26. For ensuring recovery of ADC relating to call charges such as local calls or long distance calls of shorter distances up to 50 kms, two possible ways can be considered.

- One is to have a floor to the long distance call charge, and
- Another one is to reduce the ADC amount itself.

In the interest of promoting competition and consumer interests the Authority decided in favour of not stipulating a floor to the long distance call charges.

27. The Authority has specified the amount that would need to be given to the originating and terminating access providers in a call involving Fixed Lines of BSO and cellular mobile service. These calls have been considered differently for metros and circles where the cellular mobile service provider operates. For intra-License area calls in metros, the Authority has specified a call charge of Rs. 1.20 for 90 seconds duration. The cellular mobile network will get Rs. 0.30 per minute as its terminating charges, and the balance shall be retained by the Fixed Line Operator (BSO). For intra-circle calls in circles, the call charge from Fixed to cellular mobile is Rs. 1.20 per minute, and the cellular mobile will get Rs. 0.40 per minute towards termination charges. The balance is to be retained by the Fixed (Basic Service Operator). Likewise, for (intra-License area) calls from cellular mobile to Fixed Line phone, the former will give the latter Rs. 0.50 per minute in metros and Rs. 0.60 per minute in circles. An additional Rs. 0.20 is to be paid for transit at Level II TAX in circles. With the

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availability of Mobile Termination Charges to Cellular Operators, there shall be no charge for Incoming calls.

28. For WLL(M) subscribers, forbearance is being given with respect to Outgoing Calls. Incoming calls in any case are free.

29. The Authority has specified the amount that would need to be given to the terminating access providers in respect of calls involving WLL(M) and cellular mobile service providers. These calls have been considered differently for metros and circles where the cellular mobile service provider operate. Between WLL (M) and Cellular Mobile identical termination regime is being put in place for Intra-Circle calls as the costs involved are similar. In Metro Areas, termination charge payable to WLL(M) as well as Cellular Mobile shall be Rs. 0.30 per minute. For Circle, the termination charges shall be Rs. 0.40 per minute in both cases. Rs. 0.20 per minute shall be payable for transit carriage at TAX level in circles.

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30. The cost of termination arrived at for the cellular mobile is Rs 0.30 per minute in Cellular Metro Areas and Rs. 0.40 per minute in Circle Areas. The subscriber base is taken on the basis of a quarterly growth rate of 25 % for the period January to March 2003 and an overall annual growth rate of 70% between April 2003 to March 2004 i.e. on a consumer base of approximately 13 million subscribers by the end of March 2003. The costs are based on the Opex data of 25 Circle/ Metro Cellular Operators as taken from Audited Annual reckoned to work out the OPEX figures as on 31.3.2004. The components not eligible like bad debts, closure of paging division, loss/ profit on sale of fixed assets were taken out, and the License Fee and Spectrum charge being based on revenues, were added separately by dividing the costs by 0.84 and 0.86 respectively in metros and circles. Taking into consideration the amount of OPEX and the number of DELs, OPEX per line based on 250 minutes of usage per month per subscriber has been worked out. It is estimated that existing usage of 220 minutes per subscriber per month would go up to 250 as a result of lower tariffs, CPP (payment of access Charges to Cellular Operators), free incoming calls and greater

competition. Of the total cost relating to Marketing and Advertisement, only half have been allocated to call minutes, with the rest to be allocated against other sources of revenues like Value Added Services, Rentals, and share of revenues which will be available from national long distance calls. After making the necessary adjustments on account of revenues earned from value added services the Cost works out to about 30 paise per minute and 40 paise per minute in Metro and Circle networks respectively. The last is a newly emerging revenue source and provides a good basis for the cellular mobile operators to reduce their costs and tariffs further.

31. In an Interconnection Usage Charge (IUC) regime, payment of termination charges, irrespective of the type of network in which the call terminates, becomes inescapable. The Authority has therefore decided to introduce a Mobile Termination Charge (MTC) for calls terminating in a Cellular Mobile Network, on the same principle as for calls terminating in other types of networks such as fixed line/WLL(M). The introduction of MTC in effect amounts to introduction of a calling party pays (CPP) regime. During Authority's consultation on CPP, customer advocacy groups had felt that the fixed line customer will have to pay a relatively high mobile termination charge (MTC) and therefore had objected to the introduction of CPP. The Authority had also found MTC quite high during its earlier exercise on CPP in Sept.1999 However, a significant fall in the network costs, increase in subscriber base and revenues from other sources have brought the MTC substantially down, and the extra burden on the calling subscriber due to introduction of CPP regime now will not be significant. On the plus side, the CPP regime will significantly improve the call completion rate as the called party will no more be under any pressure to keep his handset inoperative for fear of incurring an incoming airtime. This will hopefully result in additional revenue for the service providers, and greater customer satisfaction.

32. Call-forwarding shall be treated as two calls, one from calling party to called party prior to call being forwarded, another from called party to the number where call is forwarded. The tariffs specified in this Order apply to the calling party in each of these two calls. In the case of the second call (i.e.

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the forwarded call), the called party that forwards the call shall be treated as the calling party for that call.

33. Roaming shall be treated as two calls, similar to call-forwarding. One, from calling party to the called party, prior to the transfer of the call (if any) to the called party in case of roaming. The other, in case of roaming, from the called number to the roaming party. The tariffs specified in this Order apply to the first portion of the call, for the second portion (i.e. forwarding the call to the roaming party) the roaming charges as specified shall be applicable.

34. For long distance calls involving two different originating and terminating networks, the possibility of different IUCs due to difference in ADC and network architecture cannot be ruled out. However, based on an assessment of the present network status of implementation of CCS 7 signalling system and the existing intercarrier charge billing systems of the incumbent, it may be difficult to implement inter-carrier settlements if IUCs for termination are different, for different sources of origination. As the circuit group would have traffic which originated from different distance slabs i.e. 51-100, 101-200, 201-500 and above 500 Kms. inter-carrier Billing systems based on CLI on CCS 7 signalling capable of capturing the identity of originating and terminating LDCAs along with transit LDCAs is the ideal solution. However, nationwide implementation of such a system may take some time particularly in the incumbent's network involving thousands of exchanges. Therefore, in the interim period, till differential ADC could be implemented based on a CCS7 based intercarrier charge billing system, it would be desirable to have a set of uniform IUCs (inclusive of ADC) covering all the distance slabs. The Authority has thus provided two different models to recover the same amount of IUC, one of which gives uniform ADC (and IUC) for inter-circle calls above 50 Kms. This model of recovery can be implemented, without employing a CCS7 based cal by call intercarrier charge billing system.

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35. Details of the ADC calculations are provided in the following Tables.

- Table 5 provides details on differential ADC calculations when Long Distance calls are 22% of total calls, Average rental recovery in this case has been taken as Rs. 200.
- Table 6 provides details on Cost of carriage per minute, origination and termination per minute, computed differential ADC per minute for Inter-Circle and International Long Distance traffic with average rental recovery of Rs. 200. Amount in Rupees per minute payable to the originating terminating BSO is also covered.
- Table 7 provides details on Uniform ADC calculations when Long Distance calls are 22% of total calls, Average rental recovery in this case has been taken as Rs. 200.
- Table 8 provides details on Cost of carriage per minute, origination and termination per minute, computed Uniform ADC per minute for Inter-Circle and International Long Distance traffic with average rental recovery of Rs. 200. Amount in Rupees per minute payable to the originating terminating BSO is also covered.

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LIST OF TABLES

Table 1	Calculations of CAPEX, Depreciation and OPEX components per DEL based on Audited BSNL Cost Data for year 2001-2002
Table 2	Apportionment of CAPEX + Depreciation and OPEX to different Network elements based on Audited Accounts of BSNL for the year 2001 – 02 based on the Mean Capital employed by BSNL as given in Schedule 5 of RIO by BSNL
Table 3	Minutes of usage for various Network Elements as per BSNL data of April 2002 and TRAI moderation based on higher usage in Long Distance segment as a result of lower L.D. tariffs
Table 4	Cost per minute based on Audited BSNL CAPEX + Depreciation & OPEX [2001-2002] apportioned to network elements based on BSNL inputs and BSNL Minutes of Use of April 2002 moderated to 22% LD minutes of Total minutes)
Table 5	Detailed Calculation of differential Access Deficit based on 22% of Long Distance Minutes and Average Rent at Rs. 200/-
Table 6	Cost of Origination, Carriage and Termination based on differential ADC.
Table 7	Cost of Origination, Termination and Transit based on 22% of Long Distance Minutes, with Uniform ADC and Average Rent at Rs. 200/-
Table 8	Cost of Origination, Carriage and Termination based on Uniform ADC.

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TABLE 1

CALCULATIONS of CAPEX, DEPRECIATION and OPEX components per DEL based on Audited BSNL Cost Data for year 2001-2002

Total Number of DELs as on 31.3.2002 (in crores)	3.3218498		
As per BSNL Audited Figures on 31.3.2002 (Rupees in Crores)			
Depreciation charged during the year	8746.13		
Depreciation per line in Rs.		**2632.91**	
Net Block	58922.21		
Capital Works in Progress	10826.24		
Current Assets	17083.40		
Current Liability	20369.55		
Amount to be considered for multiplication by Pre-Tax weighted allocation of Capital	66462.30		
Pre-Tax weighted allocation of Capital Percentage *	13.78%		
CAPEX component	9158.50		
CAPEX component per line in Rs.		**2757.05**	
(CAPEX + Depreciation) per line in Rs.		**5389.96**	
(CAPEX + Depreciation) per line in Rs. attributable to Telephone services (95%)			**5120.46**
OPEX			
Employees Remuneration	3848.45		
Administration	3995.79		
Total OPEX	7844.24		
OPEX per Line in Rs.		**2361**	
OPEX per line in Rs. attributable to Telephone services (95%)			**2243.34**

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TABLE 2

Apportionment of CAPEX + Depreciation and OPEX to different Network elements based on Audited Accounts of BSNL for the year 2001 – 02 based on the Mean Capital employed by BSNL as given in Schedule 5 of RIO by BSNL

Sl. No.	Network Element [N.E.]	Share of Mean Capital Employed per line	Annual CAPEX + Depreciation as apportioned for Network Element excluding Licence & Spectrum fee	Annual OPEX as apportioned for Network Element
1	Access Loop	54.78%	2805	1229
2	Local Exchange	20.38%	1044	457
3	SDCC Tandem	1.27%	65	29
4	Intra-LDCA (Level II TAX)	1.25%	64	28
5	Inter-LDCC Intra-Circle + Inter-Circle [Level I)	1.25%	64	28
6	LE – SDCC Transmission Sys	3.26%	167	73
7	LE - SDCC Transmission Length (Avg. 10 Km.)	7.74%	397	174
8	SDCC - LDCC TAX Trans.	0.66%	34	15
9	SDCC - LDCC TAX Transmission Length (Avg. 40 Km.)	3.85%	197	86
10	Inter-TAX Transmission System (Intra-Circle)	0.31%	16	7
11	Inter-TAX Transmission Length (Intra-Circle) [SDH Rings]	1.64%	84	37
12	Inter-TAX Transmission SDH16 System (Inter-Circle)	0.33%	17	7
13	Inter-TAX Transmission Length (Inter-Circle) [SDH Rings]	3.27%	167	73
	Total	100.00%	5120	2243

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TABLE 3

Minutes of usage for various Network Elements as per BSNL data of April 2002 and TRAI moderation based on higher usage in Long Distance segment as a result of lower L.D. tariffs

No.	Network Element [N.E.]	Minutes of Use	
		Minutes as per BSNL figures of April 2002 (with Inter-SDCC [L.D.] component being 16.28%)	With lower tariffs, moderated Minutes considered with Inter-SDCC [L.D.] Component 22%
1	Access Loop	12475	12475
2	Local Exchange	11430	11430
3	SDCC Tandem	6208	6208
4	Intra-LDCA (Level II TAX)	1510	2040
5	Inter-LDCC Intra-Circle + Inter-Circle [Level I)	823	1112
6	LE - SDCC Transmission Sys	10386	10386
7	LE - SDCC Transmission Length (Avg. 10 Km.)	10386	10386
8	SDCC - LDCC TAX Trans.	2031	2745
9	SDCC - LDCC TAX Transmission Length (Avg. 40 Km.)	2031	2745
10	Inter-TAX Transmission System (Intra-Circle)	989	1336
11	Inter-TAX Transmission Length (Intra-Circle) [SDH Rings]	989	1336
12	Inter-TAX Transmission SDH16 System (Inter-Circle)	589	796
13	Inter-TAX Transmission Length (Inter-Circle) [SDH Rings]	589	796

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TABLE 4

Top-Down

Cost per minute based on Audited BSNL CAPEX + Depreciation & OPEX [2001-2002] apportioned to network elements based on BSNL inputs and BSNL Minutes of Use of April 2002 moderated to 22% LD minutes of Total minutes

No.	Network Element [N.E.]	Annual CAPEX+ Depreciation per line	Annual OPEX per line	Minutes of Use (MOU) per year	Cost per Minute (in Rupees)
1	**Access Loop**	2805	1229	12475	0.099
2	**Local Exchange**	1044	457	11430	0.040
3	**SDCC Tandem**	65	29	6208	0.005
4	**Intra-LDCA (Level II TAX)**	64	28	2040	0.045
5	**Inter-LDCC Intra-Circle + Inter-Circle [Level I)**	64	28	1112	0.083
6	**LE - SDCC Transmission Sys**	167	73	10386	0.007
7	**LE - SDCC Transmission Length (Avg. 10 Km.)**	397	174	10386	0.055
8	**SDCC - LDCC TAX Trans.**	34	15	2745	0.018
9	**SDCC - LDCC TAX Transmission Length (Avg. 40 Km.)**	197	86	2745	0.103
10	**Inter-TAX Transmission System (Intra-Circle)**	16	7	1336	0.017
11	**Inter-TAX Transmission Length (Intra-Circle) [SDH Rings]**	84	37	1336	0.090
12	**Inter-TAX Transmission SDH16 System (Inter-Circle)**	17	7	796	0.030
13	**Inter-TAX Transmission Length (Inter-Circle) [SDH Rings]**	167	73	796	0.302
	Total	5120	2243		
	Monthly Rental				424

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TABLE 5

Detailed Calculation of differential Access Deficit based on 22% of Long Distance Minutes and Average Rent at Rs. 200/-

Based on revision of the Rentals, Average rental value likely to be Rs. 200/-

Differential ADC CALCULATIONS

	MOUs %	MOUs in a year	MOUs in a month	Further Breakup Intra-Circle MOUs % (I.e. 11.32%)
Total Minutes {It excludes Cell to Basic & Cell to NLD Minutes }	100.00%	12475	1039.6	
Long Distance				
Upto 50 KMs Intra-Circle / Inter-Circle)	11.32%	706	58.9	5.66%
Intra-Circle calls 50 Kms to 100 Kms		424	35.3	3.40%
Intra-Circle calls 100 Kms to 200 Kms		283	23.5	2.26%
Intra-Circle beyond 200 Kms	3.59%	448	37.4	
Inter-Circle	6.41%			Further Breakup Inter-Circle MOUs % (I.e. 6.41%)
50-100		57	4.8	0.46%
100 - 200		38	3.2	0.30%
201-500		252	21.0	2.02%
>500		452	37.7	3.63%
ISD	0.68%	84	7.0	
	22.00%	883	229	
Local	78.00%			
Total Cellular Minutes per month per Cellular Subscriber			250	
Cellular Minutes to BSO (O/G + I/C)			140	
Cellular Minutes to NLD (O/G+ I/C)			60.0	
Cellular Minutes to BSO (O/G+IC) adjusted to BSO Network. DELs on 31.3.2002 :Cellular 0.643 crores and Basic 3.785 crores.			23.8	
Cellular Minutes to BSO (O/G) adjusted to BSO Network. DELs on 31.3.2002 :Cellular 0.643 crores and Basic 3.785 crores.			9.5	
Cellular Minutes to BSO (I/C) adjusted to BSO Network. DELs on 31.3.2002 :Cellular 0.643 crores and Basic 3.785 crores.			14.3	Further breakup Cellular % (11.6%)
Cellular Minutes to NLD (O/G+ I/C) adjusted to BSO Network			11.6	
				0.59
				3.93
				7.07

Average Rental based on Existing rentals of Rs. 70, 120, 180 & 250 per month	200.00
Fixed to Fixed Minutes per month including NLD having both origination / termination in the BSO network	1023.05
Fixed to Fixed Local Minutes per month	860.22
Local MCUs (Intra BSO) and applicable only for outgoing calls	215
Intra-network inter-circle (Minutes per month) Cellular - NLD	11.6
Intra-network (Minutes per month) Fixed - ILD	7.02
Intra-network minutes with one side termination / origination in BSO network without ADC	23.78
Intra-network minutes with one side with ADC termination / origination in BSO network	18.64
Fixed to Fixed Local Call Charges for a call of 2 minute duration @ Rs. 1.00 upto 300 MCUs in Urban SDCAs	1.00
Fixed to Fixed Local Call Charges for a call of 2 minute duration @ Rs. 0.80 upto 300 MCUs in Rural SDCAs	0.80
Fixed to Fixed Local Call Charges Above 300 MCUs @ Rs. 1.20 per 2 minute in Urban & Rural SDCAs	1.20
% of Local call MCUs that originate from subscribers with more than 300 MCUs	20.00%
No. of MCUs Above 300 MCUs [Local MCU for 120 Seconds]	104
Recovery Rate per minute for outgoing calls for usage beyond 300 MCUs	0.20
Recovery from subscribers with higher usage (Above 300 MCUs) in Rs. I.e.for outgoing call usage beyond 300 MCUs as appropriated to all subscriber base	20.79
Cost of call per minute based on OPEX upto SDCC Network Elements	0.466
Number of Free Calls of 2 minute Duration 30 in Urban {In Rural it will be 50]	30
Additional Cost of 60 Free MCUs in Rs. /month	30.00
Additional Cost in Rs / month due to additional 20 free MCUs in Rural Areas (considering 25 % of total DELs as Rural)	5.00
Additional Cost in Rs. /Month for Calls in Rural Areas Rs. 0.80 for two minutes duration (upto 500 MCUs)	25.00
Cost Based Rental	424
Amount for ADC per month per subscriber = Cost Based Monthly Rental + Additional Costs per month for Free Calls in Urban and Rural Areas - Recovery from Above 300 MCUs	263
Average ADC/ Minute [Same for O/G and I/C]	0.252
Cost Based Origination + Termination Charges per MCU value is Rs. (46.6*2+0.252*4=) 1.94 per MCU.	1.94
For one side termination or origination the charges per MCU is 0.97 wihich is rounded off to Rs.1.00	1.00
Recovery from calls originating from Cellular or terminating in Cellular networks (Cost of origination / termination per minute as provided in tariff average of Rs. 0.50 per minute)	0.00
Equivalent minutes available for recovery from Long Distance & Inter-Network calls from both end termination / origination	163
Recovery based on Cost Based Origination, Termination Charges from Long Distance & Inter-Network calls @ Rs.1.00 per 2 minutes	81

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TABLE 6

COST OF ORIGINATION, CARRIAGE AND TERMINATION based on Differential ADC
COST OF CALL per minute

	Local Rs/Min		Cost of Carriage in Rs. per minute			
Origination Charges per Minute in Rs.			1 TAX	2 TAX	3 TAX	4 TAX
		Transit Cost payable to NLDO	0.20	0.45	0.75	1.10
Origination Intra Circle above 50 Km Inter-Circle & Inter-Network calls (per minute)	0.50					
Termination Intra Circle above 50 Km Inter-Circle & Inter-Network calls (per minute)	0.50					
Long Distance		(ADC in Rs. per minute)	Cost of Long Dist. Carriage per minute including ADC			
Calls 50 to 200 Km Intra-Circle		0.50	1.20	1.45	1.75	2.10
Intra Circle Long Dist.>200Kms		1.25	2.70	2.95	3.25	3.60
Inter-Circle						
50 to 100 Kms		0.50	1.20	1.45	1.75	2.10
100-200 Kms		0.50	1.20	1.45	1.75	2.10
200-500 Kms		1.25	2.70	2.95	3.25	3.60
>500 Kms		2.00	4.19	4.44	4.74	5.09
ISD		5.00	5.20	5.45	5.75	6.10

			Cost of Long Distance Call in Rs. (Local + Carriage + ADC) per minute with			
	Amount in Rs. per minute payable to Originating FSP	Amount in Rs. per minute payable to Terminating FSP	1 TAX	2 TAX	3 TAX	4 TAX
Intra-Circlel calls (50 to 200 Km)	1.00	1.00	2.20	2.45	2.75	3.10
Intra Circle Long Dist. > 200Kms	1.75	1.75	3.70	3.95	4.25	4.60
Inter-Circle						
50 to 100 Kms	1.00	1.00	2.20	2.45	2.75	3.10
100-200 Kms	1.00	1.00	2.20	2.45	2.75	3.10
200-500 Kms	1.75	1.75	3.70	3.95	4.25	4.60
>500 Kms	2.50	2.50	5.20	5.45	5.75	6.10
ISD	5.50	*	5.70	5.95	6.25	6.60

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Note: 1. For Inter-Circle Long Distance calls in the category "0 to 50 Kms", the National Long Distance Operator may take IUC either up to Rs. 0.20 per minute or may agree to no payment for these calls and be compensated from the revenues from the longer distance calls. The termination charge would be Rs. 0.15 per minute.

2. For Intra-Circle Long Distance calls the termination charge would be Rs. 0.25 per minute.

TABLE 7

Cost of Origination, Termination and Transit based on 22% of Long Distance Minutes, with uniform ADC and Average Rent at Rs. 200/-

Based on revision of the Rentals, Average rental value likely to be Rs. 200/-

Uniform ADC CALCULATIONS

	MOUs %	MOUs in a year	MOUs in a month	Further Breakup Intra-Circle MOUs % (I.e. 11.32%)
Total Minutes {It excludes Cell to Basic & Cell to NLD Minutes }	100.00%	12475	1039.6	
Long Distance				
Upto 50 KMs Intra-Circle / Inter-Circle)	11.32%	706	58.9	5.66%
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Cellular Minutes to BSO (O/G+IC) adjusted to BSO Network. DELs on 31.3.2002 :Cellular 0.643 crores and Basic 3.785 crores.			23.8	
Cellular Minutes to BSO (O/G) adjusted to BSO Network. DELs on 31.3.2002 :Cellular 0.643 crores and Basic 3.785 crores.			9.5	
Cellular Minutes to BSO (I/C) adjusted to BSO Network. DELs on 31.3.2002 :Cellular 0.643 crores and Basic 3.785 crores.			14.3	Further breakup Cellular % (11.6%)
Cellular Minutes to NLD (O/G+ I/C) adjusted to BSO Network			11.6	
				0.59
				3.93
				7.07

Average Rental based on Existing rentals of Rs. 70, 120, 180 & 250 per month	200.00
Fixed to Fixed Minutes per month including NLD having both origination / termination in the BSO network	1023.05
Fixed to Fixed Local Minutes per month	860.22
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Intra-network inter-circle (Minutes per month) Cellular - NLD	11.6
Intra-network (Minutes per month) Fixed - ILD	7.02
Intra-network minutes with one side termination / origination in BSO network without ADC	23.78
Intra-network minutes with one side with ADC termination / origination in BSO network	18.64
Fixed to Fixed Local Call Charges for a call of 2 minute duration @ Rs. 1.00 upto 300 MCUs in Urban SDCAs	1.00
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Fixed to Fixed Local Call Charges Above 300 MCUs @ Rs. 1.20 per 2 minute in Urban & Rural SDCAs	1.20
% of Local call MCUs that originate from subscribers with more than 300 MCUs	20.00%
No. of MCUs Above 300 MCUs [Local MCU for 120 Seconds]	104
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Recovery from subscribers with higher usage (Above 300 MCUs) in Rs. I.e.for outgoing call usage beyond 300 MCUs as appropriated to all subscriber base	20.79
Cost of call per minute based on OPEX upto SDCC Network Elements	0.466
Number of Free Calls of 2 minute Duration 30 in Urban {In Rural it will be 50]	30
Additional Cost of 60 Free MCUs in Rs. /month	30.00
Additional Cost in Rs / month due to additional 20 free MCUs in Rural Areas (considering 25 % of total DELs as Rural)	5.00
Additional Cost in Rs. /Month for Calls in Rural Areas Rs. 0.80 for two minutes duration (upto 500 MCUs)	25.00
Cost Based Rental	424
Amount for ADC per month per subscriber = Cost Based Monthly Rental + Additional Costs per month for Free Calls in Urban and Rural Areas - Recovery from Above 300 MCUs	263
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Cost Based Origination + Termination Charges per MCU value is Rs. (46.6*2+0.252*4=) 1.94 per MCU.	1.94
For one side termination or origination the charges per MCU is 0.97 wihich is rounded off to Rs.1.00	1.00
Recovery from calls originating from Cellular or terminating in Cellular networks (Cost of origination / termination per minute as provided in tariff average of Rs. 0.50 per minute)	0.00
Equivalent minutes available for recovery from Long Distance & Inter-Network calls from both end termination / origination	163
Recovery based on Cost Based Origination, Termination Charges from Long Distance & Inter-Network calls @ Rs.1.00 per 2 minutes	81

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TABLE 8

COST OF ORIGINATION, CARRIAGE AND TERMINATION based on Uniform ADC
COST OF CALL per minute

	Local Rs/Min		Cost of Carriage in Rs. per minute			
Origination Charges per Minute in Rs.			1 TAX	2 TAX	3 TAX	4 TAX
		Transit Cost payable to NLDO	0.20	0.45	0.75	1.10
Origination Intra Circle above 50 Km Inter-Circle & Inter-Network calls (per minute)	0.50					
Termination Intra Circle above 50 Km Inter-Circle & Inter-Network calls (per minute)	0.50					
Long Distance		(ADC in Rs. per minute)	Cost of Long Dist. Carriage per minute including ADC			
Calls 50 to 200 Km Intra-Circle		0.50	1.20	1.45	1.75	2.10
Intra Circle Long Dist.>200Kms		1.50	3.20	3.45	3.75	4.10
Inter-Circle						
50 to 100 Kms		1.50	3.20	3.45	3.75	4.10
100-200 Kms		1.50	3.20	3.45	3.75	4.10
200-500 Kms		1.50	3.20	3.45	3.75	4.10
>500 Kms		1.50	3.21	3.46	3.76	4.11
ISD		4.70	4.90	5.15	5.45	5.80

			Cost of Long Distance Call in Rs. (Local + Carriage + ADC) per minute with			
	Amount in Rs. per minute payable to Originating FSP	Amount in Rs. per minute payable to Terminating FSP	1 TAX	2 TAX	3 TAX	4 TAX
Intra-Circlel calls (50 to 200 Km)	1.00	1.00	2.20	2.45	2.75	3.10
Intra Circle Long Dist. > 200Kms	2.00	2.00	4.20	4.45	4.75	5.10
Inter-Circle						
50 to 100 Kms	2.00	2.00	4.20	4.45	4.75	5.10
100-200 Kms	2.00	2.00	4.20	4.45	4.75	5.10
200-500 Kms	2.00	2.00	4.20	4.45	4.75	5.10
>500 Kms	2.00	2.00	4.20	4.45	4.75	5.10
ISD	5.20	*	5.40	5.65	5.95	6.30

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Note: 1. For Inter-Circle Long Distance calls in the category "0 to 50 Kms", the National Long Distance Operator may take IUC either up to Rs. 0.20 per minute or may agree to no payment for these calls and be compensated from the revenues from the longer distance calls. The termination charge would be Rs. 0.15 per minute.

2. For Intra-Circle Long Distance calls the termination charge would be Rs. 0.25 per minute.

Telecom Regulatory Authority of India

Notification

New Delhi, the 27th March, 2003

No.311-1/2003-Econ

In exercise of the powers conferred upon it under section 36 read with clauses (ii), (iii) and (iv) of sub section (b) of Section 11 (1) of the Telecom Regulatory Authority of India Act, 1997 as amended by TRAI (Amendment) Act, 2000, to fix the terms and conditions of interconnectivity between Service Providers, to ensure effective interconnection between different service providers and to regulate arrangements amongst service providers of sharing their revenue derived from providing telecommunication services, the Telecom Regulatory Authority of India hereby makes the following Regulation.

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THE TELECOMMUNICATION INTERCONNECTION USAGE CHARGES (IUC) (FIRST AMENDMENT)) REGULATION, 2003 (2 of 2003)

Section I

Title, Extent and Commencement

1. Short title, extent and commencement:

(i) This Regulation shall be called "The Telecommunication Interconnection Usage Charges (IUC) (First Amendment) Regulation 2003" .

(ii) The Regulation shall be deemed to have come into force from the date of notification in the official Gazette.

Section II

2.1 In clause 4 under Section IV of The Telecommunication Interconnection Usage Charges (IUC) Regulation, 2003, sub-clause (iv)shall be deleted and substituted by the following:

> "(iv) The date of effect for actual implementation of IUC shall be 1st May, 2003.

2.2 In clause 4 under Section IV of The Telecommunication Interconnection Usage Charges (IUC) Regulation, 2003, sub-clause (v)shall be deleted and substituted by the following:

> " (v) The existing revenue sharing arrangement or Interconnection Usage Charges arrangement, if any, between the Interconnecting networks shall hold good only up to 30th April, 2003 in respect of the items as specified in the Regulation.

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2.3 In clause 4 under Section IV of The Telecommunication Interconnection Usage Charges (IUC) Regulation, 2003, sub-clause (vi) shall be deleted and substituted by the following:

> (vi) All existing interconnect agreements/arrangements as on date shall stand amended on 1st May, 2003 so as to conform to the notified framework of the IUC regime and these shall be submitted to TRAI for registration by 16th May, 2003, and for subsequent changes as per reporting requirement."

Section III

3. Explanatory Memorandum

This Regulation contains at Annex A, an explanatory memorandum to provide clarity and transparency to matters covered under this Regulation.

By Order

(DR. ROOPA R. JOSHI)
ADVISOR (ECONOMIC)

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Annexure– A

EXPLANATORY MEMORANDUM

1. The IUC Regulation issued on 24.1.2003 had initially envisaged the implementation of the IUC regime by 1.4.2003. Service Providers were thus to file tariff plans in consonance with 24th Amendment to TTO in conformity with IUC Regulation as well.

2. The various proposed alternative tariff plans have been received from service providers during the period 10th to 24th of March, 2003 and need detailed consideration / revision. These have been communicated to the service providers concerned and they have been required to file tariff plans in consonance with the IUC regime to the Authority complying with the provisions of the 24th Amendment to the TTO. In addition to the above, the fact that consumers need to be informed on the choices available pursuant to the contours of the Standard Tariff Plan outlined in 24th Amendment to TTO and the consequent alternative tariff plans, the Authority felt that it would be in the interests of the consumers that end users are informed well in advance about the various plans by different service providers, for which all tariff plans should be filed with the Authority by 03.04.2003 to be implemented by 01.05.2003.

3. The Authority's Tariff Order and the Interconnection Usage Charges Regulation were specified as Inter-linked regimes, and therefore should be implemented together.

4. In view of the above, the date of implementation for the IUC Regulation is also now 01.05.2003. Consequent to the above, all revenue sharing agreements which are in line with the IUC Regulation will now need to be filed with the Authority latest by 16th May, 2003.

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Telecom Regulatory Authority of India
Notification
New Delhi, the 16th June, 2003

No.311-1/2003-Econ
In exercise of the powers conferred upon it under section 36 read with clauses (ii), (iii) and (iv) of sub section (b) of Section 11(1) of the Telecom Regulatory Authority of India Act, 1997 as amended by TRAI (Amendment) Act, 2000, to fix the terms and conditions of interconnectivity between Service Providers, to ensure effective interconnection between different service providers and to regulate arrangements amongst service providers of sharing their revenue derived from providing telecommunication services, the Telecom Regulatory Authority of India hereby makes the following Regulation.

THE TELECOMMUNICATION INTERCONNECTION USAGE CHARGES (IUC) (SECOND AMENDMENT)) REGULATION,2003 (3 of 2003)

Section I
Title, Extent and Commencement

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1.Short title, extent and commencement:

(i) This Regulation shall be called "The Telecommunication Interconnection Usage Charges (IUC) (Second Amendment) Regulation 2003". (IUC Regulation).

(ii) This Regulation shall be deemed to have come into force from the date of notification in the official Gazette.

Section II

2.1 Clause 2.3 under Section II of The Telecommunication Interconnection Usage Charges (IUC) (First Amendment) Regulation, 2003 (2 of 2003) dated 27.03.2003 shall be deleted and substituted by the following:

(vi) All existing interconnect agreements/arrangements as on date shall stand amended on 1st May, 2003 so as to conform to the notified framework of the IUC regime and these shall be submitted to TRAI for registration by 30th June, 2003, and for subsequent changes as per reporting requirement.

Section III

3. Explanatory Memorandum This Regulation contains at Annex A, an explanatory memorandum to provide clarity and transparency to matters covered under this Regulation.

By Order

(DR. ROOPA R. JOSHI)
ADVISOR (ECONOMIC)

Annexure- A

EXPLANATORY MEMORANDUM

1. Consequent upon the Telecommunication Interconnection Usage Charges(IUC) (First Amendment) Regulation, 2003 (2 of 2003) dated 27.03.2003, all service providers were required to file all revenue sharing agreements with the Authority latest by 16th May, 2003.

2. The Authority is in receipt of various representations from various service providers expressing their inability to file the revenue sharing agreements by the above-stipulated date and sought an extension of the same.

3. The Authority considered the representations of the service providers and decided that all revenue sharing agreements which have to conform to the IUC Regulation will now need to be filed with the Authority latest by 30th June, 2003 without any delay.

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