

**Telecom Regulatory Authority of India**

**Notification**

**New Delhi, the 29<sup>th</sup> October 2003**

No. 409-5/2003-FN

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  
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 Regulation 2003” (the Regulation) and supercedes the earlier Regulation dated 24<sup>th</sup> January 2003 (1 of 2003) and its amendments dated 27<sup>th</sup> March, 2003 (1<sup>st</sup> amendment) and 16<sup>th</sup> June, 2003 (2<sup>nd</sup> amendment).
- (ii) The Regulation shall cover arrangements among service providers for payment of Interconnection Usage Charges, for Telecommunication Services, covering Basic Service that includes WLL (M) services, Cellular Mobile Services, and Long Distance Services (STD/ ISD) throughout the territory of India.

- (iii) The Regulation shall be deemed to have come into force from the date of its 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, CMSP, ILDO and NLDO” respectively mean the Basic Service Operator, Cellular Mobile Service Provider, International Long Distance Operator and National Long Distance Operator.
- (v) “Ceiling(s)” mean(s) the upper limit(s) of a charge specified by the Authority from time to time over which such charges may not be offered.
- (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. The Authority, however, has a right to intervene at any stage after the introduction of the charge.
- (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 or termination of the calls.
  - (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 the facility by which a subscriber can have direct connection between him (in India) with another end user in another country by means of direct dialing through licensed networks. This includes the coverage of the international sector by ILDO and the related national sector by NLDO and/or access provider.
  - (xiv) "LDCA/ LDCC" respectively mean Long Distance Charging Area/ Long Distance Charging Centre.
  - (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.

- (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. (2 of 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) "SDCA/ SDCC" respectively mean Short Distance Charging Area/ Short Distance Charging Centre.
- (xxi) "Set Up Costs of Interconnection" means the initial cost of any system up-gradation needed to provide the specific interconnection facilities requested.
- (xxii) "Settlement Period" is the period at the end of which the inter-carrier billing IUC/ADC payments among service providers are to be settled, based on the record reconciliation process as may be finalized through mutual arrangements among the service providers.
- (xxiii) "Significant Market Power (SMP)" means "A Service Provider holding a share of at least 30% of total activity in a licensed telecommunication service area. These Services are categorized as Basic Service, Cellular Mobile Service, National Long Distance Service and International Long Distance Service." Where "Activity" would mean and include any one or more of the following:
- (a) Subscriber Base
  - (b) Turnover

(c) Switching Capacity

(d) Volume of Traffic

- (xxiv) "Subscriber Trunk Dialing" (STD) means the facility by which a subscriber can have direct connection between him and another end user in another SDCA within India by means of direct dialing through the public long distance networks.
- (xxv) "Terminating Network" means the network to which a receiver of a telecommunication message (voice and non-voice) is proximately connected to.
- (xxvi) "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.
- (xxvii) "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.
- (xxviii) "WLL (M)" means limited mobility telephony service using wireless in local loop technology within a Short Distance Charging Area.
- (xxix) 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.

### **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)” and The Telecommunication Interconnection (Port Charges) Regulation 2001 (6 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.

<b>Schedule I</b>	<b>–</b>	<b>Termination Charges</b>
<b>Schedule II</b>	<b>–</b>	<b>Carriage Charges</b>
<b>Schedule III</b>	<b>–</b>	<b>Access Deficit Charge (ADC)</b>

- (i) Unless specifically provided in the Schedules to this Regulation, the Authority forbears with respect to other Interconnection Usage Charges.
- (ii) The date of effect for actual implementation of IUC shall be 1<sup>st</sup> December 2003.
- (iii) The existing Interconnection Usage Charges arrangement between the Interconnecting networks in respect of the items as specified in this Regulation shall hold good till the date on which this Regulation comes in force.
- (iv) All existing interconnect agreements/ arrangements as on date shall stand amended on the date of actual implementation of this Regulation so as to conform to the present framework of the IUC regime and these shall be

submitted to TRAI for registration within 15 days of implementation of this Regulation, and for subsequent changes as per reporting requirement.

- (v) IUC values specified in 'the Regulation' shall also be applicable for all Reference Interconnect Offers by Significant Market Powers (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 'the Regulation', as also all subsequent changes, subject to the provisions of Section IV 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 Regulation, Direction, Determination and Order of the Authority, Reference Interconnect Offer and existing Interconnect agreement/arrangement between Service Providers.

## **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-motu, 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 ‘the 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**



## Schedule - I

### 1. Termination Charges

Termination charge for calls to Basic (Fixed, WLL (Fixed), and WLL with limited mobility) and Cellular networks would be **uniform @ Rs. 0.30 per minute**. The same termination charge would be applicable for all types of calls viz. Local, National Long Distance and International Long Distance.

### 2. Origination Charges

Forbearance.

The Originating Service Provider shall retain origination charges from the residual after payment of the charges for carriage, termination and access deficit.

### 3. Carriage Charges

Carriage charges have been specified in **Schedule II**.

### 4. Access Deficit Charges

Access Deficit Charge (ADC) has been specified in **Schedule III**.

**Schedule - II**  
**Carriage Charges**

**a) Carriage charges for Long Distance calls within India**

**Table I**  
**(Amount in Rupees per minute)**

<b>Carriage charges per minute for Long Distance calls within India</b>	<b>Distance slab</b>			
	<b>Below 50 Kms</b>	<b>50 – 200 Kms</b>	<b>200 –500 Kms</b>	<b>Above 500 Kms</b>
	<b>0.20</b>	<b>0.65</b>	<b>0.90</b>	<b>1.10</b>

The service providers are allowed to negotiate a spot value within +/- 10% of the long distance calls carriage charge beyond 50 Kms. Forbearance for carriage charge for long distance calls will be introduced once carrier selection by customers is implemented.

**b) Transit Charges for intra-SDCA calls :**

Forbearance, subject to the following condition:

Direct interconnection between Access Providers is mandatory. For exceptional cases of Intra-SDCA transit, operators may decide the charges through mutual negotiation. However this should be lower than Rs. 0.20 per minute.

**c) Carriage charges for International Long Distance calls including International termination charge (i.e. International settlement) :**

Forbearance, subject to the following condition:

The service providers may mutually agree to the sharing of any surplus, subject to the approval of the Authority.

**Notes to Schedule II :**

- a) The Originating Service Provider shall retain origination charges from the residual after payment of the charges for carriage, termination and access deficit.
  
- b) The Carrier, as shown in **Table II**, would collect the applicable amounts for carriage and termination charge from the Originating Service Provider for various type of calls. The Carrier would pass on the termination charge for terminating the traffic to the Terminating Service Provider as per **Schedule I**. In cases where the access deficit charge amount is to be collected by the terminating network or by BSNL (as per the **Table III** in **Schedule III**) the access deficit charge amount shall be passed on by the Carrier to the relevant service provider who has to be provided the access deficit amounts, as mentioned in **Schedule III**.
  
- c) The call from/ to fixed line to/ from WLL(M) would be treated as a local call, if the call destination is within the SDCA where the call originated. Calls from/ to fixed line to/ from WLL(M) would be treated as long distance calls if the call terminates outside the SDCA from where the call originated.

**Table II**

**Applicability of Carriage Charge**

(F = Fixed or WLL(Fixed); W = WLL(M); C = Cellular Mobile)

Type of Traffic	Carriage Charge	Carrier (Handover at)	
<b>Within SDCA</b>			
F/W ↔ F/W	Nil for direct connectivity/ Applicable tandem usage as in Schedule II (b)	BSO1/ BSO2 (Tandem)	
F/W ↔ C	Nil (Tandem: Metro)/ TAX usage carriage charge (Level II TAX)	BSO (Tandem: Metro)/ BSO (Level II TAX)	
F/W/C ↔ ILD	As above since ILDO handover is at LDCC TAX	BSO (TAX)	
<b>Intra Circle i.e. Inter (SDCA)</b>			
F ↔ F	Carriage as per details in Schedule II	BSO1/ BSO2	Depending on Near end or Far end Handover
F ↔ W		BSO1/ BSO2	
F/W ↔ C	Same as Intra SDCA except TAX charge is "applicable" charge since more than one TAX may be involved.	BSO (Level II/ I TAX)	
C ↔ ILD	No carriage/ tandem in case traffic is picked up or delivered at MSC	MSC (Direct connectivity cases)	
F/W ↔ ILD	Carriage as per Schedule II	BSO (TAX)	
<b>Inter Circle</b>			
F/W ↔ F/W	Carriage as per Schedule II	NLDO (TAX)	
F ↔ C	Carriage as per Schedule II	NLDO (TAX)	
W ↔ C	Carriage as per Schedule II	NLDO (TAX)	
F/W/C ↔ ILD	Carriage as per Schedule II	NLDO (TAX)	

## Schedule - III

### Access Deficit Charge (ADC)

3.1 Access Deficit Charge shall be applicable for the specified category of calls mentioned in **Table III**. The ADC will be payable to Basic Service operators on a per minute basis by the Basic, Cellular, National Long Distance and International Long Distance service providers.

The ADC applicable for different types of calls are mentioned in **Table III**. The rates are shown on a per minute bulk settlement basis.

**TABLE III**  
**Access Deficit Charge applicable for various type of Calls**

Access Deficit Charges	Local	Intra circle calls		Inter Circle calls			ILD
in Rs per minute	local	0-50 kms	>50 kms	0-50 kms	50-200 kms	>200 kms	ILD
Fixed - Fixed	0.00	0.00	0.30	0.30	0.50	0.80	4.25
Fixed - WLL(M)	0.30	0.30	0.30	0.30	0.50	0.80	
Fixed - Cellular	0.30	0.30	0.30	0.30	0.50	0.80	
WLL(M) - Fixed	0.30	0.30	0.30	0.30	0.50	0.80	4.25
WLL(M) - WLL(M)	0.00	0.00	0.00	0.30	0.50	0.80	
WLL(M) - Cellular	0.00	0.00	0.00	0.30	0.50	0.80	
Cellular - Fixed	0.30	0.30	0.30	0.30	0.50	0.80	4.25
Cellular - WLL(M)	0.00	0.00	0.00	0.30	0.50	0.80	
Cellular - Cellular	0.00	0.00	0.00	0.30	0.50	0.80	

### 3.2 Collection and distribution of ADC

The amount given above is to be collected/ paid as follows:

- For all intra-circle calls from cellular mobile/ WLL(M) to fixed line, the terminating service provider to be paid the access deficit amount.

- For all intra-circle calls from fixed to cellular mobile/ WLL(M), the originating service provider to retain the access deficit amount
- For intra-circle calls from fixed line to fixed line, the originating service provider to retain the access deficit amount (local calls and calls within “0 to 50 kms.” do not have any access deficit charge). No access deficit charge is payable to the terminating fixed network.
- For all inter-circle (including ILD) calls from fixed line, the originating service provider to keep the access deficit amount. No access deficit charge is payable to the terminating fixed network.
- For all ILD calls to fixed line, the terminating service provider to be paid the access deficit amount by the ILDO (directly or through NLDO, wherever applicable) together with the termination charge
- For all inter-circle calls from cellular mobile/ WLL(M) to fixed line, the access deficit charge and termination amount is to be collected by the NLDO from the originating service provider and the access deficit charges together with the termination charge should be paid to the terminating service provider.
- For all inter-circle calls from cellular mobile and WLL (M) to cellular mobile/ WLL(M), the access deficit amount is to be collected by the NLDO from the originating service provider and the access deficit charges should be paid to BSNL.
- For all ILD outgoing and incoming calls from/to cellular mobile and WLL (M), the access deficit amount is to be collected by the ILDO and the access deficit charges be paid to BSNL.

### **3.3 Reconciliation and Settlement of ADC**

ADC, carriage and termination payments would be based on aggregated usage in seconds (on bulk basis). The settlement would be for the aggregate total seconds expressed in terms of minutes, with the figure being rounded off in terms of the nearest minute, over the settlement period as applicable in the Interconnect Agreement. Failing agreement amongst Service Providers on the settlement period, the settlement shall be done on monthly basis on bulk basis.

## ANNEX – A

### EXPLANATORY MEMORANDUM

#### **I. IUC Regime in a Multi-Operator scenario : 24<sup>th</sup> January 2003 Regulation**

1. In a Multi-Operator environment, it is important to specify an IUC regime to give greater certainty to the Inter-operator settlements and facilitate interconnection agreements. The Authority notified an Interconnection Usage Charges (IUC) Regulation dated 24<sup>th</sup> January 2003 which contained inter alia charges for origination, transit and termination of calls in a Multi-Operator environment. This was accompanied by a Tariff Order notified by the Authority on the same date.
2. The IUC Regulation of 24<sup>th</sup> January 2003 included origination, carriage and termination charges as well as the access deficit charges to cover the access deficit that arises for basic service operators on account of the access tariffs being below costs. Prior to the opening up of the telecom sector, the loss due to access deficit for basic service operators was being taken care of through a cross-subsidy from profits to BSOs from a share of the domestic and international long distance tariffs. With competition in the domestic and international long distance segments as well as among the fixed line/ WLL(M) and cellular mobile, leading to a sharp decline in the prevailing tariffs, the extent of cross subsidy has decreased in a major way. The competition in long distance markets continues and this will mean that the tariffs are likely to decline further. In such a scenario, since the access deficit for fixed line arises due to tariffs being specified for social reasons, there is a case for providing the access deficit amounts to these service providers. In contrast to the fixed line service providers, the other access providers have tariff forbearance for call charges, and are



allowed to charge higher average amounts for local calls than those charged by fixed line operators.

3. Besides the present Section I, this Explanatory Memorandum contains Sections II to VII. Section II below gives the salient features of the IUC and access deficit charge (ADC) regime notified in January 2003. The estimated amount of ADC was large, and was to be collected only from calls involving fixed line subscribers either at one end or both ends. This meant that the IUC/ ADC charges differed widely for calls from and to fixed line, cellular mobile and wireless in local loop with limited mobility (WLL(M)). Moreover, two kinds of ADC regimes were specified, one with uniform ADC and another with ADC escalating with distance. With ADC being levied only on calls involving fixed line, the cellular mobile and WLL(M) service providers had greater flexibility in offering lower tariffs in comparison to fixed line calls, specially when fixed line was involved at both ends. This would have affected the competitive possibilities available to the three competing services, with the competitive ability of fixed line being restricted to a very large extent. Section III notes that the different IUC charges led to major problems in implementation, and that the actual tariffs that were implemented by the fixed line incumbent were below the IUC plus ADC amounts. Had they been above IUC plus ADC, fixed line would gradually have lost major part of its business thus forcing them to propose tariffs below costs. The Authority had to approve these tariffs, to allow fixed line to continue in business. The sustainability of the notified IUC/ ADC regime therefore became questionable. This as well as a number of other comments justifying a review of the regime led the Authority to begin a Consultation Process for the review. Section IV gives a summary of the main issues arising from the Consultation process. Based on the comments and new data obtained during the consultation process, interaction with experts, and further analysis of the various aspects of the IUC/ ADC regime, the Authority has now completed its review. Section V gives various features of the review, including the

methodology followed, the funding already available with BSNL, the cost of capital and operating costs used in the review exercise, the changes in the estimates of costs/revenue, and the effect of these changes on the estimates of access deficit obtained under the review. Section V also addresses the issue of who should be paid for the access deficit, who should fund the deficit amount, and a number of other issues that arose during the consultation process. Section VI summarises the main features of the new IUC/ ADC regime following the review, and Section VII gives the main principles that have been emphasised in this review so as to provide a broad policy perspective on the new regime.

## **II. Some Salient Features of the Prevailing Regime**

4. The access deficit charge (ADC) under the 24<sup>th</sup> January IUC Regulation was imposed on all long distance calls which involved fixed line subscriber at either or both ends. This facilitated the collection of ADC, and linked it to calls made/received by fixed lines. Two different options for ADC regime were given, one with uniform ADC for most long distance categories, and another with ADC increasing with distance. For domestic long distance calls, an indication of the previous IUC/ADC regime can be obtained from **Tables 1 and 2**. The ADC amounts to fund the access deficit can be seen by deducting Rs. 0.25 per minute as origination/termination charge and the applicable carriage charges from the amounts shown in **Tables 1 and 2** for fixed line calls. Clearly, if the tariffs for different services have to exceed the IUC amounts, it would be evident from a comparison of the figures in **Tables 1 to 4** that fixed services would increasingly lose business due to high tariffs, perhaps later requiring even higher levels of ADC per minute for fixed line calls, making such services even more unviable.
5. The termination charge for fixed line (at Rs. 0.25 per minute) was lower than those applicable to cellular mobile and WLL (M) and these charges

for the latter two services differed among metros and circles, to reflect the differences in costs with the data that was available at that time. These charges for WLL(M) and cellular mobile were Rs. 0.30 per minute for metro and Rs. 0.40 per minute for circle.

**TABLE 1**

**Illustrative IUC plus ADC Charges as applicable under the IUC Regulation of January 2003**

<b>(INTRA CIRCLE)</b>								
	<b>&gt; 500 Kms</b>		<b>200 – 500 Kms</b>		<b>50 - 200 Kms</b>		<b>0 - 50 Kms</b>	
	<b>Uniform ADC</b>	<b>Non uniform ADC</b>	<b>Uniform ADC</b>	<b>Non uniform ADC</b>	<b>Uniform ADC</b>	<b>Non uniform ADC</b>	<b>Uniform ADC</b>	<b>Non uniform ADC</b>
<b>F – F</b>	5.10	4.60	4.75	4.25	2.45	2.45	0.70	0.70
<b>F – W</b>	3.60	3.35	3.25	3.00	1.95	1.95	0.95	0.95
<b>F – C</b>	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
<b>W – F</b>	3.50	3.25	3.15	2.90	1.85	1.85	0.85	0.85
<b>W – W</b>	2.00	2.00	1.65	1.65	1.35	1.35	1.10	1.10
<b>W – C</b>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<b>C – F</b>	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
<b>C – W</b>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<b>C – C</b>	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80

Based on the ADC charges specified in January 2003 Regulation for calls involving fixed line and the following:

1. WLL(Termination) = 40 p (For same SDCA) and  
50 p (For inter-SDCA)
1. WLL (Origination) = 40 p
2. Cellular(Origination)= 40 p
3. WLL to Fixed termination charge  
= 60 p (For same SDCA) and  
50 p (For Inter-SDCA)
4. Fixed origination charge for calls to Cellular = 60 p
5. WLL(M) to fixed IUC charges are based on IUC Regulation Schedule-I of the IUC Regulation of January 2003 with Schedule V being applicable only for intra SDCA calls.
6. Applicable carriage charges are: Rs. 0.20 per minute for “0 to 50 kms.”, Rs. 0.45 per minute for “50 to 200 kms.”, Rs. 0.75 per minute for “200 to 500 kms.”, and Rs. 1.10 per minute for “beyond 500 kms.”

**TABLE 2**

**Illustrative IUC plus ADC Charges as applicable under the  
IUC Regulation of January 2003**

<b>(INTER CIRCLE)</b>								
	<b>&gt; 500 Kms</b>		<b>200 - 500 Kms</b>		<b>50 - 200 Kms</b>		<b>0 - 50 Kms</b>	
	<b>Uniform ADC</b>	<b>Non uniform ADC</b>	<b>Uniform ADC</b>	<b>Non uniform ADC</b>	<b>Uniform ADC</b>	<b>Non uniform ADC</b>	<b>Uniform ADC</b>	<b>Non uniform ADC</b>
<b>F - F</b>	5.10	6.10	4.75	4.25	4.45	2.45	0.50	0.50
<b>F - W</b>	3.60	4.10	3.25	3.00	2.95	1.95	0.85	0.85
<b>F - C</b>	3.50	4.00	3.15	2.90	2.85	1.85	0.75	0.75
<b>W - F</b>	3.60	4.10	3.25	3.00	2.95	1.95	0.85	0.85
<b>W - W</b>	2.10	2.10	1.75	1.75	1.45	1.45	1.20	1.20
<b>W - C</b>	2.00	2.00	1.65	1.65	1.35	1.35	1.10	1.10
<b>C - F</b>	3.50	4.00	3.15	2.90	2.85	1.85	0.75	0.75
<b>C - W</b>	2.10	2.00	1.65	1.65	1.35	1.35	1.10	1.10
<b>C - C</b>	1.90	1.90	1.55	1.55	1.25	1.25	1.00	1.00

Based on the ADC charges specified in January 2003 Regulation for calls involving fixed line and the following:

1. WLL(Termination) = 50 Paise/ Min
2. WLL(Origination) = 50 Paise/ Min
3. Cellular(Origination)= 40 Paise/ Min
4. Cellular to Fixed termination charge  
= 50 Paise beyond 50 Km and  
15 Paise up to 50 Km
5. Fixed origination for calls to cellular = 50 Paise
6. WLL(M) to fixed IUC charges are based on IUC Regulation Schedule-I of the IUC Regulation of January 2003, with Schedule V being applicable only for intra SDCA calls.
7. Applicable carriage charges are: Rs. 0.20 per minute for "0 to 50 kms.", Rs. 0.45 per minute for "50 to 200 kms.", Rs. 0.75 per minute for "200 to 500 kms.", and Rs. 1.10 per minute for "beyond 500 kms."

**TABLE 3****Comparison of Tariffs and IUC plus ADC Charges as applicable under the IUC Regulation of January 2003**

<b>(INTRA CIRCLE)</b>								
	<b>&gt; 500 Kms</b>		<b>200 – 500 Kms</b>		<b>50 - 200 KMs</b>		<b>0 - 50 KMs</b>	
	<b>IUC + ADC under Uniform ADC regime</b>	<b>Applied tariffs</b>	<b>IUC + ADC under Uniform ADC regime</b>	<b>Applied tariffs</b>	<b>IUC + ADC under Uniform ADC regime</b>	<b>Applied tariffs</b>	<b>IUC + ADC under Uniform ADC regime</b>	<b>Applied tariffs</b>
<b>F - F</b>	5.10	2.40	4.75	2.40	2.45	1.20/ 2.40	0.70	0.40
<b>F - W</b>	3.60	2.40	3.25	2.40	1.95	1.20/ 2.40	0.95	0.80
<b>F - C</b>	1.20	2.40	1.20	2.40	1.20	2.40	1.20	2.40
<b>W - F</b>	3.50	2.40	3.15	2.40	1.85	1.20/ 2.40	0.85	0.80
<b>W - W</b>	2.00	2.40	1.65	2.40	1.35	1.20/ 2.40	1.10	0.40
<b>W - C</b>	1.00	2.40	1.00	2.40	1.00	2.40	1.00	2.40
<b>C - F</b>	1.20	1.80	1.20	1.80	1.20	1.80	1.20	1.80
<b>C - W</b>	1.00	1.80	1.00	1.80	1.00	1.80	1.00	1.80
<b>C - C</b>	0.80	1.40	0.80	1.40	0.80	1.40	0.80	1.40

Based on the BSNL tariffs prevailing in June 2003 for fixed line, cellular mobile, and WLL(M), and the ADC charges specified in January 2003 Regulation for calls involving fixed line and the following:

1. WLL(Termination) = 40 p (For same SDCA) and  
50 p (For inter-SDCA)
2. WLL (Origination) = 40 p  
Cellular(Origination) = 40 p
3. WLL to Fixed termination charge  
= 60 p (For same SDCA) and  
50 p (For Inter-SDCA)
4. Fixed origination charge for calls to Cellular = 60 p
5. WLL(M) to fixed IUC charges are based on IUC Regulation Schedule-I of the IUC Regulation of January 2003 with Schedule V being applicable only for intra SDCA calls.
6. Applicable carriage charges are: Rs. 0.20 per minute for "0 to 50 kms.", Rs. 0.45 per minute for "50 to 200 kms.", Rs. 0.75 per minute for "200 to 500 kms.", and Rs. 1.10 per minute for "beyond 500 kms."
7. Two amounts given as applied tariffs for "50 – 200 kms" are respectively the tariff for "50 – 100 kms." and "100 – 200 kms."

**TABLE 4****Comparison of Tariffs and IUC plus ADC Charges as applicable under the IUC Regulation of January 2003**

<b>(INTER CIRCLE)</b>								
	<b>&gt; 500 Kms</b>		<b>200 - 500 Kms</b>		<b>50 - 200 Kms</b>		<b>0 - 50 Kms</b>	
	<b>IUC + ADC under Uniform ADC regime</b>	<b>Applied tariffs</b>	<b>IUC + ADC under Uniform ADC regime</b>	<b>Applied tariffs</b>	<b>IUC + ADC under Uniform ADC regime</b>	<b>Applied tariffs</b>	<b>IUC + ADC under Uniform ADC regime</b>	<b>Applied tariffs</b>
<b>F - F</b>	5.10	4.80	4.75	4.80	4.45	2.40	0.50	0.80
<b>F - W</b>	3.60	4.80	3.25	4.80	2.95	2.40	0.85	1.20
<b>F - C</b>	3.50	3.60	3.15	3.60	2.85	2.40	0.75	2.40
<b>W - F</b>	3.60	4.80	3.25	4.80	2.95	2.40	0.85	0.80
<b>W - W</b>	2.10	4.80	1.75	4.80	1.45	2.40	1.20	1.20
<b>W - C</b>	2.00	3.60	1.65	3.60	1.35	2.40	1.10	2.40
<b>C - F</b>	3.50	3.60	3.15	2.40	2.85	1.80	0.75	1.80
<b>C - W</b>	2.10	3.60	1.65	2.40	1.35	1.80	1.10	1.80
<b>C - C</b>	1.90	1.80	1.55	1.80	1.25	1.80	1.00	1.80

Based on the BSNL tariffs prevailing in June 2003 for fixed line, cellular mobile, and WLL(M), and the ADC charges specified in January 2003 Regulation for calls involving fixed line and the following:

1. WLL(Termination) = 50 Paise/ Min
2. WLL(Origination) = 50 Paise/ Min
3. Cellular(Origination)= 40 Paise/ Min
4. Cellular to Fixed termination charge  
= 50 Paise beyond 50 Km and  
16 Paise up to 50 Km
5. Fixed origination for calls to cellular = 50 Paise
6. WLL(M) to fixed IUC charges are based on IUC Regulation Schedule-I of the IUC Regulation of January 2003, with Schedule V being applicable only for intra SDCA calls.
7. Applicable carriage charges are: Rs. 0.20 per minute for "0 to 50 kms.", Rs. 0.45 per minute for "50 to 200 kms.", Rs. 0.75 per minute for "200 to 500 kms.", and Rs. 1.10 per minute for "beyond 500 kms."

6. The estimated access deficit for the whole fixed line sector was a large amount. This included the deficit arising due to cost based rentals being higher than the applicable rentals, the cost of free calls, and the deficit arising due to the tariffs being below cost for long distance calls which cover “0 to 50 kms.” The funding of this amount, which was an estimated total of Rs. 13,000 crores per annum, had to be from the net surplus generated by local call revenues as well as from the long distance call revenues. An important factor to consider in this context is that this access deficit has been calculated with a formula that provides for a reasonable return on the investment made, i.e. a return on capital employed of 13.78%; their actual return for BSNL in 2001-2002 was only 7.53% without any government grant being taken into account. For 2002-2003, the provisional estimate for BSNL’s return on capital employed (without any government grant) was 1.06%.
7. The task of funding such a large access deficit is difficult because the amount is a large share of the total revenue of the telecom sector, i.e. this share was about 30 per cent. Compared to this situation, other countries have much smaller access deficit as a share of overall revenues. An example of this can be seen from the estimates shown below

<b><u>Country</u></b>	<b><u>Share of ADC in Sector Revenue (%)</u></b>
Argentina	0.8
Australia	1.5
Bolivia	3.5
Canada	2.3
Chile	0.2
Colombia	2.5
France	3.5
India	30.0
Norway	2.2
Peru	1.0

South Africa	0.3
Sweden	1.0
Switzerland	2.0
United Kingdom	0.2
United States	6.0

8. The lower ADC in other countries is partly due to tariff re-balancing having been achieved to a substantial degree in several of these countries before liberalization, and the revenues both on local access and rentals and calls being higher on average than those for India. In India's case, tariff re-balancing began in a limited manner after liberalization, and though there was an increase in monthly rentals and decrease in long distance calls, the increased monthly rentals ranged between Rs. 70 to Rs. 250 per month, and the highest domestic long distance call charge per minute after the re-balancing was specified as Rs. 21.60 per minute. Last year, the average monthly rental revenue for BSNL was Rs. 156 and the ARPU was about Rs. 550 per month.
9. While the long distance call charges in India have decreased substantially after introduction of competition in NLD/ILD sectors, the monthly rentals have remained unchanged from these levels. This has had a strong impact on ARPUs decreasing towards Rs. 500 per month. In comparison, the ARPUs in developed countries, which have achieved major tariff re-balancing, are much higher. **Since higher tariffs and ARPUs are not sustainable for India, especially in view of our objective to have a rapid growth in tele-density, it is important to cover the access deficit for some years till a reasonable stable consumer base is developed, which can be sustainable, despite low rentals and tariffs.**



**III. Problems in Implementation of the IUC Regime Notified in January 2003**

10. The Authority received for approval, tariff reports from the major basic operators only a few days before the implementation date, and also received comments from the service providers that there were technical problems in implementing the IUC regime. The Authority established a co-ordination Committee to sort out the technical problems, and since the approved tariff plans also required to be widely publicized, the Authority deferred the date of implementation to 1<sup>st</sup> May 2003. The Authority was able to address the technical problems with the help of the Committee set-up for the purpose.
11. An examination of the fixed line tariffs reported for approval by the incumbent BSNL showed that these tariffs were below the levels required to cover the IUC plus ADC amounts, i.e. they were in effect below the costs embodied in the IUC/ ADC regime. The Authority was forced to accept tariffs of the incumbent BSOs which were much lower than the IUC plus ADC charges, mainly on the grounds that below cost prices being charged by the incumbent operators were not designed to kill competition, but to survive in business and hence were not predatory in nature. Obviously, such lowering of tariffs in the alternative tariff packages (ATPs) and the acceptance by the Authority has severely impacted the recoveries of ADCs amounts encompassed in the prevailing regime. This would be clear from a comparison of the IUC plus ADC charges with the applied tariffs that are given in **Tables 3 and 4**. Consequently, the other BSOs also had to reduce tariffs to below cost levels, thus necessitating a re-look at the regime.
12. Further, the Authority had received several communications from the service providers who were to implement the IUC regime and they had also pointed out during consultation meetings, a number of issues that required the Authority to review the IUC regime. Issues raised included

inter alia possible consistency of the IUC regime as specified under different Schedules, whether all basic service operators should get the ADC, the sustainability of the IUC regime under which the ADC was loaded only on calls that had fixed subscriber at either or both ends and not on other calls which made the fixed calls less competitive, the tariffs reported by BSNL which showed relatively lower than IUC tariffs for intra-circle calls based on the fact that it could not otherwise compete with cellular mobile, the sustainability of such tariffs, claims that cost of carriage was higher than the carriage charges specified by the Authority for national long distance calls, and that the IUC charge of Rs. 5.50 per minute for termination of international traffic would give rise to grey market operations in international calls.

13. The fact that competition was pressurising operators to give tariffs which would not fully cover the IUC especially for intra-circle calls, became even more evident as the tariffs started declining further. The possibility of the tariff decline especially for cellular mobile and WLL (M) becomes clear if we consider the amounts that would cover the IUC charges for different types of intra- and inter-circle calls (**Tables 1 and 2**) and compare them with the tariffs actually implemented (**Tables 3 and 4**). The conflict between the IUC figures and the various tariffs also becomes clear if we consider the fact that under the alternative tariff packages for intra-circle calls, BSNL had specified peak tariffs of Rs. 2.40 per minute, i.e. substantially higher than the amounts that could be charged by the others (please see **Tables 3 and 4**). Even this tariff, for fixed to fixed calls, is lower than the tariffs that would arise from the IUC consistent amounts but as mentioned above, the Authority had to approve these tariffs because BSNL justified these tariffs as non-predatory on the grounds that it had to offer them in order to compete with cellular mobile and not to eliminate competition.
14. In addition to accepting the below-IUC tariffs, the Authority made an interim change in the IUC regime vide Order No 311-9/2003-Eco dated

1<sup>st</sup> July 2003. As a result, the originating operator could retain the residual amount after paying for carriage and termination, clearly indicating that if the originator reduced tariffs to remain in business, his margin plus origination charge should get squeezed and not the other charges.

15. Based on comments received, the Authority decided to review the regime.

#### **IV. Consultation Process for the review exercise**

16. The Authority issued a Consultation Paper to review the IUC regime, on 15<sup>th</sup> May, 2003 which sought comments of the stakeholders under four categories of issues:

- Interconnection Usage Charges
- Access Deficit Charges
- Tariffs
- Calling Party Pay Regime

17. During the Consultation process the Authority received several comments, which gave rise to a number of action points that required examination by the Authority. These are summarized below.

18. The issues relating to Access Deficit Charge were:

- Need to reassess the amount of ADC after taking into account various compensations provided;
- Whether MTNL and private BSOs should be given ADC in light of their presence in urban areas and the roll-out obligations remaining mostly unmet by the private BSOs operating in circles;

- Recovery of ADC from long distance calls would become difficult because the competitive tariffs for long distance calls from Cellular/ WLL networks would lead to a shift of such traffic to these networks;
- Whether funding of ADC should be linked with roll out of BSOs;
- Whether the ADC funding should continue for the foreseeable future or a cut-off date should be specified after some years;
- Should the funding of ADC be also from types of calls not covered under the 24<sup>th</sup> January 2003 Regulation by imposing access deficit charges over all types of calls;
- Review possible reduction in the amount of ADC for ILD calls to address grey traffic;
- Applicability of ADC for roaming subscribers;

19. The issues relating to termination/ carriage/ origination charges under the IUC regime were:

- There should be greater clarity in the Schedules of the IUC Regulation, especially the linkages and consistency between the different Schedules;
- Need to streamline the granularity of pulse rate for settlement of interconnect charges amongst operators;
- Clarification as to whether IUC inter-operator settlement should be on call by call basis or gross minutes at the POI;
- Desirability of having identical termination charges to simplify implementation;
- Implementation difficulties of IUC in case of calls from PCOs
- Representation of ISPs, Radio Paging Service Providers for having a termination charge;
- Termination charges for IN calls and SMS;
- IUC for origination to be higher than termination;
- The termination charge for Cellular Mobile Services should be re-examined/ increased

- ILD termination charge for calls terminating in CMSPs need re-examining
20. Tariff related issues were:
- Local call pulse rate for calls from Fixed Line to WLL (M) and Cellular call should be identical since the IUC for such calls is identical.
  - There is no justification for providing Port Charges subsequent to IUC implementation.
21. There were other comments too which related to issues such as:
- NLDO to NLDO transit
  - Same termination for WLL (M) as cellular
  - Off peak IUC charges to be prescribed
  - BSNL mandates delivery of calls from other BSOs at SDCA tandem, and it should allow delivery at LEVEL II TAX also;
  - Whether the prescribed charges are NLD ceilings or the amounts of charges specified;
  - ADC should be adjusted to take into account the fact that operators are offering ATP with lower rentals and local call charges
  - Termination charge parity between own network and other networks i.e., Fixed to WLL (M) in own network and Fixed to WLL (M) in other networks

**V. Further Analysis and Review of the IUC Regime**

22. In its review of the IUC regime notified on 24<sup>th</sup> January 2003, the Authority considered the methodology used to calculate the ADC, the amount of ADC and who should get the ADC funding, practices adopted in other countries in this regard, the various sources of funding the access deficit, mechanisms for collection and distribution of the ADC

amounts, overlap between the ADC regime and the USO Funding, more recent and more complete information on costs and traffic, and possibility of phasing out the ADC regime over time and merging it with the USO regime.

**(a) The methodology**

23. The Authority considered the framework used for calculating the IUC under the previous exercise, and noted that the cost basis used had been historical average costs from audited accounts of BSNL. It noted that for costing purposes, several countries had used Forward Looking Long Run Incremental Costs (FLLRIC), i.e. a methodology under which only a portion of stranded costs (or costs arising due to past high equipment prices or old technologies) is included in the calculation of costs.
  
24. The Authority noted that the difference between historical costs and forward looking costs would be large, and relying on costs based only on modern and forward looking technologies would imply a large burden from the stranded costs for BSNL. While the Authority feels that change over to FLLRIC model is imperative, it examined the implications of a sudden changeover against a gradual changeover. Since BSNL is the major supplier of telecom services in the country and has also contributed the maximum for achieving the targets of rural tele-density and in supporting low paying subscribers, a changeover to FLLRIC at present would adversely affect the services provided not only to rural and low paying subscribers but also the telecom industry in the country as a whole. The Authority noted that BSNL is already deploying latest technology and lower cost equipment in its expansion programme. Since wireless technology is being used, it is expected that some of the existing network will also be gradually replaced by such equipment. In short, the approach is to achieve full shift to FLLRIC cost in a gradual manner over a few years rather than a single year change.

The latter would leave heavy stranded cost and would be quite impractical. The Authority therefore, decided to rely on costs for the current year, based on as recent audited costs as possible. For this purpose, it worked with more recent data than was used in the initial IUC exercise. The Authority was of the view that with the changes in technology and a reduction in equipment costs taking place rapidly, the amount of funding required for ADC would decline. Over time, within a few years, therefore, it may be possible to do away with the ADC regime, and the ADC regime could be merged with the USO regime. This would be similar to the situation in most other countries, where the ADC regime had been combined with the USO regime, rather than the ADC funding being provided through a separate ADC regime.

25. The Authority decided to use more recent data compared to the previous review because this is now available. For BSNL, this has meant using data from the balance sheet for the year 2002-2003. This has been used together with recent data on minutes of use, effective monthly rental revenue per subscriber in different Circles, call revenue etc obtained from BSNL. Other basic service operators were also asked to submit their cost data and recent information on traffic flows (minutes of use), so that the access deficits applicable to them could also be calculated. Most service providers submitted the information required, but their data was unaudited, while the main cost data used by the Authority for BSNL has been provided after examination by the auditors.
26. The available information was used to obtain the picture for 2003-2004. For BSNL, since the cost attributed to cellular mobile services have been removed by the Authority and the extent of WLL(M) installations are minor, the aggregate costs applicable for fixed line to 2002-2003 were taken to be applicable to 2003-2004 also. For the purpose of ADC, this could be considered as the gradual introduction of forward looking long run incremental costs in calculation of the IUC/ADC.

**(b) Concessions and grants provided by the Government to BSNL**

27. The Authority sought clarification from the Government on the financial assistance that it was providing to BSNL for meeting its rural telecom targets. This information was used together with the cost information to estimate the relevant amounts that should be considered for the ADC regime. The details are given in the paragraphs below.
  
28. Thus, while the general methodology for calculating the access deficit is similar to the one that was used in the IUC Regulation dated 24<sup>th</sup> January 2003, an important difference is the adjustment from the access deficit amount for the concessions or grants provided by the Government to BSNL. Under the previous methodology, the USO amounts required would have been adjusted taking account of the IUC/ADC payments for the target phones. In the present exercise the concessions and grants to BSNL are being deducted in the calculation of ADC itself. These concessions and grants affect the calculation of both the weighted average cost of capital (WACC) and the amounts of operational cost deficit that need to be funded through the access deficit charge. Therefore, before we begin with a discussion on the other aspects of the IUC regime, it would be appropriate to consider the recent announcements by the Government on the concessions and grants provided to the BSNL.
  
29. For calculating access deficit that should be funded through the access deficit charge for the year 2003-04, the Authority considered the financial support provided to the BSNL through the package of concessions provided by the Government. The recent concessions have been communicated to the Authority by the Department of Telecom vide letter number 5-131/2001-LTP dated 18.9.2003. This communication shows that:



- (a) The reimbursement of the license fee and spectrum charges to BSNL is made available beyond 2002-03 for a period of one year. The re-imburement of license fee to the BSNL would be after deducting the component of USO contribution.
- (b) The moratorium on repayment of principal and interest on Government loan to BSNL is to be extended upto 31.3.2005.
- (c) The equity included in the capital structure of BSNL should be subject to a dividend of not more than 10% during the 10<sup>th</sup> plan period.
- (d) The concessions have been provided to enable the BSNL to incur additional capital expenditure for rolling out of telecom network in rural areas equivalent to about 10 lakh lines.

30. Regarding item (a) above, the Authority decided to make suitable adjustments in the BSNL costs for the year 2002-03 as a starting point in the exercise. The amount of reimbursement of licence fee, which is likely to be Rs. 2300 Crores, is being treated as capital grant from the Government to provide additional DELs in the rural areas. Accordingly, the annual cost for capital employed in Access network was recalculated by deducting depreciation and return on capital employed admissible on the amount that has been refunded to BSNL. In addition, for calculating the cost based monthly rental, the Authority has reduced the number of DELs by 10 lakhs, i.e. same as the number of DELs that are to be installed using the capital amount provided to BSNL through the concessions mentioned above.

31. The method of treating the assistance as capital cost is employed because the Government has clarified in its communication that the amount provided to BSNL is for installing additional about 10 lakh lines. If such a requirement were not there, the Authority would have deducted the total amount of assistance from the annual operational costs of BSNL. This would have

reduced the access deficit by a larger amount. However, to the extent that the assistance provided to BSNL is treated as capital expenditure, the benefit from this assistance would continue in the future also. This has been the basis for making the adjustment given below.

32. The provisional balance sheet for 2002-03 of BSNL shows another compensation of Rs 720 crores as capital grant. This amount has also been reduced from the annual cost for incurring capital expenditure in the Access network, by excluding from the overall capital cost and depreciation for the Access network, the depreciation and cost of capital pertaining to this amount (i.e. to Rs. 720 crores). Any additional amount that is to be provided by the Government to BSNL or other BSOs for its USO programme would also need to be adjusted from the estimated ADC amount.

33. The other above-mentioned items provided under the concession scheme of the Government to BSNL affect the pre-tax WACC and Return on Capital Employed for the access network. With these concessions, the cost of equity (post tax) gets reduced: this cost was calculated as 10%. The moratorium on payment of principal and interest on Government loans means that for the prevailing year, these loans are being provided free of cost to BSNL. Thus, the cost of government loans is 0%. The adjustment made in these cost components were then taken together with the other cost components of the weighted average cost of capital. All the other funds including reserve and surpluses were taken at original cost estimates. With these changes reflecting the concessions, the revised pre-tax WACC estimate becomes 12.21% for the purpose of calculating the return on capital employed for the Access network, in order to give the amount of access deficit that has to be funded for BSNL.

34. Since the above WACC incorporates the concessions given by the Government to BSNL, it is appropriate for calculating the access deficit amounts that remain uncovered even after the provision of concessions by the Government. However, the above WACC is not appropriate for calculating the cost based IUC for carriage and termination, because these estimates have to be

based on full relevant costs without any adjustment for concessions given to BSNL. Thus, for IUC calculations, the WACC without any effect of concessions given to BSNL is the appropriate parameter. For calculating the relevant cost based IUC (i.e. termination and carriage charges), the Authority has thus used the WACC without adjusting for the concessions provided to BSNL. Excluding the adjustment for concessions provided by the Government to BSNL, the WACC is 13.93%.

**(c) Cost of capital and Operating Costs for the IUC exercise**

35. The distribution of CAPEX is based on the shares in CAPEX of the thirteen different network elements that were provided by BSNL in the context of the Reference Interconnection Offer (RIO) exercise, and were used in the previous calculation of IUC. The OPEX was also distributed across these elements in the same ratios as CAPEX. For the IUC exercise, the cost based monthly rental was determined on the basis of cost of capital employed and depreciation for the year (CAPEX) from end-user up to (but not including) the SDCC (i.e. network elements 1, 2, 3, 6 and 7 in **Table 5**). The cost based rental is calculated after making the adjustments for the compensation given by the Government to BSNL.

<b>Table 5</b>			
<b>Apportionment of CAPEX + Depreciation and OPEX to different network elements based on BSNL Annual Account 2002 - 03</b>			
	<b>Network Element</b>	<b>Annual Depreciation + Cost of Capital</b>	<b>Annual Opex</b>
		<b>in Rs Crore</b>	<b>in Rs Crore</b>
1	Access Loop	7243	4859
2	Local Exchange	3429	1808
3	SDCC Tandem	214	113
4	Intra-LDCA (Level II TAX)	219	111
5	Inter-LDCC Intra Circle + Inter Circle (Level I)	219	111
6	LE-SDCC Transmission Systems	549	290
7	LE-SDCC Transmission Systems Length (Avg 10km)	1024	687
8	SDCC-LDCC Tax Transmission	116	59
9	SDCC-LDCC Tax Transmission Length (Avg 40 km)	538	342
10	Inter-Tax Transmission System (Intra-Circle)	54	27
11	Inter-Tax Transmission Length (Intra-Circle) (SDH Rings)	229	146
12	Inter-Tax Transmission SDH16 System (Inter-Circle)	57	29
13	Inter-Tax Transmission Length (Inter-Circle) (SDH Rings)	456	290
	<b>Total</b>	<b>14348</b>	<b>8870</b>

36. The Authority also examined the principle, as it had done previously, whether the cost based monthly rental should be based on the allocation of costs attributable to non-traffic sensitive part of the network. This is more in line with the pricing principles under which the cost of local calls should be linked to incremental or traffic sensitive costs. The Authority considered this matter again with the revised cost data and the applicable routing principles. Even now, if the monthly rentals are calculated based only on non-traffic sensitive portion of the network, the cost of local call becomes higher than the amount sustainable under the prevailing tariff regime. Thus, such a cost attribution would imply an increase

in local call charge, which the Authority did not favour imposing. Thus, the Authority decided to continue with its previous methodology of cost allocation for determination of monthly rentals and call charges. The Authority did, nonetheless, feel that by the time the next review of the IUC regime is conducted, the situation may have changed to make such a cost allocation more acceptable.

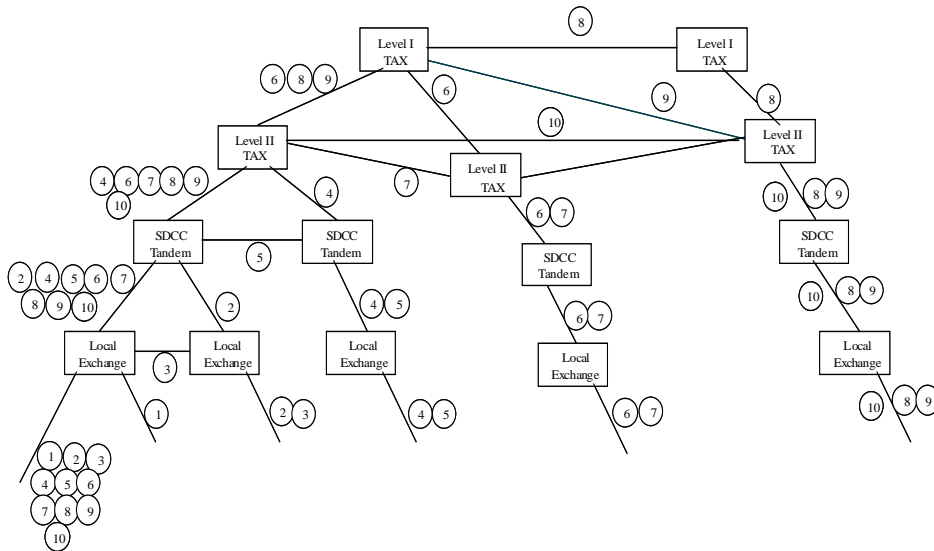
37. The cost of a local call was determined on the basis of operational costs (OPEX) within the local call area. For this purpose, the operational costs covering the same elements as for cost based rentals, were divided by the total minutes of use that were relevant for each of the corresponding network elements (please see **Table 6**). To derive the relevant minutes of use, the Authority used the routing factors that were determined on the basis of discussions with BSNL as well as experts (Please see **Figure I** for the routing schemes). This process allocates this joint cost among the various types of calls (local/ long distance and intra-network/ inter-network) on the basis of minutes of use.

<b>Table 6</b>		
<b>Network element wise Minutes of Use (MOU)</b>		
	<b>Network Element (N.E.)</b>	<b>MoU per sub per year</b>
1	Access Loop	11405
2	Local Exchange	11011
3	SDCC Tandem	7116
4	Intra-LDCA (Level II TAX)	3043
5	Inter-LDCC Intra Circle + Inter Circle (Level I)	939
6	LE-SDCC Transmission Systems	10618
7	LE-SDCC Transmission Systems Length (Avg 10km)	10618
8	SDCC-LDCC Tax Transmission	3457
9	SDCC-LDCC Tax Transmission Length (Avg 40 km)	3457
10	Inter-Tax Transmission System (Intra-Circle)	1447
11	Inter-Tax Transmission Length (Intra-Circle) (SDH Rings)	1447
12	Inter-Tax Transmission SDH16 System (Inter-Circle)	421
13	Inter-Tax Transmission Length (Inter-Circle) (SDH Rings)	421

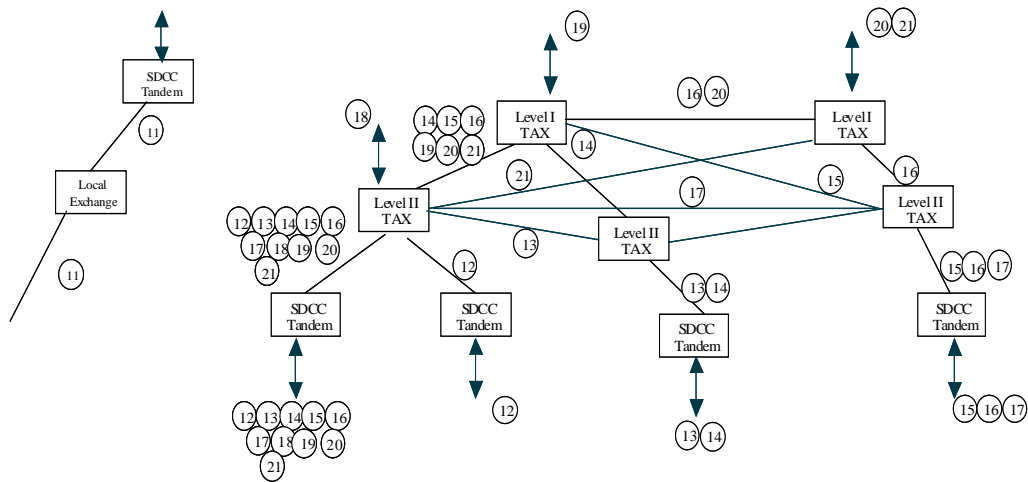
**Figure I**

**Route diagrams**

**BSNL to BSNL calls**



**BSNL to and from other network calls**



38. The routing factors and applicable minutes of use were also used for determining the costs attributable for carriage of long distance calls. For this purpose, the Authority considered both the CAPEX and OPEX applicable to long distance, i.e. network elements other than those relevant for cost based rentals in **Table 6**.

39. The starting point for the analysis under the review is the same as in the previous case, namely calculation of the cost of capital, depreciation, and operational cost for BSNL. To assess the proper components of the analysis, the Authority first examined the calculations made in the initial exercise with the data for 2001-2002. Some changes were made in this regard (please see below), based on detailed analysis which included consultations on the network usage pattern etc. with external experts as well as experts from the industry. The Authority first considered these changes with respect to the cost data used in the initial exercise, i.e. the balance sheet information of BSNL for 2001-2002, and then applied them to the more recent data.

**(d) Certain changes in the initial estimates**

40. The Authority noted that there was a need to make the following changes, the first two of which had opposite effects on the cost of a local call, when considered together.

- i. One, the CAPEX for the Network “LE to SDCC Transmission Length” had been included as part of the cost base for determining the cost of a call. This was to be allocated only for the determination of the cost based monthly rental. This adjustment reduced the cost of a local call.
- ii. Second, the routing factors for calls used in the previous exercise were re-examined and refined based on new traffic data and discussions with BSNL and outside experts. This led to a change in the routing factors used and in a reduction in the number of minutes

attributable for calls. This adjustment increased the cost of a local call.

- iii. As shown by the estimates given later, the net result of the above two changes was to keep the local call cost unchanged in comparison to the previous estimate, but there was some increase in the cost of carriage for certain long distance calls.

41. The Authority then addressed the weighted average cost of capital (WACC) used for BSNL, based on the recent data provided for 2002-2003. The WACC for BSNL has increased slightly from 13.78% in 2001-2002 to 13.93% in 2002-2003, because of a reduction in the debt of BSNL. As mentioned above, while this estimate has been used for the IUC exercise, a WACC of 12.21% has been used for calculating the access deficit of BSNL that needs to be funded.

42. Regarding depreciation costs, the Authority considered the depreciation amount that had been specified by BSNL in its audited accounts. The Authority noted that in its accounts, BSNL has used the Written Down Value (WDV) method of depreciation. With a WDV method of depreciation, in comparison to the Straight Line Method (SLM), the depreciation amounts are larger in the initial years and lower in the later years. The Authority decided that it would use the SLM for calculating depreciation, as this is also a commonly used method for depreciation in cost analysis, and would bring the costs closer in terms of capturing nominal depreciation costs allocated equally over the life-time of the capital equipment. This was also the method that has been used by the Authority in the context of converting capital fixed costs into recurring costs using a factor of ARE, or annual recurring costs.

43. The Authority then examined the various items given in the details of depreciation in the Schedule of the BSNL balance sheet. The amount of depreciation for each item was converted into a depreciation rate. This depreciation rate in turn gave an indication of the corresponding estimate of life-time for each of the relevant capital cost items, using a framework of straight line



method for depreciation. Discussions with experts and internal analysis suggested that the corresponding estimates for lifetimes of all the items were within the reasonable ranges, except for cable and buildings. For cables and buildings, the corresponding lifetime with a straight line method, came much less than was reasonable. The Authority took the lifetime of 18 years for cables and 58 years for buildings, which were the same as the life-time for these items used by BSNL in its accounts, but applied an implicit straight line depreciation rate corresponding to these life-times instead of the WDV depreciation rates. The net block was suitably adjusted for revised depreciation expense to calculate the cost of capital. This has led to a substantial reduction in the costs due to depreciation, and thus in the amount of access deficit. The weighted average depreciation rate used, based on the economic life of assets (taking 5% as scrap value), is 9%.

44. In the previous IUC exercise, the Authority had considered only 95% of the cost base on the grounds that the revenues being accounted for by telephone services were 95% of the total revenues. The Authority re-calculated this ratio for 2002-2003, and based on more recent data has revised the estimate to 93.6%, i.e. 93.6% of the costs are applicable to telephony. Thus, of the total CAPEX and OPEX, only 93.6% is taken for the purpose of the IUC exercise. Since cellular mobile is part of the telephony service, further adjustments were made to remove the costs attributable to cellular mobile based on the segmental cost statements submitted by BSNL. These accounts provide a basis to remove the capital employed and operational expenditure relating to cellular mobile from the relevant costs, in order to give the estimates applicable for fixed line service.

**(e) Other adjustments to the costs/ revenues for 2002-2003**

45. The Authority has noted that in the costs submitted by BSNL, there is a provision of Rs. 1,384.53 crore on account of arrears of salaries and leave encashment. These arrears are for 30 months, including the 12 months of the financial year 2002-2003. An amount should therefore be deducted from this so as to obtain only the costs relevant to 2002-2003. This has been done by making

a pro-rata correction and reducing the amount by Rs. 830.72 crore for 18 months prior to the period taken under consideration.

46. The above changes provided a basis for the Authority to calculate the cost based monthly rental for BSNL. The cost based rental amount is compared to the monthly rental revenue in order to obtain the deficit on account of rental. The Authority noted that to calculate the amount of deficit that has to be funded from long distance calls, it has to adjust the rental deficit by the net surplus that is available from local calls and calls up to “0 to 50 kms.”. For this purpose, a more accurate amount is based on the actual revenue rather than that estimated subject to certain assumptions about the call pattern and average tariffs applicable to different calls (i.e. free calls, calls charged at the medium tariff rate of Re. 1 or Rs. 0.80 per pulse, and calls at Rs. 1.20). The Authority has obtained from BSNL the amount of local call revenue from local calls, for the year 2001-2002. Based on these revenues and minutes of use for local calls, the per minute call revenue comes to Rs. 0.51 if these calls are taken as comprising also the calls for “0 to 50 kms.”. According to BSNL, they are not in a position to remove all these calls from the local call revenue (if only local call minutes are taken into account, the call revenue per minute is Rs. 0.55). Instead of using estimated excess of local call revenue as specified in the standard tariff package and calculated based on certain simplifying assumptions, the Authority has decided to use the surplus of local call revenues over local call costs. This amount is a substantial surplus, and reduces the amount of access deficit to be funded from long distance calls. This methodology is a changeover that used in the previous IUC exercise, under which the Authority had used estimates for local call revenues based on certain assumptions for the call revenues that would accrue on account of the different call charges (ranging from free call to Rs. 1.20 per pulse) for the local calls and calls within the “0 to 50 kms.” category.

47. Once the actual call revenues over costs for local calls are taken into account, a consistent methodology would be to take the actual monthly rental revenues instead of the notional monthly rentals specified in the standard tariff package. This is justified also because the BSNL has not been allowed to

increase its monthly rentals from the existing levels. The other BSOs are also forced by the market to adopt tariffs similar to those implemented by BSNL. With this background, the Authority has used the actual average monthly rental amount of Rs. 156 for BSNL instead of the Rs. 200/- per month used earlier based on the standard tariff rentals specified by the Authority but not necessarily implemented by the service provider. Further, the revenue share License Fee applicable to monthly rental is applied to the amount of Rs. 156/- per month and not the cost based rental amount.

48. Another amendment made is to adjust the revenues from, and operating expense with respect to, franchisees. The commission paid on account of franchisee service has been treated as pass through to franchisees, which is not available with the operator. Only a small portion of the costs of commission would be relevant for local calls; this has been taken as 10% of the commissions in case of our exercise. Thus, the revenues for local calls have been decreased by 10% of the franchisee commission. The Authority has not taken any of the cost due to franchisee commission as cost to be recovered from ADC funding, and thus the total operational costs of BSNL have been decreased by the full amount of the franchisee commission.

**(f) The effect on access deficit**

49. The implication of taking local call revenue surplus over costs as mentioned above reduces the access deficit not only because of the available surplus to fund the deficit, but also because the costs include the cost of free calls. Thus, this element, i.e. the cost of free calls, is also adjusted out of the estimated access deficit by making the adjustment for the local call revenue surplus. Therefore, the effective deficit that has to be funded from the long distance calls is equal to:

- Deficit due to cost based rental exceeding rental revenue, plus
- Deficit due to costs of “0 to 50 kms.” long distance calls not being covered by the tariffs, minus

- Surplus of local call revenue over local call costs

50. BSNL has provided the Authority with the number of local call minutes for 2002-2003, but has not been able to provide the revenues from local calls. The Authority has used the estimate of revenue per minute of local call in 2001-2002, and multiplied this amount by the local call minutes provided recently by BSNL for the year 2002-2003 for the entire subscriber base. This amount is taken as the revenue from local calls for the year 2002-2003. In the year 2003-2004, the revenue per minute is likely to increase slightly in view of the reduction in the number of free calls and the fact that Rs. 1.20 applies now after 300 metered call units (MCUs) instead of after 500 MCUs as was the case earlier. The estimated increase in call revenue is likely to be about 5 to 6 paise per minute.

51. As mentioned above, the Authority has obtained data on, inter alia, the minutes of use by subscribers of different service providers. Since the data obtained from the service providers is not comprehensive, they do not show consistent estimates. Based on the information submitted by the service providers, the Authority has estimated the minutes of traffic flows among the different services such that these flows are consistent. The data has been made consistent using certain assumptions about traffic flows on different routes, based on discussions with the largest operator, i.e. the BSNL. Based on unaudited data provided by the operators and also by using estimates for BSNL based on their audited data as normated data for other service providers also, the ADC has been calculated for other BSOs. This shows that the BSOs have a high element of reported inefficient costs in comparison to BSNL. The data provided by the BSOs appears to be unreliable because it results in some extreme and even absurd estimates of costs. Their cost based rentals and termination charges are high in comparison to BSNL, in some cases by amounts which do not appear reasonable. The Authority therefore, decided to use the audited BSNL data as a normative.

52. The estimated access deficit for BSNL is shown in **Table 7**, which indicates the impact of various components on the access deficit calculated. The total access deficit amount to be funded for BSNL, after correction for net

revenues from local calls and including the deficit on account of “0 to 50 kms.”, is **Rs. 5,335 crores**. If we take the other basic service operators also into account, and apply the BSNL access deficit per subscriber without the Government compensation to BSNL, the total access deficit amount increases to **Rs. 6,330 crores**.

<b>Table 7 Size of Access Deficit for BSNL</b>		
Cost based rental per sub per month	in Rs	361
Total cost of rental	in Rs crores	14865
Total Rental revenue	in Rs crores	6425
Total Rental deficit	in Rs crores	8441
0-50 kms call deficit	in Rs Crores	216
Free call deficit (taken into account in local call surplus)	in Rs crores	0
<b>Total deficit</b>	<b>in Rs crores</b>	<b>8657</b>
Surplus & compensations		
Local call surplus & funding from surplus in termination charge	in Rs crores	1456
Government compensations	in Rs crores	1865
<b>Net Access Deficit</b>	<b>in Rs crores</b>	<b>5335</b>

**(g) Who should be paid for the access deficit**

53. Another policy issue relates to whether all the basic service operators should be provided access deficit. The Authority asked the other service providers to also give their cost estimates and other relevant data for this exercise. This was obtained from most of them. The results showed that the private basic Service Operators have in general a higher cost compared to BSNL. This is also true when MTNL is compared with BSNL. Likewise the cost based rentals that were calculated for these service providers vary considerably and for

some of them are unreasonably high. The quality of data therefore is not adequate to conduct serious analysis with the information.

54. Nonetheless, the Authority has conducted some additional analysis of the situation regarding access deficit payment. For this the Authority normated some cost estimates and then considered the results. The Authority used the following methodology:

- It normated the cost based monthly rentals to be equal to those of the BSNL. Since private BSOs function in individual circles, cost based rentals of BSNL were obtained for the various circles. These rentals were adjusted to reflect the corrections in depreciation made by the Authority to calculate the national average cost based monthly rental of BSNL.
- For the monthly rental revenue, the Authority used the applicable estimates derived from the data submitted by the BSOs and MTNL themselves.
- For operational costs per subscriber relevant to local calls, the Authority used the estimates based on the costs submitted by the private BSOs for these service providers. For MTNL, the Authority used the costs for BSNL on the grounds that these costs for incumbent operators are likely to be similar. The Authority feels that these costs are likely to be higher for new comers. The BSNL operational costs per subscriber were taken as the normated costs for the purpose of incumbent's (i.e. MTNL's) operational costs per subscriber.

55. With this normation, a number of BSOs continue to have some access deficit, but it is much smaller than the amounts calculated for them on the basis of their cost data. The Authority has noted that in certain cases, the costs have not been provided with the level of detail required to make the requisite estimates. The Authority has also noted that in a number of cases the BSOs have not met

their roll-out obligations, particularly for VPTs that the old BSOs had to install (**Tables 8 and 9 below**). In contrast, most of the rural DELs are provided by BSNL, which also provides connections to a relatively large number of low users. Further, in general if we consider the situation for other countries, the ADC is paid to the incumbent and not to new comers. At the same time, the Authority noted the point made by BSOs that they had been getting access deficit funding since the beginning under their license.

**Table 8**  
**Comparison of License Rollout requirement and actual Roll out for six Old BSOs**

Licensee (Effective Date of License)	Roll out under License within 3 years, compared with Actual Roll Out as on 31-08-2003			
	DELs		VPTs	
	Commitment	Actual Rollout	Commitment	Actual Rollout
Tata Teleservices (30-09-1997)- A.P.	300000	313424	9635	1347
Bharti Telenet Ltd. (30-09-1997)- M.P.	150000	218466	16500	607
Shyam Telelink Ltd. (04-03-1998)- Rajasthan	146909	95129	31834	2796
Tata Teleservices (Maharashtra) Ltd. (30-09-1997)- Maharashtra	607900	283526	25760	2399
HFCL Infocomm Ltd. (30-09-1997)- Punjab	525000	112852	5442	* 869
Reliance Telecom Ltd. (30-09-1997)-Gujarat	288000	261158	8635	4114

\* Replacement of MARR VPTs

Note: Date in bracket is the Effective Date of License

**Table 9****Comparison of coverage of SDCAs under the License and actual coverage for new BSOs in first phase**

Licensee (Effective Date of License)	Commitment as per License/ Actual Rollout	Roll out under License under Phase-I (within 2 years), compared with Actual Roll Out as on 31-08-2003		
		Urban	Semi urban	Rural
Tata Teleservices Ltd. (31.08.2001)-Tamil Nadu	As per License Actual	4 7	16 22	1 1
Tata Teleservices Ltd. (31.08.2001)-Karnataka	As per License Actual	4 5	21 27	4 4
Tata Teleservices Ltd. (31.08.2001)-Gujarat	As per License Actual	4 4	19 20	3 3
Tata Teleservices Ltd. (31.08.2001)-Delhi	As per License Actual	1 1	0 0	0 0
Bharti Telenet Ltd. (8.10.2001)-Haryana	As per License Actual	5 5	6 0	2 0
Bharti Telenet Ltd. (29.10.2001)-Delhi	As per License Actual	1 1	0 0	0 0
Bharti Telenet Ltd. (29.10.2001)-Tamil Nadu	As per License Actual	4 5	16 1	1 0
Bharti Telenet Ltd. (29.10.2001)-Karnataka	As per License Actual	4 3	21 0	4 0

Continued on next page



**Table 9 continued**

Licensee (Effective Date of License)	Commitment as per License/ Actual Rollout	Roll out under License under Phase-I (within 2 years), compared with Actual Roll Out as on 31-08-2003		
		Urban	Semi urban	Rural
Reliance Infocomm. Ltd. (20.07.2001)-Andhra Pradesh	As per License Actual	5 20	21 129	11 45
Reliance Infocomm. Ltd. (20.07.2001)-Karnataka	As per License Actual	4 16	21 101	4 16
Reliance Infocomm. Ltd. (20.07.2001)-Maharashtra	As per License Actual	5 14	31 141	12 42
Reliance Infocomm. Ltd. (20.07.2001)-Punjab	As per License Actual	2 8	7 34	1 2
Reliance Infocomm. Ltd. (20.07.2001)-Rajasthan	As per License Actual	3 6	26 78	12 32
Reliance Infocomm. Ltd. (20.07.2001)-Orissa	As per License Actual	2 6	14 42	4 #3
Reliance Infocomm. Ltd. (20.07.2001)-Madhya Pradesh	As per License Actual	4 10	43 127	9 24
Reliance Infocomm. Ltd. (26.09.2001)-Tamil Nadu	As per License Actual	4 23	16 99	1 1
Reliance Infocomm. Ltd. ((20.07.2001))-Bihar	As per License Actual	3 6	22 62	5 15
Reliance Infocomm. Ltd. (20.07.2001)-West Bengal	As per License Actual	3 10	7 26	3 11
Reliance Infocomm. Ltd. (20.07.2001)-Kerala	As per License Actual	2 12	5 29	3 17
Reliance Infocomm. Ltd. (20.07.2001)-UP (East)	As per License Actual	3 9	20 63	3 10
Reliance Infocomm. Ltd. (20.07.2001)-Himachal Pradesh	As per License Actual	1 0*	4 5	1 2
Reliance Infocomm. Ltd. (20.07.2001)-UP (West)	As per License Actual	4 14	12 42	1 4
Reliance Infocomm. Ltd. (20.07.2001)-Haryana	As per License Actual	2 9	6 31	2 11
Reliance Infocomm. Ltd. (20.07.2001)-Delhi	As per License Actual	1 1	0 0	0 0
Reliance Infocomm. Ltd. (20.07.2001)-A&N Island	As per License Actual	0 0	1 1	0 0

Note: Date in bracket is the Effective Date of License

# As per the information given by M/s Reliance Infocomm to TRAI they have since received the approval of DOT for one more SDCA and hence the roll out obligation is complete.

\* As per the information given by M/s Reliance Infocomm to TRAI they have since received the approval of DOT for Shimla Urban SDCA and hence the roll out obligation is complete.

56. Thus there are reasons to reconsider whether the BSOs should be given access deficit support. At the same time, the Authority would not like to disrupt in a major way the existing regime, nor bring about changes in the ADC regime which could create implementation problems due to inadequate data. The Authority has decided to implement a limited form of the IUC regime for the basic service operators other than BSNL, i.e. they would retain the access deficit amount that pertains to the calls from/to these BSOs based on the principles given in **Schedule II** of this Regulation. They would keep the relevant ADC amounts for all calls originating from them. For all calls that terminate in their network and originate in non-fixed network, they would keep the relevant ADC amount together with the termination charge of Rs. 0.30 per minute. These BSOs, including MTNL, would not get any of the ADC amount that relates to calls from cellular mobile/ WLL(M) to cellular mobile/ WLL(M): the ADC amounts from these calls would be provided only to BSNL.

57. The Authority has also decided that it would obtain more detailed audited cost information to assess the relevant ADC for BSOs, and would also consider phasing it out after the next review. This phasing out may be earlier than the overall phasing out of the access deficit regime that the Authority will consider, merging the ADC regime into the USO regime after a few years. This would require detailed consultation with the Government. Another alternative for the Authority to consider, would be whether the payment of access deficit should be linked to rural roll-out, either based only on such a roll-out, or based on giving greater weight to such roll-out in payment of funds to recover the access deficit.

58. For BSNL and MTNL, to the extent that the amount of ADC does not cover the full amount of the deficit over time, the Authority noted that they have benefited on account of being allowed entry into cellular mobile without any entry fee. The Authority also hopes that the deficit would be made good by the profits that these organizations will earn from their cellular mobile and WLL(M) services, bearing in mind the rapid subscriber growth being experienced by these services. This is important to allow more flexibility to the tariff developments, which are a

major contributory factor in spurring growth, teledensity and commercial activity in the country. The Authority will be examining all these factors in greater detail at the time of the next review of the ADC regime.

**(h) Other points**

59. The Authority also considered a number of other points, the salient among which are mentioned below.

**No origination charge**

60. A number of comments were received that the termination charge of a call should be below the origination charge because the originating network does considerable additional work in terms of billing, collection etc. The Authority has noted the developments in the market in the last few months and expects that competition in the market will continue. The Authority recalls its interim decision that the originating network must pay from the tariffs the carriage and termination charge for the calls, and retain the residual, i.e. the originating charge need not be specified for the call. The Authority has decided that it would continue with this principle, and will specify only the carriage and the termination charge. This will help provide flexibility in tariffing and will also ensure that the access network does not pass on the burden of its own tariff decisions to other networks involved in completing the call. While no origination charge is being specified, the collection of ADC amount by the originator, however has been allowed.

**Same termination charge for all access networks**

61. Regarding termination charge, the Authority has noted the comments made in the context of implementation of IUC that it would be easier for the parties concerned if there were no or few differences in the IUC rates across the distance categories. In addition to the task of implementing diverse termination charges being more difficult to implement per se, the Authority also recalled that problems arising due to a difficulty in distinguishing between calls from/to fixed lines and

WLL(M), which has introduced some arbitrariness in implementing the settlement of the IUC/ADC.

62. The Authority noted that based on previous cost information, it had earlier specified a termination charge of Rs. 0.25 per minute for local fixed to fixed calls, for calls from fixed line (except “0 to 50 kms.”) a termination charge of Rs. 0.50 per minute was specified, and termination charges of Rs. 0.30, Rs. 0.40 and Rs. 0.50 per minute for different types of calls had been specified for calls to cellular mobile and WLL (M). A review of the estimates of termination charge with more recent data shows that the costs per minute for various types of calls are now much closer to each other. The Authority therefore feels that it is possible to have identical termination charges for the access providing services (see below). In addition to simplifying the implementation of the regime, a common amount for termination charge would facilitate moving towards similar tariff levels for calls from/to different access providers, and would reduce imposition of cost items on certain types of calls merely on account of regulatory policy. Bearing this in mind, the Authority has decided that it will have as few rates as possible for the IUC regime, and would specify a common termination charge for all access services. To the extent that the common termination charge results in a surplus over costs for fixed line, the Authority has made adjustments for that amount in its calculation of the ADC.

### **Port charges**

63. The Authority noted the point made by several stakeholders that since the IUC exercise includes all costs, the charge for ports should be removed. In this regard, the Authority first noted that it is actually not taking account of 6.4% of the costs because they pertain to non-telephony. This ADC amount has been based on the share of revenues for telephony in total revenues of BSNL from various sources, excluding the costs that pertain to non-telephony operations. The Authority also recalled that during the calculation of Port Charges, only the incremental CAPEX for provision of the port was considered although for providing ports, there is a need for not only augmenting the switch capacities but

also other downstream parts of the network to handle the additional traffic entering the network through these ports. The costs required for augmentation of other downstream network elements to handle the additional traffic, were left to be recovered through the IUC.

64. The Authority has accordingly concluded that the port charges as specified in the Port Charges Regulation would continue to prevail.

### **Transit charges**

65. The Authority took account of the fact that it has already mandated direct connectivity among various service providers. However, for exceptional situations where direct connectivity may not be possible or due to emergency breakdown etc., and for overflow traffic, carriage charges may be mutually negotiated but this should be lower than Rs. 0.20 per minute. The Authority will intervene if there is a regulatory concern in this regard.

66. The Authority also forbears with respect to NLDO to NLDO transit charges.

### **Method of Settlement of Payment of IUC/ ADC**

67. Some of the stakeholders, during the consultation process, had raised the issue whether payment of IUC should be on per minute basis or per second basis. The Authority has examined the issue and would like to clarify that as far as values for IUC in the schedules are concerned, they have been specified in per minute basis considering bulk settlements. These charges are wholesale charges for Inter-Operator settlements for bulk traffic exchange and should not be considered to be on call-to-call retail basis. Therefore, the IUC payments should be based on aggregate of all call duration in seconds, rounded off to the nearest minute for the total during the month.

**Termination charges for services such as SMS, IN service, special/ emergency services, Paging, Internet, etc.**

68. No separate traffic/ cost data was available with TRAI to ascertain usage charges for resources utilized in transmission of short messaging service (SMS). The Authority is of the view that at present, the service providers should work out mutual arrangements for usage charges for exchange of SMS. The Authority has forborne in respect of IUC for SMS at present, and may re-visit this matter in the near future based on the exercise of collection of additional data in this regard.

69. Similarly, IUC for usage of special/ emergency services, other facilities like Directory services and Calling Line Identification could not be ascertained due to want of specific information on cost/ traffic for these services/ facilities. The Authority therefore, forbears in respect of IUC for these services for the present and allows Operators to negotiate between themselves for usage of such resources. The same is also true for termination charges for IN services.

70. Other service providers such as Paging, Internet etc. had raised the issue for provision of termination charges for calls terminating in their network. The Authority has examined the issue and noted that the matter relates more to revenue share than to a termination charge because the connection with them is not treated as interconnection. For this reason, the Authority has not specified any termination charge.

**Peak/ Off-peak IUC/ ADC**

71. The Authority also considered whether to have different IUC/ADC regimes during peak and off-peak periods. The Authority took note of the relatively low ADC amounts imposed under the revised regime, and the likely implementation problems if these amounts are segmented by time of day, and

decided to impose a relatively simple regime with the same ADC for peak and off-peak periods.

### **Call handover**

72. Some stakeholders raised the issue on the possibility of far-end handover by the fixed line operator to Cellular Mobile operator and one-way POI (Point of Interconnection). This issue is under consideration in TRAI and would be addressed separately, if required through the normal process of consultation. The Authority would emphasise the objective of development of the system in an economically efficient way.

### **Funding of ADC from all calls**

73. In the previous exercise, the ADC recovery had been provided only to calls originating and/ or terminating in fixed network. Since, ADC was only loaded on calls involving fixed lines, the tariffs for calls from / to cellular mobile and WLL (M) had become much cheaper, with this advantage being most strongly available to calls from cellular mobile to cellular mobile. Further, cellular to cellular calls within a circle do not have a carriage charge component that applies to fixed to fixed line calls, which makes the longer distance fixed line calls more expensive under the IUC regime than cellular to cellular calls. Both these factors would provide an incentive for migration of long distance traffic from Fixed to Fixed towards Cellular to Cellular, making more difficult the recovery of ADC as envisaged in the Regulation. In the current IUC / ADC exercise, the Authority has tried to ensure that the regulatory regime provides as little regulatory incentive as possible for calls to switch from one service to another or for migration of traffic from one network to another network. Therefore, ADC has been made applicable for all access providers, and its level has been kept low as well as similar for the same types of calls.

### **Implementing IUC for calls from PCOs**

74. The Authority noted that two types of issues had been raised with respect to calls from PCOs. One related to the possibility of having a consistent and same pulse rate for calls to different types of access providers. Another was the difficulty that arose with respect to sharing the revenues with franchisees. The implementation of calls to different access services has already been settled. The second matter relates to issues that have to be dealt with between the franchiser and franchisee.

### **Collection of ADC from Roaming Subscribers**

75. Some stakeholders have stated that it is difficult to distinguish between calls from roamers and local calls, and therefore while the former should be paying a higher (long distance ADC inclusive) amount, the ADC paid on these calls is only the amount relevant for local calls. A number of mitigating features are part of the new regime. The ADC for intra circle and inter circle calls has a much smaller difference (Rs. 0.30 and maximum of Rs. 0.80 per minute). Further, the payment of ADC with respect to all NLD calls now has to be done by the NLD operator. Thus, when such a call is delivered by the NLD to the access provider, the additional amount can be charged directly from the NLD operators. The matter can be further addressed through procedures for settlement that limit the extent of loss on account of roaming calls.

### **ADC calculation after taking net surplus revenue from local calls**

76. Calculation of ADC has also been reviewed to account for higher revenue in local calls from higher calling subscribers and the likely developments in the telecom sector. In the present exercise, the total Access deficit has been estimated by reducing surplus from local call revenue from the rental deficit, based on the actual data on local call revenue. This helps to obtain a more accurate estimate of the net surplus from local calls.



## **Tariff forbearance**

77. With the ADC for BSNL, which is providing most of the fixed lines in rural areas, the Authority is proposing to deregulate the tariffs except standard tariffs (rental and call charge) for fixed line in rural areas. The competition in the market as well as the social pressure to maintain reasonable and affordable tariffs is strong enough, and the applied tariffs are invariably the alternative tariff packages rather than the standard tariff packages specified by the Authority. The Authority, however, feels that maintaining a standard tariff package for the rural monthly rentals and call charges would still be desirable. Also, the Authority is of the view that the call charges for different types of calls should be as close as possible under the IUC/ADC regime, and for the case of calls from fixed to cellular mobile, would recommend that the pulse rate for such calls within a LDCA be not below 60 seconds. However, the Authority would leave the issue to the judgement of the operators in the prevailing competitive regime.

### **(i) Cost of call termination for fixed line**

78. Taking account of the methodology mentioned earlier, the cost based termination charge for BSNL has been estimated as Rs. 0.23. per minute. This is the same estimates as in the previous exercise. In view of the decision for a common termination charge because it will ease implementation and limit the distortions in the competitive regime, the Authority has specified a termination charge of Rs. 0.30 for all calls. As mentioned above, the additional revenue accruing to fixed line (BSNL) on account of revenue exceeding costs has been taken into account in the calculation of access deficit, i.e. the access deficit has been adjusted downwards to account for this revenue. In reaching this decision, the Authority has also noted that the revenue per minute for local calls earlier was about Rs. 0.51 per minute, and this is likely to have gone up under the new tariff regime with lower number of free calls and Rs. 1.20 being charged after 300 MCUs. Though more data is needed to verify the extent of revenue increase, the amount of increase may be about Rs. 0.06 per minute. Thus, the revenue from local calls will be about Rs. 0.57 per minute. With this revenue per minute, a

termination charge of Rs. 0.30 per minute together with a cost of origination of Rs. 0.23 per minute (i.e. a total of Rs. 0.53 per minute) should be sustainable for local calls even if the increase in revenue per minute is slightly below the estimate that we have mentioned above.

**(j) Cost of termination for calls to cellular mobile and WLL (M)**

79. The IUC exercise also requires estimating the termination charge to be paid for calls to cellular mobile. The Authority has updated the data on the basis of which mobile termination charge (MTC) was estimated in the previous exercise. The MTC has been calculated on the basis of operational costs of year 2000-2001. Based on recent data from some cellular mobile service providers, the Authority observed that the annual increase of these costs was about 20% per year. Accordingly, the Authority has applied this rate of increase (i.e. 20%) per annum to the costs for 2000-2001, and has calculated them for the year 2003-2004. The Authority has taken a subscriber base of 1.7 crore, corresponding to the middle of 2003-2004, which is similar to the period considered for estimating the ADC for basic service operators. The Authority has also considered recent estimates of the total number of minutes, once again similar to the exercise conducted for basic service operators. Based on data submitted by the service providers, the Authority has used 326 minutes per subscriber per month for incoming and outgoing calls; these minutes are more than the expected minutes of use that the Authority had used at the time of the IUC Regulation in January 2003, and reflects the much sharper spurt in usage than anticipated after the introduction of calling party pays. However, they are still conservative estimates when compared with, e.g. the minutes of use by BSNL subscribers. Further, from the total operational costs, the cost components that are not related to call carriage were removed. Thus, in addition to all the cost items that were not considered earlier, 50% of the marketing expenses that was considered earlier, were not allowed in the cost base for calculating the mobile termination charge in this review. This is on the grounds that marketing expense (as in the case of other excluded costs) are not directly linked with cost of termination of call, and the fact that tariff forbearance allows cellular operators much more flexibility to

recover these cost from other sources of revenues. As in the previous case, value added revenues have been deducted from the relevant cost base, because these are an important revenue source for recovering costs. This would also give an incentive for the service providers to earn more from the value added services in comparison to the estimated costs that have been recovered from these revenues. Over time, with the reduction in costs due to falling equipment prices, and its higher capacity, as well as due to rapid subscriber growth, the Authority may in future consider allocating only a portion of the value added revenues against the costs relevant for call termination.

80. On the basis of the above estimates, the termination charge for cellular mobile comes to Rs. 0.26 per minute for metros and Rs. 0.30 per minute for circles. Thus, a termination charge of Rs. 0.30 can be applied for cellular mobile also.

81. While cost based termination charges have been calculated for fixed line and cellular mobile, it is not possible to get similar estimates for WLL (M) because recent data on the service is not available in a form that can be used for such calculations. However, since the Authority has decided to have a common termination charge for all calls, this should not be a problem. Also, the WLL (M) under different circumstances can be treated similar to a fixed line, or to a cellular mobile. To that extent, the cost base for WLL (M) can be taken, for simplification, as being similar to either fixed line or cellular mobile under different circumstances, and a termination charge of Rs. 0.30 per minute has been specified for WLL(M) also.

**(k) Cost of call carriage**

82. The cost based charges for long distance carriage have been calculated as Rs. 0.21, Rs. 0.65, Rs. 0.85 and Rs. 0.94 per minute corresponding to distance slabs of 0 to 50Kms, 50+ to 200 Kms, 200+ to 500 Kms and above 500 KMs respectively. These costs have been calculated based on data for BSNL, which is an integrated operator. The costs relevant for stand alone operators would be

higher. The carriage charges in the IUC regime have been therefore specified as slightly higher amounts for the last two distance categories: they are about 10% higher for the second highest distance category and about 20% higher for the highest distance category (please see below).

83. The Authority has examined the impact of IUC on tariffs, and has noted that the IUC regime can be accommodated within the prevailing tariff regime, leaving some margins for competition to further reduce tariffs. Thus the Authority expects combined effect of cost decreases and the competition in the market to drive tariffs even lower, mainly in the long distance sector. The Authority has compared the prevailing tariffs for different types of intra-circle and inter-circle calls. **Table 10** shows the weighted averages for the tariffs for calls originating from fixed line, cellular mobile, and WLL(M) respectively (these illustrative tariffs are the alternative tariffs of BSNL, which is keenly competing with other operators in the market). These weighted averages show that there is a considerable margin between the prevailing tariffs and the IUC/ ADC regime induced costs that apply to various service providers.

**Table 10**  
**Weighted Average Comparison of**  
**existing tariffs & new (IUC + ADC) charges**

	Inter-Circle Weighted average service wise	Intra Circle Weighted average	Intra + Inter weighted average	Inter-Circle Weighted average service wise	Intra Circle Weighted average	Intra + Inter weighted average
	Existing tariffs			Revised IUC + ADC charges		
	Rs per min	Rs per min	Rs per min	Rs per min	Rs per min	Rs per min
<b>Fixed originating</b>	3.44	1.70	2.07	2.03	1.21	1.39
<b>WLL(M) originating</b>	4.06	2.27	2.86	2.23	0.99	1.40
<b>Cellular originating</b>	2.26	1.56	1.75	2.24	0.79	1.17

Note: While determining the weighted average on the basis of sum of IUCs and ADC, the cost of origination, termination and carriage has been taken as follows:

- a) Fixed origination 23 Paise
- b) Fixed termination 30 Paise
- c) Cellular / WLL origination & termination 30 Paise
- d) Applicable ADC and carriage charges based on the distance slab and type of call

#### **VI. New IUC regime following the review**

84. Based on the above review of the IUC regime, the Authority has decided to specify a revised IUC regime. **The basic principles underlying this regime address ease of collection and transfer of the IUC charges, facilitating the implementation of the IUC regime by the service providers, maintaining affordable tariffs for local calls and short distance calls likely to**

**have major community of interest, and reducing the incentives for call bypass.** Thus, the IUC regime has the following characteristics:

- The Authority has decided to specify IUC only as termination charge and carriage charge.
- The IUC termination charge is specified as Rs. 0.30 per minute for fixed line, cellular mobile and WLL(M).
- The carriage charge for the distances have been specified as Rs. 0.20 per minute for up to 50 kms, Rs. 0.65 per minute for 50 to 200 kms, Rs. 0.90 per minute for 200 to 500 kms, and Rs. 1.10 per minute for beyond 500 kms.
- Traffic hand-over for or from Cellular Mobile Networks shall normally take place at Level II TAX POIs and a carriage charge of Rs. 0.20 per minute would be applicable. If handover is at any other TAX level, the relevant carriage charge must be paid.
- The calls from fixed line to WLL(M) would be treated as a local call or long distance call, depending upon whether the call is within or outside the SDCA. Similarly, the calls from WLL(M) to fixed line would be treated as a local call or long distance call, depending upon whether the call is within or outside the SDCA.
- In addition to these IUC amounts, the Authority has specified certain Access Deficit Charges (ADC).

85. The ADC has been specified differently for fixed, WLL(M) and cellular mobile calls. In doing so, the Authority has kept in mind the fact that it has specified certain standard tariffs for fixed line calls (local calls, and intra-circle calls upto 50 kms.).

86. The ADC payment is to be made as per **Schedule III** the relevant part of which is reproduced below.

**Table 11. ADC Regime under this Regulation**

Access Deficit Charges in Rs per minute	Local	Intra circle calls		Inter Circle calls			ILD
	local	0-50 kms	>50 kms	0-50 kms	50-200 kms	>200 kms	ILD
Fixed - Fixed	0.00	0.00	0.30	0.30	0.50	0.80	4.25
Fixed – WLL(M)	0.30	0.30	0.30	0.30	0.50	0.80	
Fixed - Cellular	0.30	0.30	0.30	0.30	0.50	0.80	
WLL(M) - Fixed	0.30	0.30	0.30	0.30	0.50	0.80	4.25
WLL(M) - WLL(M)	0.00	0.00	0.00	0.30	0.50	0.80	
WLL(M) - Cellular	0.00	0.00	0.00	0.30	0.50	0.80	
Cellular - Fixed	0.30	0.30	0.30	0.30	0.50	0.80	4.25
Cellular - WLL(M)	0.00	0.00	0.00	0.30	0.50	0.80	
Cellular - Cellular	0.00	0.00	0.00	0.30	0.50	0.80	

**Collection and distribution of ADC**

The amount given above is to be collected/ paid as follows:

- For all intra-circle calls from cellular mobile/ WLL(M) to fixed line, the terminating service provider to be paid the access deficit amount.
- For all intra-circle calls from fixed to cellular mobile/ WLL(M), the originating service provider to retain the access deficit amount
- For intra-circle calls from fixed line to fixed line, the originating service provider to retain the access deficit amount (local calls and calls within “0 to 50 kms.” do not have any access deficit charge). No access deficit charge is payable to the terminating fixed network.
- For all inter-circle (including ILD) calls from fixed line, the originating service provider to keep the access deficit amount. No access deficit charge is payable to the terminating fixed network.

- For all ILD calls to fixed line, the terminating service provider to be paid the access deficit amount by the ILDO (directly or through NLDO, wherever applicable) together with the termination charge
- For all inter-circle calls from cellular mobile/ WLL(M) to fixed line, the access deficit charge and termination amount is to be collected by the NLDO from the originating service provider and the access deficit charges together with the termination charge should be paid to the terminating service provider.
- For all inter-circle calls from cellular mobile and WLL (M) to cellular mobile/ WLL(M), the access deficit amount is to be collected by the NLDO from the originating service provider and the access deficit charges should be paid to BSNL.
- For all ILD outgoing and incoming calls from/to cellular mobile and WLL (M), the access deficit amount is to be collected by the ILDO and the access deficit charges be paid to BSNL.

87. The Authority considers that the origination/ termination charge for international calls has to serve the objectives of both a reduction of the grey area traffic and provision of revenues for achieving the objectives of New Telecom Policy 1999. The Authority has considered these objectives, and has decided to keep this balance in mind. At present, the revenues available from such calls for the objectives of tele-density have been given greater emphasis in view of a need to specify affordable tariffs in the market along with an ADC regime. The Authority has thus decided to specify an access deficit **charge of Rs. 4.25** per minute for these calls for both outgoing and incoming minutes. **The Authority will consider lowering this amount over time. This amount would be collected by fixed line service providers on their outgoing/incoming calls as mentioned above in the method for collecting the ADC. For ILD calls to/from cellular mobile and WLL (M), the ILDO will collect the relevant access deficit from the**



**access provider for outgoing calls, and pay from its settlement rate for incoming calls, and pass on the ADC amount to BSNL.**

88. With the proposed changes above, the Authority is of the firm opinion that most of the concerns get adequately addressed.

89. Since this was only a review exercise of the IUC/ ADC regime notified in January 2003, the Authority has not undertaken any structural changes in the estimation methodology for ADC. Periodic (annual) ADC calculations based on audited results of all service providers are being proposed. The next exercise would consider changes in the ADC regime. In the subsequent years, the Authority would review both the size of the ADC payments as well as who should be the beneficiaries of the ADC regime. It may even consider funding ADC based on a percentage of the Annual Revenues of the operators. Further, the ADC regime should ideally be merged with the USO regime over time, say in about 3 to 5 years. This will also help implement the scheme in terms of a revenue share, and will further reduce any competitive distortions that may be introduced by loading the ADC regime on the minutes of use. However, such a regime can only be introduced after consultations with the Government, which the Authority would initiate. In the post- Accounting Separation scenario, the Authority would also be better equipped for Forward Looking Proxy Models.

## **VII. A summary of the principles adopted by the Authority**

90. The Authority has decided on a number of principles with respect to the revised IUC regime. The Authority has decided to confirm its interim decision vide Order No.311-9/2003-Eco dated 1<sup>st</sup> July 2003, under which the Originator had to pay the IUC/ ADC for carriage and termination, and retain the residual amount.

91. The Authority has specified only one type of ADC regime, thus doing away with two different types of regimes (one with ADC escalating with distance, and another with uniform ADC) specified earlier. Technical difficulties in the

implementation of ADC escalating with distance was the main reason for providing an alternate option of uniform ADC. The Authority noted that the existence of two different ADC regimes was causing confusion amongst the service providers, and the incumbent has already implemented the escalating regime. Thus a single ADC regime with ADC escalating with distance has been specified.

92. The Authority has taken into account the financial support provided by the Government to BSNL and has accordingly made adjustments in the estimation of the ADC amounts.
93. The ADC has been reduced further by adjusting the written down value methodology for depreciation by using a straight line depreciation methodology. The net ADC amount to be funded by Long Distance calls has been calculated after accounting for the surpluses available from local calls. This was so in the earlier regime also but based on assumption on the calls which gave revenues above the cost of call taken for this purpose. In the present exercise, the revenue surplus is based on actual data received from BSNL for local call revenues for the year 2001-2002.
94. The net ADC is much lower than the amount estimated earlier, and this should raise the margins of operators and also put a downward pressure on tariffs.
95. Taking account of the regulatory incentives/disincentives encompassed in the prevailing ADC regime under which the ADC is loaded only on calls involving fixed line, the Authority has decided to distribute the ADC load on all Access Services. This incorporates a more neutral regulatory approach in terms of incentives/disincentives created by the ADC regime.
96. The Authority has decided to reduce the ADC component for the International Long Distance calls for checking increase in grey market. In this regard, the Authority has noted that the ILD tariffs have traditionally been high and the

ADC component for ILD may be higher than that applicable to national Long Distance calls.

97. Further, the Authority noted that with reduced ADC and the prevailing tariff, Service Providers would be earning larger margins. Larger growth in the telecom sector may also bring in larger receipts to the service providers and larger ADC to BSOs including BSNL. ADC amount has thus been kept at about 10 – 12 % of the sectoral revenue, a much more sustainable amount, as against 30% in the earlier regime. Bearing this in mind, the Authority has decided not to fund the entire ADC.
98. The Authority noted that the ideal regime would be a USO type of regime that is both simpler to implement and does not impose regulatory incentives/disincentives based on differential ADC burden for different kinds of calls. The Authority is of the opinion that the prevailing ADC regime should be made to transition within 3 to 5 years towards an USO type of regime.
99. The ADC for fixed line has been provided both from termination charge as well as from specific ADC on different types of calls. The termination charge has been made the same for calls to all types of Access Services. This will simplify the implementation of the regime and also help address the difficulties of identifying whether calls are to fixed lines or WLL(M) subscribers. For Local Calls from fixed line to fixed line no ADC component is specified. For calls from fixed to Cellular Mobile, it is difficult to distinguish whether a call is a local one, non-local, or intra circle one. In such a situation an ADC component has been specified for both calls from fixed to cellular mobile and for local and intra-circle calls from fixed to WLL(M).
100. The Authority further noted from examples across various countries that the ADC was made available in general only to the incumbent BSOs and not to the new entrants. The Authority would have liked to implement such a regime here also. The Authority sought detailed information from the BSOs and the same was provided by most of them. The Authority considered this data and

based on normated estimates (BSNL monthly rentals for private BSOs and BSNL costs for MTNL), it found that some BSOs would require ADC. A partial implementation of the ADC regime would however, be very difficult and may also generate regulatory incentives/disincentives which the Authority has addressed in another part of this review. The Authority also did not want to disturb the prevailing structure of the Regime at present, without introducing a larger change in methodology. The Authority has, therefore, decided to provide ADC for BSOs also, but the amount collected through ADC by them would in effect be lower than the proportionate ADC correspondingly received by BSNL. Further the Authority will look in greater detail at the data applicable to BSOs and will move to a regime under which the BSOs will not get ADC funding unless it is proved on the basis of data that such funding is eminently desirable in the interim transitional phase.

**101. Summary of the Main Results are as follows:**

- ❖ Revised estimate has lower total amount of Access Deficit, based on recent financial and traffic data and deduction of compensation/concessions given to BSNL by the Government.
- ❖ Access Deficit estimate is being funded to the extent of Rs. 5,340 crores.
- ❖ Even developed countries like the U.S., Australia, Canada, France with lesser compulsions of providing low rentals and tariffs for unviable services had to formulate ADC schemes during initial years of liberalization and tariff re-balancing, and in several cases the ADC funding continues even now.
- ❖ Same termination charge (Rs. 0.30 per minute) to be paid for all calls to access providers, namely fixed line, cellular mobile, WLL(M). This will help simplify the IUC regime and help its implementation, and prevent disputes in reconciliation between operators.

- ❖ No origination charge is specified. Thus origination amount will be residual from tariff after payment of carriage and termination charge, plus the ADC amount.
- ❖ For calls originating from fixed line, the originating network will be allowed to collect the ADC amount. For calls originating in non-fixed line and terminating in fixed network, the terminating network will have to be paid the ADC amount.
- ❖ Only one type of Access Deficit Charge (ADC) regime has been specified, in place of the two which existed earlier. The Authority had earlier provided a uniform ADC regime in case the other, namely the escalating ADC regime, was found technically difficult to implement. The Authority noted that the two different types of ADC regimes were creating some confusion among the service providers, and the incumbent had already implemented the escalating regime. Thus, a single (escalating) ADC regime has been specified which would make the system more predictable.
- ❖ ADC to be funded from all calls, except fixed to fixed local and “0 to 50 kms.” intra-circle calls, and intra-circle calls from cellular/WLL(M) to cellular/WLL(M). The Authority would have liked to impose these charges on intra-circle cellular/WLL(M) to cellular/WLL(M) calls also, to eliminate all regulatory disadvantages to any service, but collection of ADC under such a regime would require a fundamental change in the collection mechanism. The Authority would consider these charges at the time of the next review.
- ❖ With lower ADC and the amount being collected from all types of calls in general with identical charges, regulatory disincentives/incentives encompassed in the existing ADC regime have been mostly eliminated.
- ❖ BSOs other than BSNL also to get ADC funding this year as in the present regime, but on a lower scale. This will be reviewed later with more detailed and audited data, with a perspective of phasing out their ADC funding.

- ❖ Even the ADC regime that remains for BSNL is to be phased out in general and to be merged with USO regime in 3 to 5 years.
- ❖ For all intra-circle calls subject to ADC, an ADC amount of Rs. 0.30 per minute to be levied.
- ❖ For inter-circle calls, ADC amounts are as follows:
  - Rs. 0.30 per minute for calls up to 50 kms.
  - Rs. 0.50 per minute for calls within 50 to 200 kms.
  - Rs. 0.80 per minute for calls beyond 200 kms.

This constitutes a drastic reduction in per minute ADC compared to the existing regime both on account of lower amounts and the fact that the ADC applies only once for each call, compared to the previous regime which loaded the ADC twice in the case of fixed to fixed calls.

- ❖ ADC on international calls (outgoing and incoming) reduced to Rs. 4.25 per minute, but levied on all services to eliminate regulatory disadvantage to any service and taking account of the various objectives that are to be addressed by these ADC amounts. Reduced ADC amounts should also reduce grey traffic. The Authority will consider lowering this amount over time.

The access deficit charge per minute of the call is shown in the Table below.

Access Deficit Charges in Rs per minute	Local	Intra circle calls		Inter Circle calls			ILD
	local	0-50 kms	>50 kms	0-50 kms	50-200 kms	>200 kms	ILD
Fixed - Fixed	0.00	0.00	0.30	0.30	0.50	0.80	4.25
Fixed - WLL(M)	0.30	0.30	0.30	0.30	0.50	0.80	
Fixed - Cellular	0.30	0.30	0.30	0.30	0.50	0.80	
WLL(M) - Fixed	0.30	0.30	0.30	0.30	0.50	0.80	4.25
WLL(M) - WLL(M)	0.00	0.00	0.00	0.30	0.50	0.80	
WLL(M) - Cellular	0.00	0.00	0.00	0.30	0.50	0.80	
Cellular - Fixed	0.30	0.30	0.30	0.30	0.50	0.80	4.25
Cellular - WLL(M)	0.00	0.00	0.00	0.30	0.50	0.80	
Cellular - Cellular	0.00	0.00	0.00	0.30	0.50	0.80	

- ❖ In the revised scheme, the ADC is not specified at both originating and terminating end. For each minute of a call, a single specified ADC amount is provided.
- ❖ Settlement of the IUC/ADC amounts is to be done on bulk basis.
- ❖ Carriage charge for long distance remains same for distances up to 50 kms. (Rs. 0.20 per minute), and for more than 500 kms. (Rs. 1.10 per minute). It has been increased for distances “50 to 200 kms.” to Rs. 0.65 per minute, and for “200 to 500 kms.” at Rs. 0.90 per minute on the basis of the capital and operational costs applicable for long distance carriage and the minutes of use based on an established service provider, i.e. BSNL.
- ❖ In view of the decrease in the ADC amounts, present tariffs are sustainable, with even a margin for prices to decrease further due to competition because with the proposed IUC regime, and reduction of cross subsidies, operators would be left with higher margins in existing tariffs thus giving them more margins for competition without regulatory disadvantages for any service. Lesser cross subsidies should also put downward pressure on tariffs.

- ❖ Review of ADC to be done annually, and over time a gradual introduction of forward looking long run incremental cost model would be used to calculate the ADC.
- ❖ With this IUC/ADC regime, the Authority has also forborne with respect to the tariffs for basic service, except for the rural tariffs.
- ❖ Substantial part of this ADC funding will still be generated from within the BSNL network. Despite application of ADC to a number of other call types (such as cell to cell calls, etc.) the ADC funding by fixed services as a proportion of revenues would still be more than the contribution from cellular operators: Under the revised regime, the ADC funding as a proportion of revenues would be about 12 % by fixed operators, about 9% by cellular mobile, and about 16% by WLL(M). The difference between WLL(M) and cellular mobile contributions is due to the differences in the present tariff, traffic and subscriber bases. With the ever increasing growth in the number of wireless subscribers and minutes of usage and the slower growth in fixed lines, the ADC load on various services is likely to converge and come down in subsequent reviews.
- ❖ In the earlier regime 92% of the ADC revenues were being contributed by BSOs (primarily BSNL) and the ADC as a percentage of their revenues was about 40%. Instead of helping BSOs, particularly BSNL, the earlier regime could have driven them out of business.
- ❖ This IUC/ ADC regime will be implemented from 1<sup>st</sup> December, 2003.

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