INFORMATION & COMMUNICATION TECHNOLOGIES AUTHORITY

1 st Floor, Jade House, Remy Ollier & Car Jummah Mosque Streets,

Port Louis, MAURITIUS

No. ICTA/IUC/TO/05/2003 7 July, 2003

THE TELECOMMUNICATION ORDER (5 of 2003)

In exercise of the powers conferred upon it under the Information & Communication Technologies Act 2001, the Information & Communication Technologies Authority (hereinafter referred to as **Authority**) hereby makes the following order in respect of interconnection charges for inter network calls between different operators in Mauritius.

1. Short title, extent and commencement:

i. This Order shall be called "The Telecommunication Order (5 of 2003)".

ii. The Order shall come into force with immediate effect.

2. Interconnection Charges for inter network calls

i. The Interconnection Usage Charge (IUC) and other charges payable by each operator for the inter-network calls shall be as specified in Schedule-I hereto.

ii. The above charges shall be implemented as from 1 st August 2003.

iii. The mobile operators and fixed line operators shall enter into an agreement based on the charges mentioned in this order and file the same with the Authority by 31 st July 2003.

iv. The Authority may, from time to time, review and modify Interconnection Usage Charge. The Authority may also at any time, proprio motu, or upon reference by any aggrieved party, and for good and sufficient reasons, review and modify any Interconnection Usage Charge.

3. Explanatory Memorandum

This Order contains at Annexure-A, an explanatory memorandum to provide clarity regarding the tariffs specified in this Order.

BY ORDER

N. Parameswaran

Executive Director

To: All telecommunication service providers

i. M/s Cellplus Mobile communications Limited, *9th Floor, Telecom Tower, Port Louis* .

ii. M/s Emtel Limited, *1, Boundary Road, Rose Hill.*

iii. M/s Mauritius Telecom Limited, *18 th Floor, Telecom Tower, Port Louis*

Telecommunication Order No. 5 of 2003

Schedule-I

1	**Date of Implementation**	1 st August 2003	
2	**Port charges (covering charges for ports, leased lines, etc)**	As currently applicable	
3	**Pulse Rate for inter operator billing**	Per second basis in all cases	
4	**Inter-connection Usage Charges**		
	Direction of Inter-network call	**IUC** **(Rs. per minute)**	**Payable by**

I	**Calls to / from Mobile Network**		
(a)	**Mobile to Mobile**	Bill and Keep	NA
(b)	**Mobile to ILD**		
	(i) through fixed line operator	Rs.0.75	Mobile operator to fixed line operator
	(ii) direct interconnection	negotiated amount	Mobile operator to ILD operator
(c)	**ILD to Mobile**	Nil	N/A
(d)	**Mobile to fixed**		
	(i) Domestic	Rs.0.75	Mobile operator to fixed line operator
	(ii) Inter Island	Rs.0.75	Mobile operator to fixed line operator

II	**Calls to / from Fixed Network**		
(a)	**Fixed to Fixed**	Rs.0.16	Call originating fixed line operator to the call terminating fixed line operator
(b)	**Fixed to ILD**	Rs.5.00	ILD operator to fixed line operator
(c)	**ILD to fixed**	Rs.2.50	ILD operator to fixed line operator
(d)	**Fixed to Mobile**		
	(i) Domestic	Nil	NA
	(ii) Inter island	Nil	NA
(e)	**Fixed to Internet ***	Rs.0.33	ISP to fixed line operator

** the IUC is currently sub-judice and hence the Authority has refrained from making changes at present.*

Note: In case of ILD and inter-island calls, the applicable IDD and inter-island call charges are extra and are payable by the call originating operator to the ILD or inter-island carrier.

Annexure-A

EXPLANATORY MEMORANDUM

Introduction

1. The ICT sector including the telecom in Mauritius is experiencing the winds of liberalization and the privileges enjoyed by select operators in the pre-liberalized economy are no more relevant. The process of change was initiated when the end of compulsory routing of all calls through Mauritius Telecom was pre-poned by a year to 1 st January 2003.

2. To provide a stable platform for growth, competition needs to be ushered in at the level of all service segments. This cannot be achieved with the present interconnection regime. To implement the policy of the Government for the promotion of ICT in Mauritius the present Interconnection Usage Charge(IUC) system needs to change.

3. The amount charged by MT for originating, terminating and transiting a call are not cost based. The incumbent operator charges the mobile operators for terminating mobile calls in its network and also for terminating its calls in the mobile network. This probably is a result of dominance of one operator in all service segments either directly or through its subsidiaries.

4. The telecom sector in Mauritius has scope for additional operators than at present. If the present IUC regime is not amended to be cost based it may be difficult to attract fresh investment/new operators. The major beneficiary of the cost based interconnection shall be the common public or users of telecom services in Mauritius.

5. With the competition emerging in the mobile sector, the Authority has already prescribed ceiling (maximum) charges in respect of calls between subscribers of different mobile operators. This has significantly reduced the charges for calls from one mobile operator to another for both post paid and pre-paid subscribers.

6. Competition is likely to emerge in all service segments including International Long Distance (ILD) and fixed network. It is therefore imperative to provide a direction on IUC with a view to facilitating new entrants and the existing operators to formalize their roll out plans.

7. The Authority has decided to prescribe cost based charges in respect of calls between operators. MT being the only operator in fixed and ILD services, all other operators necessarily have to seek interconnection with MT. In this regard, the Authority sought from MT in January 2003 the cost details to calculate the cost of each network element involved in various types of calls.

8. To speed up the process of receipt of information from MT, a joint working group comprising representatives of Mauritius Telecom and of the ICT Authority was put into place in March 2003. A total of 12 meetings of this working group were held during March and April 2003.

9. Due to certain limitations MT could not compute and furnish the current cost of various network elements used in its network. The Authority therefore decided to base its determination of IUC on the historical cost which incidentally is also in accordance with the draft SADC guidelines (July 2002) on interconnection.

Cost Determination Methodology

10. The cost determination is based on the annual accounts of MT for the year 2002 i.e. Balance Sheet as on 31 st December 2002 and the Profit and Loss Account for the year 2002. Further break up of assets, liabilities, incomes and expenses, the traffic under various call categories and the routing arrangement for various calls, as provided by MT, have also formed the basis for the calculation of cost of various network elements.

11. For determining IUC only the relevant cost have been used. An operator, especially one with many service segments, has overlapping cost. The IUC has been calculated only in respect of the network elements that are used / employed in call completion. The cost refers to both the relevant capital expenditure and the relevant operational costs. The capital expenditure recoveries are in the form of depreciation/ usage of the assets and the interest on the capital invested.

12. The common cost relating to administration has been appropriately allocated over the network elements. Similarly the costs of marketing, retail billing and retail customer services are not relevant to the interconnection and accordingly are not included in the cost base on which IUC is to be established.

Unbundled Network Elements

13. For the calculation of interconnection usage charge the entire network has been divided into smaller elements required used for each type of call. These are referred to as 'Unbundled Network Elements' (UNE). Based on routing of calls, as explained by MT, the UNE for MT network were identified as set out hereunder:

¨ Local Access

¨ Exchange equipment which may be either RLU / ME

¨ Transmission network RLU-ME

¨ Transmission Inter - Exchange network

¨ Transmission from Main Exchange to International Gateway

¨ Earth Stations in Mauritius & Rodrigues for Inter-island calls

¨ International gateway

¨ International Bandwidth

¨ Administration

¨ Retail

Note: *The transmission network between Earth Stations and the main exchanges in Rodrigues and the international gateway in Mauritius is not significant as these are located in the vicinity. Hence this element has not been considered separately* .

14. The MT data backbone is taken as another network element and hence the expenditure on data back bone has been classified separately. Similarly, the amount invested in other businesses has been treated separately.

Distribution of Asset Base over UNE

15. In the first instance the capital cost incurred on each network element has been calculated. The asset base of Rs.13,775 million has been taken as per the annual accounts of MT for the year ending 2002.

16. A majority of assets are directly attributable to one or the other network elements and have been so allocated. The assets which are common to more than one network element have been allocated over the UNE based on rationale arrived to in consultation with MT.

17. The national transmission network comprises links between various switching equipment such as RLU, Main Exchanges, International Gateways, etc. In the absence of details of actual capital expenditure, the total capital expenditure on transmission has been divided between RLU to ME link, ME to ME link and ME to International Gateway link in the ratio of number of E1 links that exist for each of these elements. The details of links provided by MT have been considered.

Distribution of Depreciation for 2002 over UNE

18. MT has provided an asset-wise schedule of depreciation for 2002. The entire deprecation of Rs.844 million for the year 2002 has been allocated over the various network elements, using the same allocation principles as have been used for allocation of assets over the various network elements.

Calculation & Distribution of Recovery on Capital Employed over UNE

19. The capital recovery represents the return that may reasonably accrue to the operator on the amount invested in the business. From MT's balance sheet as on 31 st December 2002 the net capital employed in business has been calculated as below:

Property Plant & Equipment	8,180,333,460
Current Assets	2,747,283,761
Less Current Liabilities	2,049,077,194
Net Capital Employed in Business	8,878,540,027

20. The rate of return is calculated using the debt equity mix of MT (as on 31.12.2002) with actual interest paid on loans @ 4.07% per annum and equity @ 9.55% per annum. The higher return, i.e., additional for equity, is based on the risk element involved. The opportunity cost of equity is taken as equal to the annual return on treasury bills of commercial banks. The cost of debt is further reduced on account of savings income tax (tax shield) @ 25%. The debt equity ratio of 1:2.65 as per MT's Balance Sheet as on 31.12.2002 has been used. The net return allowed is 7.77% per annum on the net capital employed.

21. The percentage of return has been applied on the net capital employed in business which results in the recovery of Rs.690 million. The amount so arrived at has been allocated over the various network elements in the ratio of gross value of assets employed.

Distribution of operational expenses over UNE

22. The expenses of MT for the year 2002 have been used as the basis for determining the operational expenses in respect of each unbundled network element. From the total expenses, the expenses in respect of deprecation (which has been separately provided), financial cost (part of return on capital employed), foreign currency translation, exceptional item, payment of settlement rate to foreign administration (included as cost of IDD calls) and the cost of sales have been excluded. The charges for previous years under the head "license fee" and "staff salaries" have been excluded. The balance has been allocated to various network elements either directly, or on actual or percentage basis, in consultation with MT.

23. Against total expenses of Rs.2,880 Millions shown in the profit and loss account for the year 2002, but after excluding the amount towards non relevant expenditure (as above) the net relevant operational expenditure for the year 2002 is Rs.1,374.4 million.

Distribution of Indirect Incomes over UNE

24. It was observed from the accounts of MT for the year of 2002 that it receives a major amount from leasing out of its facilities and services to customers. These are in the form of leased lines - both national and international, etc. It also receives revenue from surcharge, management fee, commission etc from other operators. Such revenues have been reduced from the operational expenses incurred so as to arrive at the net operational expenses as the entire cost has been considered, which not only generates the call revenues but also these revenues. However as these revenues contain an element of profit they have been reduced by a fixed percentage of 20% and the balance only has been used for calculation of net operating expenses.

Total Recovery of Expenses for each UNE

25. The total recovery of expenses for each UNE is the combination of depreciation, capital recovery on investment and the net operational expenses.

26. The total recovery for all UNE comprises gross operating expenses reduced by indirect revenues, depreciation and return on capital employed. The expenses (capex recovery and opex recovery) pertaining to data network and other business have been excluded, leaving a net balance towards telephony business.

Calculation of cost based Monthly Rental

27. The depreciation and recovery on capital employed in the access has been used for calculating the cost based rentals. The access network comprises local loop, the main exchange/RLU and the RLU to ME link. The access cost is divided by the number of subscribers as on 31.12.2002 to get the cost based rental per month.

28. The difference between the cost based rental and the actual rental is termed as 'access deficit'. The actual rental was calculated based on the ratio between business and residential subscribers. Based on current rental of Rs.75 per month for residential and Rs.210 per month for business the average rental per Del is Rs.102 per month. Hence the access deficit per subscriber per month has been calculated.

Traffic analysis of each UNE

29. The categories for distribution of calls are intra exchange, inter exchange, inter-island, fixed to mobile, fixed to ILD, ILD to fixed, mobile to IDD, IDD to mobile, mobile to fixed, internet and transit (i.e. mobile to mobile calls using MT network). There is a small percentage of ILD and internet calls with Rodrigues, which has been ignored in absence of the relevant details.

30. The traffic carried by each UNE for various types of calls has been determined. The elements which have been used more than once i.e. twice in the completion of a call, has been counted twice.

Cost per minute of each UNE

31. The total cost recovery for each UNE, after excluding the amount taken towards the rental has been divided by the traffic handled by it to arrive at the cost per minute of each UNE.

Cost per minute of various calls

32. The cost of various types of calls has been computed based on the number of times a particular network element has been used and multiplying the same by the cost per minute. The administration has been considered on all calls and the retail element on MT's own calls. The cost of each type of call is calculated as under:

Local Call (fixed to fixed) (intra exchange) $= (2 * A1) + (2 * A2) + (2 * B1) + D1 + D2$

Local Call (fixed to fixed) (inter exchange) $= (2 * A1) + (2 * A2) + (2 * B1) + B2 +$
D1 $+ D2$

Local Call (fixed to Cellular) $= A1 + (2*A2) + B1 + B2 + D1 + D2$

Inter-Island Call $= (2 * A1) + (2 * A2) + (2 * B1) + B3 +$
C1 $+ (2 * B4) + D1+ D2$

Fixed to IDD Call $= A1 + A2 + B1 + B3 + C1 + C2 + D1 + D2$

IDD to Fixed Call	= A1 + A2 + B1 + B3 + C1 + C2 + D1 + D2
Cellular to IDD	= A2 + B3 + C1 + C2 + D1
IDD to Cellular	= A2 + B3 + C1 + C2 + D1
Cell to Fixed	= A1 + (2*A2) + B1 + B2 + D1
Internet	= A1 + (2 * A2) + B1 + D1
Transit (Cellular to Cellular)	= (2 * A2) + B2 + D1

Where

A1. Local Access

A2. Local Exchange

B1. RLU-ME link

B2. Inter - Exchange link

B3. Main Exchange to International Gateway Link

B4. Earth Stations

C1. International Gateway Switch

C2. International Bandwidth

D1. Administration

D2. Retail

Note: *Use of local exchange is taken two times for local call (intra-exchange) as it involves two ports of the exchange one for incoming and one for outgoing. For other calls the use of the exchange is considered as once only because these calls use the subscriber line network only once.*

Means of meeting Access Deficit

33. Once the cost based tariffs have been derived and a view about the affordable level for local service (rental/local call charges) taken, a detailed exercise was conducted for ensuring that the access deficit i.e., the difference between cost based tariff and the affordable tariff, is recovered from other revenue sources such as international long distance charges or the IUC.

34. The presence of access deficit without an alternative source making up for the cost element would be a serious disincentive to the service providers and may withhold them both from investing in the network and attracting more end customers.

Changes in Existing System of IUC payments

35. The existing charges payable by other operators to MT are primarily a result of its dominant position. The IUC regime works upon the basic premise that if one operator collects charges from subscribers and the call is terminated in the network of another operator, then the call originating

operator needs to pay part of its revenue for call termination. However, MT has been charging the mobile operators even for terminating, in the cellular network, the calls originated by MT subscribers. This is unjustified and hence has been set aside.

36. For IDD calls, MT charges the mobile operators for transit of the call at the same rate as for calls terminating in its network. This amount is ultimately passed on to the customers as part of airtime charges. This too is above cost and generally has to be recovered by the ILD operator from the above cost charges for IDD calls.

37. To avoid customer confusion in mobile tariff, the IUC as applicable to calls terminating in the fixed network of MT has been prescribed for the mobile originated IDD or inter-island calls. Accordingly, the same IUC will be applicable for payment by mobile operators for all these calls which are either terminated in (mobile to fixed calls) or transited by MT (mobile to ILD / inter-island calls). However, for terminating the IDD, inter-island and local calls in the mobile network, MT will not get any charges from the mobile operators.

IUC for Mobile Call termination in fixed network

38. The mobile operator would be required to pay @ Rs.0.75/minute to the fixed line operator for termination of mobile calls in the fixed network. These charges are higher than cost; the rationale for which is explained below at paragraph 39.

39. The charges for interconnection comprises the following parts:

(a) Set up costs - these are initial charges and are not relevant at present as the interconnection between networks already exists.

(b) Port Charges - these are for the dedicated network and are being presently charged @ Rs.1000 per E1 port

(c) Leased Line Charges - these represent the costs of the link (OFC /MW) connecting the two networks and are not being levied separately. Their costs have not been calculated in the present exercise.

(d) Usage Charges - these charges have been calculated in the present exercise.

40. Separate charges for (b) and (c) above are presently not levied by MT. The charges are Rs.1000 per month per E1 link. With changes in the IUC regime, these charges also would have to be calculated based on costs. This is an independent exercise and requires determination of charges for leased lines and ports.

41. In the proposed IUC the margin for leased line and / or port charges has been built in. Therefore MT is not allowed to increase the charges being levied at present.

IUC on future interconnections

42. Currently the IUC charges are applicable only for calls with MT either as fixed line service provider or International Long Distance Operator. Subsequently new entrants may come in fixed line, ILD and mobile segments. Hence, a direction has been provided with respect to charges that would be applicable in such cases.

IUC between two fixed line operators

43. Currently there is only one fixed line operator in Mauritius i.e., MT. In future there may more operators. In such a case and before any further cost study the IUC for the calls from one fixed operator to another fixed operator has to be shared from the applicable tariff. The current tariff is Rs.1.30 per 4 minutes. This translates into Rs.0.325 per minute. It is proposed that the fixed line

operators share this amount as Rs.0.165 to the originating operator and Rs.0.16 to the terminating operator. The extra Rs.0.005 to the originating operator is towards the billing etc.

44. Given that the billing is done by the call originating operator, for each call from a fixed to another fixed line network, the originating operator will pay Rs.0.16 per minute to the call terminating operator.

IUC between new ILD and fixed line operators

45. Currently MT is the only operator in the ILD sector. In future there may be more operators. The charges that an ILD operator would pay for the use of the fixed service provider network needs to be determined to facilitate the entry of new operators. Apart from payment of cost of use of network, the new operators need to pay for the access deficit that a fixed line operator incurs in providing below cost access.

46. Normally the new ILD operator would set up a gateway either through satellite or by leasing out capacity from MT. The interconnection of the network of a new ILD operator and the fixed line operators, whether incumbent or new, may take place at one of the main exchanges. In case of POI at ME, the ILD to fixed calls are akin to the mobile to fixed calls.

47. The Authority exercised abundant caution in the determination of the ADC payable by the new ILD operators to the fixed line operators. In case this amount is too higher, this will discourage fresh investment this sector; inversely if this amount is too low, it will not be possible to bridge the access deficit.

48. In the present exercise the ADC for the incumbent fixed line operator is calculated on the basis of historical cost, the IDD tariff rates the traffic for the year 2002. All of these items are open to change.

49. With the entry of new ILD operators the total market for international calls is likely to expand. The rate of growth of the market may be higher than in the past when seen in a context of reduction in call charges.

50. With so many factors affecting the calculation of a reasonable ADC, the present state may be termed as a transition stage in the telecom sector in Mauritius. Keeping in view all the above factors, the following charges are proposed for payment by the new ILD operator to the fixed line operators (with POI at ME), inclusive of both cost based origination/termination and the access deficit charge:

Origination charge	(outgoing IDD Call)	Rs.5.00 per minute
Termination charge	(incoming IDD Call)	Rs.2.50 per minute

51. The reason for lower termination charges is the falling trend in settlement rates.

52. The above rates for termination and origination are inclusive of cost based transit charges and would be payable by MT also (as ILD operator) for IDD call traffic with new fixed line operators.

IUC between new ILD and mobile operators

53. In the proposed scheme, the mobile operators are required to pay Rs.0.75 per minute IUC to MT for carriage of outgoing IDD calls whereas the cost to MT is lower. No charges shall be payable to MT for receiving the incoming IDD call.

54. The same scheme would continue even after the entry of new ILD operators if MT's domestic network is used to transit the calls between the mobile operators and the new ILD operator. But where the mobile operators interconnect directly with the ILD operators, it is not proposed to fix any IUC for

ILD calls originating and terminating in the mobile network. This is left to the commercial negotiation between the operators.

Confidentiality

55. The costs of Unbundled Network Element (UNE) have been calculated on the basis of the traffic data, and detailed break up of incomes, expenses, assets and liabilities of MT. These are considered to be of a highly commercially sensitive nature and have not therefore been provided in further detail in this explanatory memorandum. However, a copy of all the calculations has been provided to MT.