



Consultation Document Ref. 2007/1

**Determination of Interconnection Usage Charges
for Fixed Networks**

22 January 2007

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1. Introduction

In a liberalized environment several licenced operators are there to offer services to the public. These operators may either put up their own network or use the existing network(s) of other operators to offer their services. To provide for universal access, i.e. the subscribers of one network operator being able to communicate with the subscribers of other network operators, there is the need to make interconnection of networks mandatory. Section 28 of the ICT Act 2001 indeed provides for such a requirement in the Mauritian context.

Interconnection should not be considered as a simple issue that deals only with physically interconnecting two or more networks. It has various regulatory, economic and technical implications. The scope of this consultation exercise will be limited to the economic aspect of interconnection and it purports to address the charges that are payable by one operator to another, by virtue of the service that one network renders to the other for completing a call.

Interconnection Usage Charges (IUC) are indeed the charges payable by one telecom operator to another telecom operator for the use of the latter's network either for originating, or terminating or transiting a call. As such, IUC can be in the form of an origination charge, transit charge or termination charge.

Inter-operator calls in practice constitute a major portion of the total calls that are handled by a network. In this respect, the IUC payable represent an important cost element that should be entered in the retail tariff charged to the customers for making the call.

A cost-based IUC promotes competition amongst operators and reduces wastage of economic resources notably as regard the duplication of investments on building infrastructures. The IUC concept has been proved to be the most suitable approach to interconnect pricing in a competitive, multi-operator environment. It gives the operators sufficient flexibility in fixing its tariff for its customers. It also helps in removing discriminatory practices among different operators.

The purpose of this paper is to set out the Authority's views regarding the determination of IUC for fixed networks. This document is being made available for public consultation. Comments, views, and contributions, are sought from stakeholders on the proposals made in this consultation paper especially with respect to the questions that are brought up for consultation. Any contribution should be sent to the **Executive Director, ICT Authority, The Celicourt, 6 SirCelicourt Antelme street, Port Louis**, or by email to icta@intnet.mu, at latest by Monday 29 January 2007 at 16:00 hrs.

This consultation document does not constitute any legal, commercial or technical advice. The ICT Authority is further not bound by it. The consultation is without prejudice to the legal position of the Authority.

2. Structure

The paper is structured as follows:-

- Section 3: Legislative Basis
- Section 4: Guiding principles for IUC
- Section 5: Alternative Costing Approaches
- Section 6: Methodology for determination of cost based IUC
- Section 7: Access Deficit
- Section 8: Special rate for dial up internet calls
- Section 9: Impact on tariff

3. Legislative Basis

Section 18 (1) (c) of the ICT Act 2001, provides for the Authority to ***promote and maintain effective competition, fair and efficient market conduct between entities engaged in the information and communication industry in Mauritius and to ensure that this Act is implemented with due regard to the public interest and so as to prevent any unfair or anticompetitive practices by licensees***

Section 28 (4) (a) of the ICT Act 2001 provides for the Authority to determine the rates for interconnection in accordance with any charging principle in force.

4. Guiding Principles for IUC

The present IUC for fixed networks was determined in the context of a tariff re-balancing exercise carried out in September 2003. The said IUC charges need to be re-calculated since the operating environment has undergone significant changes. In working towards the calculation of the new IUC the Authority has been guided by the following principles:-

- (a) IUC has to be cost-based, and calculated in a fair and transparent manner;
- (b) IUC should provide for a reasonable return on assets deployed;
- (c) IUC is based on network resources used for interconnection;
- (d) IUC is progressive and helps in maintaining ‘Quality of Services, Innovation of Infrastructure, etc’

5. Alternate Costing Approaches

There are various approaches to determination of cost. The International Telecommunication Union (ITU) recommends three general approaches to cost determination - *Bottom-Up, Top-Down, and Outside-In*. The major decision to be taken

is to decide on the accounting principles, i.e. either to use historical or forward-looking costs in determining the IUC.

Another important consideration is to decide whether to use the fully distributed or incremental cost approach. The Authority after considering the pros and cons of the various approaches concluded that the use of forward-looking and incremental costs as the basis of the calculation will require a much more detailed and very elaborate exercise.

The historical cost is easier to monitor as it can be easily reconciled with the annual accounts but has certain drawbacks in terms of the cost, network design, spare capacity, etc of the incumbent operator. The use of forward looking and/or incremental cost is better for a competitive market, but has major practical difficulties.

With a view not to delaying the determination process for the new IUC, the Authority has decided to base the calculation of IUC for fixed networks on the historical cost of MT and on fully distributed cost principles. The Authority proposes to embark on a separate exercise for calculation of IUC based on LRIC subsequent to this present one.

6. Methodology for determination of cost based IUC

In 2005, the Authority started the calculation of IUC for fixed networks, based on the latest audited financial statements available at the time (i.e. 2004). In order to expedite the process, the Authority formed a joint working group with Mauritius Telecom. The Authority was guided by a consultant on costing matters. Based on the interaction with MT in the joint working group and the information made available, the consultant has worked out a costing model for determining the IUC.

The methodology used in the model is given below:-

- ◆ Identify the main network elements for unbundling (referred to as UNE)
- ◆ Identify the major traffic streams and the related traffic
- ◆ Distribute the entire assets over the UNE
- ◆ Distribute the actual depreciation over the UNE
- ◆ Provide return on capital employed as of 31.12.2004 and distributed same over the UNE
- ◆ Distribute the operational expenses to the UNE
- ◆ Calculate the gross annual expenses i.e., total of depreciation, return on capital employed and operational expenses
- ◆ Deduct the non-call revenues from gross expenses after deducting a special margin
- ◆ Arrive at the net annual expenses for each UNE
- ◆ Determine the UNE used in the various call types
- ◆ Determine the minutes of usage of the various UNE based on actual traffic
- ◆ Divide the net annual expenses with minutes of usage for each UNE
- ◆ Calculate the per minute cost of usage of each UNE
- ◆ Calculate the IUC based on the use of the UNEs for such interconnection

Considering the commercial sensitivity of financial and traffic data, same has not been provided in this paper.

The return on capital employed is a financial calculation and given that it is based on the accounting figures, it is year-specific. The rate of return on capital employed may vary in case of any change in the accounting figures. The capital employed by MT has been bifurcated into two parts i.e. Debt and Equity. The interest paid during the year 2004 has been used to determine the return on debt. This rate has been further adjusted for the taxation benefit. The return on equity is taken equal to a risk free rate of return applicable in Mauritius. A risk rate has been added to determine the rate of return on equity. Based on the debt-equity mix for 2004, the return on capital employed is calculated.

In the determination of non-call revenues for setting-off against the operating expenses, a special margin has been deducted especially to differentiate between the retail and wholesale business of MT.

7. Access Deficit

In the above model, the cost of access network includes the return on capital employed and the depreciation on assets used for the purpose. The access network refers to the customer dedicated network and includes the part of the network from the customer premises to the line card (SLTU) in the exchange. The average cost so arrived at has been compared with the actual rental receipts of MT for the period concerned. The deficit in the rental receipts over the cost arrived at is the 'Access Deficit'. The access deficit has been traditionally recovered by the incumbent operators through excess revenues generated on international calls. With competition in the international call market, the revenues from international calls have declined significantly and therefore this cross-subsidization can no more be maintained.

The recovery of access deficit is separated from the IUC. No part of the access deficit is merged with IUC, which shall be made purely cost based. The recovery of access deficit is proposed only through the international calls so as not to burden the domestic call tariffs. The ADC shall be payable to Mauritius Telecom only and not to the alternative fixed-line telecom operator.

8. Special IUC rate for dial up internet calls

It is proposed to maintain the IUC for the dial-up Internet access at its current below-cost rate of Rs.0.10 per minute as originating IUC. This is payable by the Internet Service Providers to the fixed telephone network operator.

9 Impact on Tariff

The IUC payable is an important cost element for any operator. The benefits to be derived, if any, in reducing the IUC, should accrue to the consumers. In this respect, the Authority is of the view that any reduction in the IUC should be translated into a tariff reduction.

Questions for Consultation

ISSUES RELATED TO CALCULATION METHODOLOGY

Question-1: The Authority is in the process of finalizing the new IUC based on the historical and fully distributed cost of Mauritius Telecom. It is considered that the interconnection charges based on novel costing methodologies, such as Long Run Incremental Cost (LRIC), will involve more elaborate studies and as such will have to be undertaken through a separate exercise, which will comprise of an elaborate process and consultation with the stakeholders following the present exercise. The Authority proposes that the new IUC regime should remain in force till such time that LRIC based interconnection charges is available, or for a period of 15 months, whichever is earlier. Do you agree to this proposal?

Question-2: In the calculation of the IUC, the Authority has to provide a reasonable return on the Capital Employed, which should be a mix of debt and equity along with a risk rate of return on equity, in line with international best practices. What in your opinion should be the reasonable rate of return on capital employed (ROCE) by MT in its business?

The stakeholders may provide their detailed comments on each component of ROCE.

Question-3: The Authority proposes to treat the wholesale business of MT such as leased lines, etc... separately by providing for a special margin on non-call revenues before appropriating them to reduce the operating expenses. What in your opinion should be the reasonable rate of such special margin?

ISSUES RELATED TO COST BASED IUC

Question-4: In the new IUC regime the Access Deficit Charges (ADC) are proposed to be calculated and levied separately in a transparent manner. The cost based IUC shall represent the charges purely for origination, transit and termination. Stakeholders may comment on the new provision.

Question-5: As the network elements used for origination and termination of various calls are practically same, the Authority proposes that termination and origination IUC charges in the fixed network should be uniform for all calls i.e., international, mobile and fixed calls. Do you agree with this? If not, please provide the reasons thereof.

Question-6: The IUC calculated based on MT accounts is proposed to be made applicable to all fixed networks. State whether the IUC calculated on the basis MT accounts be extended to fixed network of alternate telecom operators also?

Question-7: In order to promote the use of the Internet, the Authority proposes to continue with the special below-cost rate of IUC for the dial-up Internet calls. State whether in your opinion the present rate of IUC for dial up Internet calls is sufficient or is there a need to further reduce the rate? What should be the options for the recovery of such shortfall in the revenue of fixed-line operators?

ISSUES RELATED TO ADC

Question-8: The Authority proposes to prescribe a levy for the recovery of ADC only from the international calls.

- (a) What is your opinion for levy / recovery of ADC from some domestic calls as well?
- (b) State whether it is appropriate to use the difference between the share of the access providers in the termination charges on international calls prescribed under TO 2 of 2006 and the proposed cost-based IUC to provide for the ADC?

Question-9: State whether it is appropriate to allow MT to directly receive or retain the applicable ADC for the calls that leave or enter its network? What safeguards are required to build against excess appropriation of ADC to MT on this account?

TARIFF

Question-10: In the general consumers' interest, it is proposed that any reduction in the IUC be fully passed on to them in a transparent manner. Do you agree with this proposal or should the reduction in tariff be left entirely to market forces?
