



*(Date: 26 February 2003)*

**BOTSWANA TELECOMMUNICATIONS AUTHORITY (BTA)**

**BTA RULING NO. 1 OF 2003**

**[Pursuant to Section 19 as read with Section 47  
of the Telecommunications Act, 1996 (No. 15 of 1996)]**

**RULING ON INTERCONNECTION CHARGES DISPUTE**

**BETWEEN:**

**BOTSWANA TELECOMMUNICATIONS CORPORATION**

**AND**

**MASCOM WIRELESS (PTY) LIMITED**

**C. M. LEKAUKAU, EXECUTIVE CHAIRMAN**

The parties herein, namely, Mascom Wireless (Pty) Limited and Botswana Telecommunications Corporation (hereinafter referred to as Mascom and BTC respectively) entered into and concluded an Interconnection Agreement (hereinafter referred to as the Agreement) on the 13 day of August 1999. The essence of such an Agreement was to facilitate interoperability and access into each other's network, and its concomitant compensation, one being a fixed line network operator (BTC) and the other being a mobile cellular operator (Mascom). The said Agreement provided inter alia for the review and termination of the same. I must point out from the onset that the interconnection charges that were incorporated into the Agreement were set by the Botswana Telecommunications Authority (herein after referred to as BTA and/or the Authority) following a dispute settlement process (see in this regard BTA Ruling No. 1 of 1999). The interconnection charges that the Authority set in 1999 were to be valid for a period of 24 months effective 17 February 1998. The parties however decided to extend the interconnection charges' validity period in terms of the Agreement, which is the subject of these proceedings.

2. In March 2001, the parties commenced negotiations with a view to review the Agreement. A series of meetings were held as evinced by several correspondences between the parties on this subject matter. In the final analysis, the negotiations reached a deadlock. Pursuant to a jointly signed declaration of dispute dated

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5 July 2002, the parties filed with the Authority, an interconnection dispute for determination, the gravamen thereof being national interconnection charges.

3. It is now apposite for me to spell out the prevailing charges, which Mascom is desirous of having them retained, and the proposed charges, which BTC is advocating for as follows (all in Thebe per minute):

(a) Call Termination on BTC network (not taking into account corresponding volume discounts)

	<u>Current</u>	<u>Proposed by BTC</u>
Peak	24.0	35.0
Off-Peak	19.1	25.0

(b) Call Termination on Mascom network

	<u>Current</u>	<u>Proposed by BTC</u>
Peak	96.0	75.0
Off-Peak	76.9	58.0

4. It is worth mentioning that after the parties declared a dispute, BTC on the 8 July 2002 served a notice of termination of the Agreement on Mascom and thereby gave a 24 months notice pursuant to Article 17.1 of the Agreement. The notice of termination spurred Mascom to raise two points in limine namely, that there was no longer a dispute between the parties as a result of the notice of termination and furthermore that BTC had waived

its rights under the Agreement to seek review of the Agreement by serving the said notice of termination.

5. The two points in limine are crucial in that once I uphold them jointly or severally, they shall render consideration of the variation and/or review of the Agreement unnecessary and that would be the end of the matter. Before I discuss the said points in limine, it is appropriate for me to outline the procedure, which the parties were advised by the Authority to follow and which the parties complied therewith.

6. In brief, BTC and Mascom were advised to submit in a case-stated format their written submissions and arguments (hereinafter referred to as the Initial Submissions), which they did on 4 October 2002. The said written submissions were exchanged between the parties to enable them to know each other's cases. Following the exchange of Initial Submissions, the parties were given an opportunity to respond to each other's submissions in writing (hereinafter referred to as the Reply Submissions). Mascom and BTC submitted their Reply Submission to the BTA on 22 November 2002. The said Reply Submissions were also exchanged between the parties. After the Reply Submissions, the parties were further afforded an opportunity to make oral submissions (hereinafter referred to as the Oral Hearings). The first of these were in the absence of each other (Mascom individual Oral Hearing in the morning of 21 January 2003 and BTC individual Oral Hearing in the morning of 22 January 2003)

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and then a final one in each others' presence for purposes of making oral rebuttals (the joint Oral Hearing in the afternoon of 23 January 2003).

7. In the morning of the day of the joint Oral Hearing Mascom wrote BTA a letter in which it raised two points touching on the propriety or otherwise of the procedure and the possible violation of the rules of natural justice by the Authority. When amplifying those points during the joint Oral Hearing, Mascom also sought postponement of the joint Oral Hearing so as to be afforded ample time to respond. In reply during the joint Oral Hearing, BTC wanted the matter to proceed as scheduled. In my corresponding ruling read out during the beginning of the joint Oral Hearing, I held that the procedure adopted by the Authority as detailed in the preceding paragraph more than substantially complied with the rules of natural justice. The parties were afforded ample time to prepare their cases. They were also given reasonable time to make Initial and Reply Submissions and also afforded individual and joint Oral Hearings and thus the request for postponement was properly refused.

8. Before addressing the preliminary and substantive issues, I consider it important to underline the importance of this dispute and to place it in context.

9. The setting of fair and efficient interconnection charges is an essential requirement for the creation of a competitive

telecommunications market. Interconnection charges can account for a substantial proportion of operators' expenses and can also constitute a very significant revenue flow, and hence the importance thereof cannot be overstated. I therefore consider that the establishment of a correct and appropriate interconnection charge framework is of fundamental importance in ensuring a consumer friendly and pro-competitive telecommunications market in Botswana.

## **PRELIMINARY ISSUES**

10. I shall now address the preliminary points raised by Mascom seriatim.

### **Whether there is a dispute**

11. In its Submissions and during Oral Hearings Mascom has argued that there is no dispute. According to Mascom, BTC's serving of a notice of termination, altered the factual position with regard to the joint declaration of dispute and therefore required a formal withdrawal of the dispute by the parties. Mascom further argued that by serving the notice of termination, BTC was accepting to abide by the existing terms and conditions of the Agreement until it lapses 24 months after the date of the notice. In short, Mascom is arguing that the serving of notice of termination vitiated the review process that has been initiated three days earlier. During the hearing Mascom was asked by the Authority

whether their case was that once a party serves a notice of termination, it forgoes the right to invoke the other provisions of the Agreement during the notice period. In response, Mascom suggested that in so far as the review was concerned, BTC could not during the notice period seek to continue to review the Agreement.

12. In its Reply Submission and during Oral Hearings BTC argued that the serving of notice did not preclude it from continuing with the review process which it had initiated.

13. A dispute, by its very nature, presupposes the co-existence of a non-frivolous claim and a rejection of the said claim. In other words, there must be both a claim and a rejection in order to constitute a dispute or difference. The issue for determination now is whether there is a dispute between the parties, bearing in mind the notice of termination served on Mascom by BTC. **I hold that the serving of notice of termination by BTC on Mascom did not in any way affect the factual position of the parties herein.** The reason for so holding is that the Agreement still subsists and it will only lapse after 24 months from the date of notice of termination. Not only that, even the dispute still subsists since the provision under which it was declared remains valid notwithstanding the notice of termination. In any case the Agreement expressly recognises this fact. Clause 16.5 thereof provides as follows:

“For the avoidance of doubt, it is hereby agreed that notwithstanding these provisions for review the terms and conditions of this Agreement shall remain in full force and effect during such review until such time as the Parties complete an agreement replacing or amending this Agreement.”

**14. Taking into consideration all of the analysis and discussion above, I hold that there is indeed a dispute between the parties.**

**Whether BTC has waived its rights to seek review or variation of the Agreement.**

15. It has been argued by Mascom that, BTC, by serving a notice of termination thereby waived its right to seek a review or variation of the Agreement. Mascom places heavy reliance on Article 16.3 of the Agreement, which states as follows:

“If notwithstanding the parties negotiating in good faith pursuant to clause 16.2 above, at the end of (two months) from the date of the Review Notice the Parties have failed to agree appropriate modifications to this Agreement and the Review Notice has not been withdrawn by the issuing party then the parties will each agree either to:

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(a) each prepare a written proposal on the dispute and send the other party a copy of such proposal within 7 days of the end of such period; and refer the dispute for resolution in accordance with the procedures specified in clause 21; or (my underlining)

(b) terminate this Agreement.”

16 According to Mascom’s interpretation of the clause cited supra, the parties can only choose one option and cannot elect both. In other words, once a party proceeds by referring a dispute to the BTA for determination, then and only then will such party be precluded from seeking termination of the same Agreement. Mascom is therefore arguing that the aforesaid provisions are mutually exclusive. At this juncture, it is worth mentioning that BTC’s notice of termination was pursuant to Article 17.1 as stated in its letter dated 8 July 2002 and not Article 16.3, which Mascom is relying upon.

17. Article 17.1 of the Agreement, which BTC is relying upon, states as follows:

“This Agreement will remain in force unless and until terminated by either party giving to the other at least 24 months notice in writing to expire at the end of the Initial Period or at the end of any calendar month

thereafter or either Party ceases to hold a licence granted by the Regulatory Authority.”

18. I hold that serving of notice of termination of the Agreement herein did not ipso jure (through law) and ipso facto (through fact) mean that the terms and conditions of the Agreement lapsed at the time the notice was served. The Agreement will only lapse after effluxion of 24 months from the 8 July 2002, the date on which the notice was served. In the interim, all the constituent terms and conditions of the Agreement remain in existence. Once such terms and conditions are in existence; as I hereby hold, the parties’ rights, duties and obligations arising therefrom still subsist. The end result thereof is that any party may invoke any of the provisions of the existing Agreement. The notice of termination did not therefore freeze or stall the operation of the terms of the Agreement.

19. If I were to extend Mascom’s interpretation of the Agreement to its logical conclusion, it would mean that once a party has served a 24 months notice as provided for in the Agreement, then there can never be any exercise of any of the terms of the Agreement for instance, review of the terms of Agreement whatsoever. A party will be precluded and estopped from invoking any of the terms of the Agreement and this could not have been the intention of the contracting parties. Serious and far reaching economic ramifications within the telecommunications sector may arise if such an important Agreement is rendered immune from,

not only review, but also the exercise of any rights emanating from the Agreement for a period of 24 months, which is the notice period.

20. The telecommunications market is an ever-evolving industry and having to wait for a period of 24 months (notice period) without invoking any of the terms of such a very vital agreement may have adverse consequences within the telecommunications industry. I would therefore adopt a conjunctive interpretation of Article 16.3 for purposes of giving effect to the intention of the parties and to remove any absurdity that may arise therefrom and to further ameliorate any adverse repercussions (as stated above) that may arise once I find solace in a disjunctive interpretation. The use of the word 'or' in the said Article is therefore construed conjunctively as opposed to disjunctively, bearing in mind that in ordinary usage "or" is disjunctive whereas under certain instances like in the present case, it is construed conjunctively. In this connection see Uddin v. Associated Portland Cement Manufactures Ltd [1965] 2 QB 582. On the basis of this progressive reasoning, I am inclined to conclude that BTC did not waive its right to seek a review of the said Agreement by serving a Notice of Termination of the Agreement on Mascom.

21. Even if I were to rule that BTC can only and distinctively seek either a review or termination of the Agreement, that is to say, to adopt a disjunctive interpretation, the end result shall be the same. If it is review on its own, that does not present any

difficulty at all as the Authority is now asked to review the said Agreement by BTC. On the other hand, if it is termination as preceded by the served notice, still a review of the Agreement shall be in order for the simple reason that notice of termination did not in any way extinguish any of the terms of the Agreement, for instance, review of the said Agreement.

22. If I were to invoke, mero motu, a common sense approach that if two or more acts by the same individual are repugnant or inconsistent, the last one must prevail, still, such an approach does not advance the Mascom case any further. In this case, BTC asked initially for a review of the Agreement and three days later served a notice of termination of the said Agreement. If I uphold that notice of termination must prevail, the aforestated conclusion is also reached, which is: notice of termination does not ipso facto and ipso jure freeze the operation of the terms of the Agreement and BTC will be justifiably entitled to invoke any of the provisions of the Agreement.

23. Assuming I were to agree with Mascom that the provisions of clause 16.3 are mutually exclusive and should be interpreted disjunctively, I still cannot agree that BTC could be said to have waived its right to continue with the review process it initiated prior to the serving of notice of termination. In that case my position would be that BTC did exercise its option, in terms of clause 16.3, on 5 July 2002 by opting for a review process and that by so doing it may have precluded itself from opting for a termination process.

24. I accordingly hold that **BTC has not waived its right to seek a review of the Agreement.**

25. Having adequately addressed the preliminary points in limine raised by Mascom I shall now proceed to briefly consider instances under which a review of the Agreement may be possible.

26. In terms of the Agreement, certain procedural and substantive requirements have to be satisfied in order to initiate the review process. The relevant clause thereof is clause 16, dealing with the giving of the review notice, and review when there is a material change of circumstances. In the circumstance the said conditions precedent have been satisfied by BTC. In any event, Mascom is not arguing that there was non compliance with either procedural and or substantive requirements of the said article dealing with review. **On the basis of the afore mentioned justification I hold that BTC is entitled to seek a review of the Agreement.**

#### **LEGAL BASIS FOR THE DETERMINATION OF INTERCONNECTION CHARGES**

27. In reviewing the appropriate legal basis for the determination of interconnection charges, I shall place heavy reliance on the Act, the licences of the two parties herein, the Agreement and the

Telecommunications Policy of Botswana (1995), (hereinafter referred to as the “Policy”).

**The Telecommunications Act, 1996 (No. 15 of 1996)**

28. The relevant provision thereof is section 47 of the Act, which inter alia, provides that in the event of an interconnection dispute the Authority shall have the power to decide on the matter and set down such terms and conditions for interconnection as seem fair and reasonable to it. The fundamental indicia thereof is what seems to be a “fair and reasonable” interconnection charge to the Authority in each case.

29. What amounts to “fair and reasonable” charge as provided for in section 47 depends upon a host of several considerations. Such considerations may include significant market power or otherwise of the operators, the possibility of revenue sharing by concerned operators, level of competition, benchmarking, promotion of universal access, interconnect access charge, consumer interests; subscriber base, transparency, cost orientation; reasonable rate of return on investment, non discrimination, market structure and the Policy. It is not intended that the above stated list is exhaustive, nor that all the factors listed above would necessarily be relevant in any particular dispute. As stated above, it will be upon the Authority to determine what is fair and reasonable in the circumstances. In addition, the Authority is mindful of its mandate under section 17 of the Act,

which is the promotion and development of efficient telecommunications services in Botswana.

### **Telecommunications Policy for Botswana**

30. The Policy recognises interconnection as forming part of the liberalisation process and development of competition in the telecommunications sector. It is prudent for me to refer to the relevant exposition in the Policy where a justification for a mandatory and mutual interconnection obligation is stated at paragraph 8.6 page 18 as follows:

**Justification.** In order to rationalise the use of present network and to avoid duplication of infrastructure all new and present networks should be interconnected for national economic benefit as well as for the benefit of the consumer.”

31. The Policy further advocates for a fair and reasonable pricing. In this connection, see paragraph 8.9 at page 20 where it is stated as follows:

“Prices should be deemed fair and reasonable if they reflect recovery of the investment in the medium to long term perspective.”

32. An interpretation of the afore-cited Policy guideline reflects or advocates for a fair and reasonable pricing criteria, taking into account all the goals enshrined in the Policy, such as recovery of the investment, promotion of universal access, liberalisation, effective competition and the interests of consumers.

### **BTC and Mascom Licences**

33. In respect of BTC's licence the relevant clause is 5.1, which embraces the principle of cost orientation for regulated tariffs, which includes interconnection charges. See also clause 7.2.3 of the said licence, which obliges the BTC to ensure, that interconnect elements charged for are sufficiently unbundled and that they are based on underlying costs. With respect to Mascom's licence, the relevant clause is clause 3 dealing with leased lines and fixed links. Sub clause 3.1.3 thereof provides that for purposes of establishing interconnection of its public land mobile network elements and the public switched telephone network of BTC, Mascom shall use leased lines. Furthermore, sub-clause 3.4 states that in the event of a dispute relating to the reasonableness of any leased line service or charge, the parties shall refer the dispute to the Authority for determination.

34. When reconciling and juxtaposing the two licences of the parties with the Act, I have no doubt in my mind that Mascom licence is consistent with the Act in that it requires reasonable interconnection charges as contained in clause 3 of the licence.

Concerning BTC's licence, I have no hesitation in concluding that it is equally consistent with the Act insofar as it requires cost based charges, which are an integral component or subset of fair and reasonable charges. In other words, cost based charges and other considerations will shed light on what is fair and reasonable. A licence by its very nature sets out the scope, terms and conditions that the concerned operator should comply with. It may be equated to a contract between the operator and the Authority under which the operator enjoys rights, duties and obligations. A violation of those rights, duties and obligations may attract or be visited by a form of sanction imposed thereon by the Authority. It therefore follows that the BTC and Mascom are duty bound to comply with the terms and obligations imposed by their licences. **My finding is that both the BTC and Mascom licences are consistent with the requirements of section 47 of the Act.**

### **Interconnection Agreement**

35. Appendix C of the Agreement between the parties herein recognises cost-based charges. At paragraph 1 thereof it is stated as follows:

“The parties recognise that:

- It is the intention that interconnection charges will be based on costs (my emphasis), although it is stated in the cellular tender document that the costing figures may not be available in the short term and another method should be used;

- The charges should:
  - (a) compensate the provider fairly for the services it provides and produced (sic) a reasonable return on the assets and resources involved;
  - (b) encourage increased networks usage and in the long run reduce costs of service to the customers;
  - (c) not be prohibitively high to inhibit the growth of cellular services”.

36. The Agreement also recognises cost based charges. Not only that, it also states under (a) above that the charges should compensate the operator fairly, and in my view this encompasses fairness as required in section 47. Under (b) above increased network usage as well as reduction of costs of services to customers is encouraged when setting interconnection charges and lastly (c) advocates for charges that are not prohibitively high to the extent of inhibiting cellular growth. Interpreting all these three guidelines jointly and cumulatively, I make a finding that they require fair and reasonable interconnection charges. The said charges should satisfy what I may term the “triad of interconnection”, that is to say, the said charges should be fair to the operators, fair to the end-users or customers and lastly satisfy the general mandate of the Authority as provided for in the organic statute and the Policy. In the final analysis, the said three

guidelines in the Agreement are consistent with section 47 of the Act, which requires fair and reasonable interconnection charges.

**37. Taking into account all of the analysis and discussion above, I hold that the legal principle for determining interconnection charges in Botswana is the “fair and reasonable” test. It is therefore entirely upon the Authority to determine whether in the setting of interconnection charges, cost orientation and or efficiency should be invoked in addition to or forming part of any other criteria which the BTA may deem appropriate and justifiable to satisfy the fundamental or critical epithet of fair and reasonable pricing. Interconnection charges may, in appropriate circumstances be deemed to be fair and reasonable if they approximate costs or are based on efficiency criteria.**

## **PRICING OF INTERCONNECTION**

38. I have identified the following three principal approaches to the pricing of interconnection around the world: revenue sharing arrangements; sender keeps all arrangements (i.e. bill and keep); and interconnection usage charges (hereinafter referred to as IUC). However, sender keeps all arrangements are not relevant to this dispute and hence I shall only discuss revenue sharing arrangements and IUCs.

## **Revenue Sharing Arrangements**

39. Revenue sharing arrangements are relatively simple to implement. Historically, they were the result of negotiations between the corresponding non-competing operators. Hence, revenue sharing arrangements are generally not cost-oriented and therefore they are generally considered to be economically inefficient. Therefore, the actual revenue share amounts tended to reflect the bargaining power of the respective operators. As such, operators often tended to focus on the relative ratio of revenues being assigned to each operator, rather than the absolute level of the revenue amounts. Once competition is introduced, as it is in our jurisdiction, the revenue sharing arrangements becomes impractical and as well exhibits a number of policy disadvantages.

40. From a practical perspective, revenue sharing arrangements introduce a high degree of unpredictability in the revenue flows of terminating operators, and recurrence of disputes. If an entrant wants to lower one of its consumer prices that has traditionally been the subject of a revenue sharing arrangement, the result will be lower revenue share amounts not just for that operator but for all the operators involved in carrying the call. However, these interconnecting operators have no desire to accept lower payments in order to support the competitive strategy of the other operator.

41 Revenue sharing arrangements have a number of additional disadvantages. First, as may be apparent from the discussion above, revenue sharing arrangements are not conducive to vibrant consumer tariff competition. Second, revenue sharing arrangements may also be discriminatory. For example, in competitive markets, different originating operators may set different consumer tariffs for a call to the same terminating network. Hence, the terminating operator may be paid more or less by different originating operators for exactly the same service (termination of traffic), depending on the respective consumer tariffs of the originating operators.

42. My Ruling (No. 1 of 1999), which established the current interconnection framework in Botswana, was generally reflective of a revenue sharing arrangement. At that time, with the recent introduction of mobile services by Mascom and Vista, and the continuing de facto BTC monopoly on fixed services and in order to promote stability and certainty in the sector, it was necessary to set termination and origination charges for BTC only. Based on the fixed consumer tariffs, these BTC termination and origination charges resulted in fixed corresponding revenue share amounts for Mascom.

## **Interconnection Usage Charges**

43. IUCs are the charges payable between interconnecting operators for the actual use of each others' network to originate, transit or terminate a call. Hence, there may be up to three types of IUCs: origination, transit and termination. I will now focus on IUC termination charges, given that IUC transit charges are not applicable to this dispute and that IUC origination charges are generally used and are appropriate for situations where the terminating operator sets the corresponding consumer tariff.

44. The originating operator would, from the consumer tariff that it determines and collects, pay a set amount to the corresponding terminating operator. The amounts paid would generally be independent of the consumer tariff. The residual amount, that is the amount remaining from the consumer tariff after termination charges, is the amount retained by the originating operator (hereinafter referred to as the retention amount).

45. I am of the view that IUCs are currently the best practice approach for the pricing of interconnection in markets where competition has been introduced, such as in Botswana. This is for a number of practical and policy reasons.

46. From a practical perspective, IUCs have been proven around the world as the most sustainable approach to interconnection pricing in competitive multi-operator environments. From a policy perspective, I find that IUCs have number of advantages. First, IUCs are more conducive to vibrant competition in the consumer tariffs. With IUCs, the originating operator has a more direct control on its retention amount, given that it has to pay the terminating operators the corresponding (fixed) charges. Second, IUCs tend to be most equitable under competitive scenarios. In these instances, a terminating operator will charge all operators who terminate their traffic on its network the same non-discriminatory (termination) interconnection charge. Third, IUCs are generally more compatible with the principle of cost-orientation. Because IUC termination charges are independent of consumer tariffs, they may be set at efficient cost-oriented levels.

47. Having addressed the advantages and disadvantages associated with the interconnection pricing methods, I shall now dwell on the submissions of the parties. In its Initial Submission, BTC did not address the pricing of interconnection issue directly. However, I note that BTC appears to include elements of IUCs and of revenue sharing arrangements. The BTC Initial Submission focused on the presentation of the estimates of BTC's origination and termination charges of calls to/from the mobile network. This has elements of IUCs. BTC, however, appears to propose that the changes in its origination and termination charges be undertaken

within the context of a fixed consumer tariff. In effect, therefore, such a proposed increase would appear to result in a reduction in the corresponding shares received and retained by Mascom, respectively. This is an element of a revenue sharing arrangement, with a proposed increase in the share for BTC.

48. In its Reply Submission, BTC did not address the interconnection pricing issue directly. It did, however, address the issue of the relative ratio of fixed to mobile termination charges in neighbouring African countries, in response to the specific benchmarking approach proposed by Mascom in its Initial Submission. As I pointed out earlier, most of the discussions associated with the relative ratio of mobile to fixed interconnection charges are more reflective of revenue sharing arrangements rather than the IUCs.

49. In the Oral Hearings, however, BTC appeared to recognise the relative advantages of the IUC termination charges over a revenue sharing arrangement. In particular, BTC noted the benefits of de-linking (wholesale) interconnection charges from the (retail) consumer tariffs.

50. In its Initial Submission, Mascom did not address the pricing of interconnection issue directly. However, based on my analysis, the Mascom Initial Submission, which places emphasis on the relative ratio of fixed to mobile charges appears to reflect a revenue sharing arrangement.

51. In the Oral Hearings, Mascom, when presented with a revenue sharing versus IUC arrangements options by the Authority, appeared to recognise the relative advantages of the latter over the former.

52. My review of the international practice and experience of interconnection pricing suggests that as sector reforms have taken place around the world, including the introduction of competition, an increasing number of regulators have discarded revenue sharing arrangements in favour of IUCs.

53. I note that while in their Initial and Reply Submissions BTC and Mascom do not directly address the pricing of interconnection issue, once the matter was presented as a clear choice by the Authority during the Oral Hearings, both parties appeared to recognise the relative advantages of the IUC termination charges over revenue sharing arrangements. I further note that in practice, the parties have already adopted a IUC termination charge regime.

**54. For practical and policy reasons discussed above, I consider that an IUC termination charge regime is the most desirable approach for the pricing of interconnection in Botswana at this time. I therefore direct that an IUC termination charge approach for interconnection pricing between BTC and Mascom be implemented.**

## **SETTING OF INTERCONNECTION CHARGES**

55. In considering the substantive issues under dispute I have carefully reviewed the Initial and Reply Submissions and the arguments made during the Oral Hearings. In order to better understand the dynamics of the dispute, I have undertaken a thorough analysis and assessment of data provided by both parties. I have also reviewed and assessed what I consider appropriate and efficient interconnection trends and practices in other countries, especially with respect to the current best practice of using efficient benchmarks.

56. Given that I have directed BTC and Mascom to implement an IUC termination charge approach to the pricing of interconnection, the next fundamental step is to examine the appropriate methodology for the determination of termination charges for BTC and Mascom. I have identified costing methodologies and benchmarking approaches as the two broad principal approaches to the setting of interconnection and I proceed to examine the advantages and disadvantages of these two approaches.

### **Costing Methodologies**

57. The cost approaches can be identified into two principal criteria as follows: (1) historical or backward-looking approach; and (2) the forward-looking approach.

## **Backward-Looking Approach**

58. This approach involves the compilation of accounting and other historical data to model the actual network in place and to price it based on what was paid for each network element. The best-known variation of this approach is fully distributed cost (“FDC”) or “fully allocated costs”. Due to general lack of detailed analytical accounting data, however, FDC allocates the relevant investment across broad service categories.

59. The main criticism of this approach is conceptual. In comparison to the forward-looking approach, the backward-looking approach does not adequately reflect the dynamics of competitive markets. Hence, the costs that are calculated by this approach may not be economically efficient.

60. There are also a number of practical criticisms to this approach. One practical criticism of the backward-looking approach that I find particularly pertinent is that historical costs may reflect investment, operational or technological inefficiencies of the operator. These inefficiencies have often been found to be relatively large, especially in state-owned monopoly operators. Further, historical costs do not reflect changes in technology or management methods – such technology and methods, if utilised today, could imply a much lower cost. Another possible form of inefficiency is that often the operator may have over-invested in

the past so that it currently has spare capacity. Hence, with respect to the setting of interconnection charges, it is argued that historically inefficient operators may be “passing on their inefficiencies” as a result of the adoption of this approach. Additionally, such inefficiencies could be passed to the consumer in the form of higher consumer tariffs.

61. In combination, these criticisms have resulted in a significant shift. While still being widely used for management purposes, regulators are increasingly replacing backward-looking approaches with forward-looking costing methodologies and/or benchmark approaches.

### **Forward-Looking Approach**

62. This approach is generally preferred by most regulators because it reflects better the dynamics of competitive markets. Competitive operators are compelled to look forward to set prices to compete, rather than to look back at prices based on their historical investments. Accordingly, the costs that are calculated by this approach, including, in particular, IUC termination costs, are generally considered to be economically efficient because they most closely approximate the prices that would otherwise be present in effectively competitive markets. Therefore I am inclined, to hold the view that cost orientation, in as much as it leads to charges that approximate costs, is an appropriate principle to apply in the current circumstances.

63. The forward-looking approach uses current and projected future prices and attempts to calculate an efficient network to provide the services in question. The most common and generally accepted forward-looking approach is long-run incremental costs (“LRIC”). LRIC are the incremental costs that would arise in the long run with a defined increment to demand.

64. LRIC may be implemented in a number of ways, including the European Commission’s long run average incremental costs (“LRAIC”) and the United States of America’s Federal Communications Commission’s total element long run incremental costs (“TELRIC”). These variations are based on the LRIC standard but differ in terms of the size of the increment and the treatment of joint and common costs. All of these variations include “mark-ups” to cover a portion of joint and common costs.

### **Benchmarking**

65. Benchmarking is often used by regulators as a transitional or complementary approach. There are different benchmarking methodologies. In particular, an efficient benchmarking approach would use actual or projected efficient prices in other countries. Efficient prices would result from effective competition or where the regulator has established prices based on an acceptable costing methodology. For instance, the European Union (“EU”) used a variant of efficient benchmarking to ensure the progressive

reduction of fixed interconnection charges in the transition period between the general introduction of competition in 1998 and the implementation of LRAIC and other costing methodologies by national regulators in the EU. Specifically, the EU's "best current practice" approach avoided many of the common pitfalls of benchmarking. For instance, it did not select an average or the mid-range of existing charges. Given that at the beginning of this period there was no effective competition in most EU countries or that most countries had not implemented efficient costing methodologies, taking an average or a mid-range of all existing charges would likely have resulted in inefficient benchmark termination charges not oriented to costs.

66. The EU's "best current practice" approach may be summarized as follows. For each level of interconnection, it reviewed the standardized interconnection prices for its 15 member countries. The EU has defined three levels of interconnection charges for fixed termination depending on where in the network hierarchy the call is terminated and the distance the call has to be carried: "Local" represents interconnection at the local exchange; "Single Transit" represents interconnection at the "Metropolitan" level, including the use of one tandem switch; "Double Transit" or "National" allows access to all customers on the network and includes tandem links of at least 200 km. The EU then ranked the standardized prices for each level from the lowest to highest. For each level, the EU based its "best current practice" range on the three lowest interconnection charges in its member

countries. Hence, the lowest interconnection price constituted the lower end of the “current best practice” range while the third lowest interconnection price constituted the upper end.

67. In its Initial Submission, BTC proposed using the backward-looking costing methodology it had earlier developed for the estimation of its own origination and termination charges. Based on these cost calculations BTC argues that its origination and termination charges under the current arrangements are too low and do not allow it to fulfill its obligation of cost-orientation. In its Reply Submission, BTC insisted that its cost-based approach was superior to the benchmark approach proposed by Mascom in its Initial Submission.

68. During the Oral Hearings, BTC continued to put forward its cost-based approach to support its proposed interconnection charges. It maintained its position that the benchmark comparisons proposed by Mascom were inferior in principle to the implementation of a costing methodology.

69. On the other hand, Mascom in its Initial Submission provides an extensive international comparison of fixed and mobile interconnection charges and the relative ratio of fixed to mobile termination charges. After reviewing world-wide and continental averages, Mascom also provides data for a number of developing countries as well as for the 15 member countries of the EU. Mascom argues that these absolute and relative comparisons

support the status quo arrangement in Botswana. Commenting on the EU experience Mascom notes that some regulators have been significantly reducing mobile termination charges. However, Mascom argues that LRAIC-type modelling, especially for mobile services, is generally at its infancy even in the EU.

70. In the Oral Hearings, Mascom continued to express its preference for a benchmark approach to the setting of interconnection charges. Mascom further elaborated on its position with respect to cost methodologies. It noted that it was not opposed in principle to the development and implementation of an approved costing methodology. What Mascom rejected was the imposition of any particular type of methodology by BTC without BTA approval. It argued that the BTA had not made a final decision on an approved costing methodology and hence any specific proposal by BTC was in principle not acceptable to Mascom. At this point, I wish to acknowledge that the Authority has not yet developed principles to be applied by operators in the setting of tariffs as provided for under section 18(1) of the Act and that shall be done in due course. The Authority is nonetheless duty bound to make a determination herein on the basis of what it considers fair and reasonable.

71. Based on my review of the Submissions and the Oral Hearings and my extensive analysis and assessment of approaches used by regulators around the world to set fixed and mobile interconnection charges, and taking into consideration the

policy and practical advantages and disadvantages of each approach as summarized above, I consider that the current best practice approach for the setting of interconnection charges is a forward-looking LRIC methodology, as it tends to result in the calculation of economically efficient cost oriented charges. I recognise, however that due to the time required to develop and implement such a methodology, it would not be feasible or desirable to implement a forward looking LRIC approach within the context of the current dispute. In the long run, the Authority supports the development and implementation of a forward-looking costing methodology for the determination of interconnection charges.

72. Taking into account the impracticality of implementing a forward-looking LRIC methodology, I have in the interim, considered a number of options with respect to the setting of interconnection charges. Given my findings above, in assessing these options I will place special emphasis on whether their implementation is likely to result in efficient termination charges for BTC and Mascom.

73. One option I considered was to set the BTC interconnection charges based on the backward-looking costing methodology proposed and implemented by BTC. I am of the view that the backward-looking costing methodology is conceptually inferior to the preferred forward-looking costing methodology, in that it does not accurately reflect the workings of competitive markets.

74 If I were to assume that the costing methodology proposed by BTC was acceptable to the Authority, its adoption in this dispute would raise the question of the appropriate methodology to be applied by the BTA to calculate the termination charges for Mascom. Under this scenario, the principle of symmetrical regulatory treatment and fairness would suggest that the same backward-looking cost methodology would also be applied to Mascom. However, due to the time required to actually implement such a methodology for Mascom, this option does not appear to be feasible or desirable within the context of this dispute. Hence, for conceptual and practical reasons, I do not consider this option to be implementable. From a practical perspective, therefore, the most appropriate remaining option appears to be an efficient benchmarking approach.

**75. Based on my analysis and discussion above, I hold that an efficient benchmarking methodology is the most likely to result in efficient benchmark termination charges for BTC and Mascom.**

76. There are two principle variables in implementing an efficient benchmarking methodology. One is the countries to be included in the benchmark sample. The other is the selection criteria of the actual benchmark level or range within that sample. I shall now discuss these in turn.

## **Sample of Countries**

77. In their Submissions, BTC and Mascom presented a number of different samples. I found the world-wide or continental samples presented by Mascom as generally unhelpful, given that the methodologies used to calculate the interconnection charges are not known. Further, many of these samples may include countries with Receiving Party Pays (RPP) regimes, which would make the sample inappropriate given the Calling Party Pays (CPP) regime currently used in Botswana.

78. Mascom presented some samples of Southern African countries. Indeed, I consider that, in principle, the review of African, Southern African or SADC member countries samples could be important. However, I was not given any information with respect to whether any African country has implemented LRIC-type costing methodologies for the calculation of fixed and mobile termination charges. Further, there does not appear to be a significant number of countries in Africa where sufficient competition would result in efficient termination charges. In summary, there is nothing to suggest that in Africa there exists a useful number of countries from which to construct a sample that would incorporate either efficient charges based on appropriate costing methodologies or efficient charges that result from effective competition. In effect, if I were to choose a sample of

African countries, I would be concerned that much of the sample would include interconnection charges that are the result of negotiations, rather than cost-orientation. Hence, I consider that a comparison with these countries would not promote the efficiency objective; rather, such a comparison would reflect the relative negotiating power of the respective operators in each of the countries. In spite of the intuitive appeal of selecting a sample of African countries, I consider that African comparisons are not an appropriate sample.

79. Mascom also placed some emphasis on the 15 member countries of the EU. I have researched the experience of the EU countries with respect to fixed and mobile interconnection. Based on this review, I consider that the EU countries represent a sample that is particularly well-suited to meet the BTA objective for the setting of efficient termination charges for BTC and Mascom, for a number of reasons, some of which I discuss below.

80. First, EU countries apply a CPP or CPP-like arrangement for fixed-mobile interconnection. This is consistent with the situation in Botswana. Second, as part of EU governance arrangements, all EU countries are required to implement and comply with European Commission Directives, including with respect to interconnection and interconnection costing methodologies. This results in a relatively homogenous regulatory framework in each country that facilitates intra and extra-EU comparisons. Third, the EU has developed and implemented for more than four years a

well-defined and highly-regarded benchmarking methodology for interconnection charges. This methodology includes the criteria for ensuring adequate comparability to take into account the level of physical interconnection (local, metropolitan and national), the time-of-day that the call is undertaken and the structure of interconnection charges. The fact that the EU benchmarking methodology has been tried and tested ensures that, if I were to consider it, it would be a reasonable alternative. Fourth, many of the national regulatory authorities have developed and actually implemented costing methodologies, including LRAIC methodologies for interconnection charges.

81. For fixed termination, most national regulators in the EU have implemented costing methodologies to guide interconnection charge setting. Of this group, six have implemented forward-looking LRAIC methodologies and an additional number are in the process of developing LRAIC to be implemented in the near future, replacing historical costing methodologies. Hence, I consider that the EU provides a good sample of countries that have reached or are in the process of reaching efficient cost-oriented termination charges for fixed networks, based on the implementation of costing methodologies. In fact, in recognition of this, in 2002 the EU decided to discontinue its “current best practice” benchmarking because of the progressive reduction of interconnection charges to the “current best practice” recommendations.

82. With respect to mobile, there is an increasing trend amongst regulators in favour of the regulation of mobile termination charges. In the EU, in particular, the UK and Austria, have developed and implemented LRIC-based costing methodologies. Other EU regulators have used other approaches, including efficient benchmarking, to mandate significant decreases in mobile termination charges, including in Sweden, France and Belgium.

83. I recognise that the economic and telecommunications development conditions in the EU are different from those of Botswana. One possible risk in this regard is that the selection of the EU sample may result in benchmark termination charges for BTC and Mascom that are below their efficient forward-looking costs. I have fully considered this possibility and have taken the necessary precautions, including the implementation of a transition period, to mitigate this risk.

**84. Based on the analysis and discussion above, I hold that the 15 member countries of the EU provide the most appropriate efficient benchmarking sample to be used in the setting of efficient termination charges for BTC and Mascom.**

## **Benchmarking Selection Criteria**

85. For fixed termination, I am confident that most of the EU countries have reached or are in the process of reaching efficient cost-oriented termination charges. Based on my review of the data provided by BTC as part of this process, I consider that the EU-defined “National”-level interconnection is the most comparable to the situation in Botswana. **Hence, for fixed termination, I hold that an average or mid-range of all the 15 EU countries for “National” interconnection constitutes an efficient benchmarking methodology and hence a fair and reasonable basis on which to determine the efficient benchmark termination charge for BTC.**

86. For mobile termination, I am not confident that most of the EU countries have reached or are in the process of reaching efficient cost-oriented termination charges. Hence, for mobile termination, I do not consider an average or a mid-range of all the 15 EU countries to constitute an efficient benchmarking methodology. **Instead, I hold that an average or mid-range of the “current best practice” range, as defined by the EU, constitutes an efficient benchmarking methodology and hence a fair and reasonable basis on which to determine the efficient benchmark termination charge for Mascom.**

## **DETERMINATION OF BTC AND MASCOM TERMINATION CHARGES AND IMPLEMENTATION ISSUES**

87. I have already decided on a new framework for the pricing of interconnection (IUC termination charge approach), which is independent of consumer tariffs and on the methodology for the setting of these termination charges (based on efficient EU benchmarking). I now proceed to determine the actual efficient benchmark termination charges for BTC and Mascom. I do not, however, intend to enforce immediately the resultant efficient termination charges. I consider below a transition period and volume discounts.

### **Volume Discounts**

88. In order to facilitate the development of the mobile sector, in my ruling of 1999, I ordered mandatory volume discounts on the revenue amount for the termination of traffic on the then largest operator, BTC. I did not at that time order volume discounts to the termination of traffic on Mascom. In 2003, however, Mascom is significantly larger than BTC, at least in terms of subscribers.

89. Based on the data submitted by the operators as part of this process, I have confirmed a significant traffic imbalance between BTC and Mascom. The most recent data available to the Authority shows that BTC terminates 2.5 to 3.0 times as much traffic on the Mascom network than does Mascom terminate traffic on the BTC

network. Given market developments and the continuing traffic imbalance between BTC and Mascom, I am of the view that the application of mandatory volume discounts only for termination on the BTC network is no longer appropriate.

**90. Based on the analysis and discussion above, I direct that, starting on the effective date of this ruling, the mandatory volume discounts on the termination of Mascom-originated calls on the BTC network be discontinued.**

### **Transitional Arrangements**

91. The efficient benchmark termination charges I have determined for BTC and Mascom are significantly below the respective current termination charges.

92. In these circumstances, I consider that a transition period is necessary as a risk-mitigating measure. Further, I recognize that a transition period is appropriate to allow both BTC and Mascom to reasonably accommodate the efficient benchmark interconnection charges. I also consider that there is a trade-off between regulatory policy objectives and financial imperatives in determining the optimal time period for the operators to reach the efficient termination levels. The regulatory objectives require a short implementation timeframe while the financial imperatives suggest a longer implementation timeframe.

93. Based on the analysis and discussion above, I have decided on the applicable mandatory termination charges for BTC fixed termination and Mascom mobile termination. These termination charges are presented in the table below, which includes their implementation schedule. The termination charges in the table are in nominal (current) terms and should be treated as ceilings (i.e. the respective terminating operator may choose to set lower termination charges).

<b>BTC fixed termination charges and Mascom mobile termination charges</b>			
<b>Operator</b>	<b>Time-of-Day Period</b>	<b>Effective date of Ruling to 29 February 2004</b>	<b>From 1 March 2004</b>
<b>BTC</b>	<b>Peak</b>	15.0	11.0
	<b>Off-Peak</b>	12.0	8.8
<b>Mascom</b>	<b>Peak</b>	85.0	75.0
	<b>Off-Peak</b>	68.0	60.0

Note: Peak and off-peak hours shall have the same meaning as defined in the Agreement.

## **CONCLUSIONS**

94. Under the IUC termination approach, the originating operator has the right to set and collect the corresponding consumer tariff and the responsibility to pay a fixed termination charge to the terminating operator. With this in mind and taking into account the staged reductions in the underlying termination charges, I expect that the parties will pass on to the end consumers the benefits of the reduced termination charges in the form of lower consumer tariffs.

95. Before I conclude I wish to address specifically the prayer raised by BTC under which BTC is requesting that Mascom be ordered to pay interest at the rate of prime plus two percent on the losses amounting to thirty million Pula suffered as a result of the delay in effecting the proposed charges as purportedly agreed by Vista (Pty) Ltd. In my view, there is no merit in this prayer. The alleged delay on the part of Mascom was justified in the circumstances. Mascom was legitimately safeguarding its interests through proper negotiations, which were also done in good faith. Furthermore, Vista is not a party to the present proceedings let alone to the current Agreement between the parties herein. **There is no basis upon which Mascom may be ordered to pay costs, which may have been suffered by BTC in its dealings with a non-party. The said prayer is accordingly refused.**

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96. **This ruling shall remain valid and binding on both parties for a period of 24 months effective from the date of the ruling. In the event that the parties herein reach an agreement during the subsistence of this ruling, the Authority reserves the right to uphold and confirm such agreement in so far as the essence of such agreement does not substantially breach the fundamental framework or tenet as espoused by this ruling.**

97. This ruling takes effect from the date hereof. Any party aggrieved by this decision may appeal to the High Court in terms of section 56 of the Act.

Delivered at Gaborone on this **Twenty Sixth** day of February 2003.

C. M. Lekaukau  
**Executive Chairman**