

INTERCONNECTION AGREEMENT

between

TELKOM SA LIMITED

and

MOBILE TELEPHONE NETWORKS (PROPRIETARY) LIMITED

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INTERCONNECTION AGREEMENT

1. Parties

1.1 The Parties to this Agreement are -

1.1.1 Telkom SA Limited; and

1.1.2 Mobile Telephone Networks (Proprietary) Limited.

1.2 The Parties agree as set out below.

2. Interpretation

2.1 In this Agreement, unless inconsistent with or otherwise indicated by the context, the following words shall have the meanings ascribed to them below -

2.1.1	"Accounting Period"	a period of 1 calendar month, terminating as close as is practicable to 23h59 on the last Business Day of each calendar month, the first such Accounting Period commencing, unless otherwise agreed between the Parties in writing, on 1 April 1994;
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2.1.2	"Agreement"	the/this Agreement together with all appendices, annexures and schedules attached to it;
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2.1.3	"Base Station"	a base station radio as defined within the terms of the GSM recommendations;
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approved by the Postmaster General in response to such request;

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| 2.1.13 | "Community Service Call" | a Call originating on a Community Service Telephone; |
| 2.1.14 | "Community Service Telephone" | Terminal Equipment: |
| 2.1.14.1 | | which is registered as such by MTN in its own records; |
| 2.1.14.2 | | which is made available to the general public for the provision of the Service, and to this end is freely accessible; |
| 2.1.14.3 | | which is located in an Under-Served Area or in a Community Centre; and |
| 2.1.14.4 | | the use of which is provided at tariffs which include a community service telephone tariff in terms of the Licence; |
| 2.1.15 | "Confidential Information" | all information, know-how, ideas, concepts, technology, manufacturing processes, industrial, marketing and commercial knowledge of a confidential nature (whether intangible or in tangible form) relating to or developed in connection with or in support of the business of Telkom or MTN, as the case may be, including the terms and conditions of this Agreement and any matter concerned with or arising out of this Agreement, excluding information |

which is or comes into the public domain other than pursuant to a breach of this Agreement by a Party to this Agreement;

2.1.16	"Customer of MTN"	any person who -
2.1.16.1		has indicated a willingness in writing with MTN to receive the Service by means of the Licensed Lines on MTN's terms and conditions lodged in accordance with the Licence, or has either written or otherwise entered into and is not in breach of such a contract; or
2.1.16.2		is a customer of a Service Provider;
2.1.17	"Distribution Frame"	a distribution frame which provides terminations for transmission systems between the Telecommunications Networks;
2.1.18	"Effective Date"	the date specified in clause 24;
2.1.19	"Emergency Organisation"	in respect of any locality, the relevant governmental South African and traffic police, fire, ambulance and the National Sea Rescue Institute;
2.1.20	"ETSI"	the European Telecommunications Standards Institute;
2.1.21	"Fixed Link"	a Telecommunications Line connecting two points neither of which is Terminal Equipment;

2.1.22	"GSM"	Global System for Mobile Communications as defined in the ETSI structure of technical specifications from time to time and operating in the 900 MHz frequency band;
2.1.23	"Interconnect Fees"	the fees payable by the Parties to one another in terms of Part I of this Agreement;
2.1.24	"Interconnection"	the interconnection of the Telecommunications Networks as provided for in this Agreement;
2.1.25	"International Call"	a Call, excluding a TBVC Call, which originates from or terminates on a telecommunications system operated outside the Territory;
2.1.26	"ITU-T"	the Telecommunications Standardisation sector of the International Telecommunications Union;
2.1.27	"Leased Line"	a dedicated point-to-point circuit, complying with CCITT recommendations and leased by MTN for the purpose of conveying telecommunications traffic;
2.1.28	"Licence"	the National Cellular Telecommunications Licence granted by the Postmaster General to MTN on 30 September 1993 in terms of the Post Office Act to establish and operate the PLMN in the Territory and any renewal or amendment thereof;

2.1.29	"Licensed Line"	a Telecommunications Line or any part thereof which MTN is authorised to construct, maintain and use in terms of the Licence;
2.1.30	"Link Charge"	any amount payable by MTN to Telkom in terms of Part II of this Agreement in consideration for the use by MTN of a COFL;
2.1.31	"Manually Switched Call"	any Call which is established via Telkom's National Manual Service Centre or International Manual Service Centre, as the case may be, these terms being defined in 3.3 of Appendix 2;
2.1.32	"Message"	any sound, signal, sign or image sent, or to be sent, for conveyance by means of a Telecommunications Line;
2.1.33	"the MOU"	the memorandum of understanding between the Parties and Vodacom dated 10 December 1993 together with the addendum thereto dated 13 January 1994;
2.1.34	"MSC"	a mobile switching centre within the meaning of the GSM recommendations;
2.1.35	"MTN"	Mobile Telephone Networks (Proprietary) Limited, a private company incorporated in the Republic of South Africa with registration number 93/01436/07 and having its principal place of business at Pin Mill Farm, Katherine Street, Sandton;

2.1.36	"National Call"	a Call which originates from a telecommunications system located in the Territory and terminates on a telecommunications system located in the Territory;
2.1.37	"Number"	any alpha-numerical identifier of any customer, Terminal Equipment or component of the Service;
2.1.38	"the Parties"	each of the Parties to this Agreement;
2.1.39	"PLMN"	the public land mobile network to be established and operated by MTN in terms of the Licence;
2.1.40	"Point of Interconnection/ POI"	the PSTN Switch at which and by means of which Messages from the Telecommunications Network operated by either MTN or Telkom, as the case may be, are handed over and carried from the Telecommunications Network of MTN or Telkom, as the case may be, to the Telecommunications Network of the other of MTN or Telkom;
2.1.41	"the Postmaster General"	the Postmaster General of the Territory as defined in the Post Office Act;
2.1.42	"Post Office Act"	the Post Office Act, 44 of 1958, as amended;
2.1.43	"PSTN"	the public switched telephone network operated by Telkom now and in the future in the Territory;
2.1.44	"Rand or R"	the lawful currency of the Territory;

2.1.45	"the Service"	a service consisting of -
2.1.45.1		the provision of any Licensed Line; or
2.1.45.2		the conveyance of any Message by means of a Licensed Line or Leased Line; or
2.1.45.3		the provision of any directory, voice mail, GSM bearer, tele- and supplementary services, or <u>information service provided by those</u> means; or
2.1.45.4		the access to any Emergency Organisation by those means,
		together with any billing, data processing and other operation which is necessary to provide that Service by MTN, whether or not MTN charges a separate fee for it;
2.1.46		any person who is in the business of providing the Service to an end-user of such Service, and who has a contract with MTN for such purposes;
2.1.47	"Signing Date"	the date on which this Agreement is signed by the Party signing last in time;
2.1.48	"Switch"	a point in the PSTN or PLMN, as the case may be, at which Messages are switched from one Telecommunications Network to the other or capable of being switched;

2.1.49	"TBVC Calls"	Calls to and from the telecommunications systems operated, as at the Signing Date, in the TBVC States or any of them;
2.1.50	"TBVC States"	Transkei, Bophuthatswana, Venda and Ciskei, as constituted on the Signing Date;
2.1.51	"Telecommunications Network"	the PLMN or the PSTN, or both of them, as the context requires;
2.1.52	"Telecommunications Line"	bears the meaning ascribed to it in the Post Office Act;
2.1.53	"Telkom"	Telkom SA Limited, a public company duly incorporated in the Republic of South Africa with registration number 91/05476/06 and with its registered office at Telkom Towers North, 152 Proes Street, Pretoria;
2.1.54	"Terminal Equipment"	a GSM terminal, including a Community Service Telephone, connected via a GSM radio link, which may be used by an end-user to send and/or receive Messages which are to be or have been conveyed by means of the PLMN, all of which are duly licensed by the Postmaster General;
2.1.55	"Territory"	the geographical area of the Republic of South Africa, as constituted from time to time;

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| 2.1.56 | Third Party Line" | a Telecommunications Line not operated by Telkom, Vodacom or MTN; |
| 2.1.57 | "Underserviced Area" | a city, town, township, shanty town, location, village or human settlement or any part thereof as prescribed by the Postmaster General in writing from time to time in terms of the Licence; |
| 2.1.58 | "Vodacom" | Vodacom Group (Proprietary) Limited, a private company duly incorporated in the Republic of South Africa with registration number 93/03367/07 and with its registered office at Pier Place, Heerengracht Street, Foreshore, Cape Town; |
| 2.1.59 | "Year" | a period of 12 calendar months, the first such period commencing on the Commercial Date. |
- 2.2 If any definition contains a substantive provision conferring rights or imposing obligations on a Party, effect shall be given to it as if it were a substantive provision in the body of this Agreement, notwithstanding that it is only in the definition clause.
- 2.3 The clause headings in this Agreement have been inserted for convenience only and shall not be taken into account in its interpretation.
- 2.4 Words and expressions defined in any sub-clause shall, for the purposes of the clause of which that sub-clause forms part, bear the meaning assigned to such words and expressions in that sub-clause.
- 2.5 This Agreement shall be governed by and construed and interpreted in accordance with the laws of the Republic of South Africa.

- 2.6 In the event of a conflict between the provisions of the appendices comprising this Agreement and the main body of this Agreement, the provisions of the main body of this Agreement will prevail.

3. Introduction

- 3.1 MTN has been licensed to establish and operate the PLMN in the Territory.
- 3.2 Vodacom has been licensed to operate a public land mobile network in the Territory.
- 3.3 Telkom is the operator of the PSTN.
- 3.4 The Parties are required, in terms of the Licence, to use their best endeavours to enter into an agreement with one another, on or before the date specified in the Licence, for the purposes of ensuring that any Message originating on:
- 3.4.1 the PSTN may, if so required, be conveyed to its intended destination by means of a Licensed Line; and
- 3.4.2 the PLMN may, if so required, be conveyed to its intended destination by means of the PSTN.
- 3.5 The Parties wish to record the terms and conditions of their agreement in relation to the matters contemplated in 3.4 above and matters ancillary thereto.

PART 1: INTERCONNECTION OF THE TELECOMMUNICATIONS NETWORKS

4. Interconnection

- 4.1 MTN shall connect and keep connected its PLMN to the PSTN and Telkom shall connect and keep connected the PSTN to the PLMN in accordance with the provisions of this Agreement, so that Messages may be conveyed to and from each such Telecommunications Network.

- 4.2 Each Fixed Link between a Point of Interconnection and an MSC including the installation and maintenance of telecommunications apparatus up to but not including the Distribution Frame at each MTN Switch shall, subject to the provisions of 7, 8 and 9, be provided by Telkom; provided that all such Fixed Links shall, for the purposes of this Agreement, but subject to the proviso contained in 14.1, be deemed to form a part of and be comprised in the PLMN.
- 4.3 The Parties shall establish Interconnection to at least one Point of Interconnection for testing purposes at the place indicated as such in Appendix 1 by no later than the Signing Date.
- 4.4 The Parties shall each take whatever steps are necessary to establish Interconnection at the Points of Interconnection on the dates and at the places specified in Appendix 1.
- 4.5 Each of the Parties undertakes that the Points of Interconnection provided for in this clause 4 shall be operated and maintained by the Parties in accordance with the operation and maintenance procedures set out in Appendix 3.
- 4.6 Each Party warrants to the other that the fulfilment of such Party's obligations in terms of this clause 4 shall be in accordance with the technical standards, specifications and procedures more fully set out in Appendix 2.
- 4.7 Telkom shall, at no cost whatsoever to MTN, make such modifications or alterations to the PSTN, as may be necessary to procure the interconnection of the Telecommunications Networks in accordance with the provisions of this clause 4 by no later than 1 March 1994, subject to Telkom obtaining ministerial approval for the tariffs applicable to Calls originating on the PSTN and destined for the PLMN.
- 4.8 Telkom shall, at its own cost and expense, provide, maintain and be responsible in all respects, for whatever apparatus and equipment is necessary to ensure the conveyance of Calls between the PSTN and the

initial Points of Interconnection indicated in Appendix 1 and any future Points of Interconnection established pursuant to the provisions of 4.13.

- 4.9 MTN undertakes to Telkom that it shall, at its own cost and expense, provide, maintain and be responsible in all respects for whatever apparatus and equipment, excluding Leased Lines, is necessary to procure the conveyance of Calls between the PLMN and the initial Points of Interconnection indicated in Appendix 1 and any future Points of Interconnection established by the Parties, or either of them, pursuant to 4.13.
- 4.10 Each Party shall, by means of its own Telecommunications Network, convey Calls originating on its Telecommunications Network and destined for the other Party's Telecommunications Network to the Points of Interconnection specified in Appendix 1 and any additional Points of Interconnection established pursuant to the provisions of 4.13 and shall convey Calls originating on the other Party's Telecommunications Network and destined for its own Telecommunications Network from such Points of Interconnection to the telecommunications apparatus by means of which such Calls are to be received or to any other telecommunications equipment or facility which provides an automatic response if connection cannot be effected to such telecommunications apparatus. In addition, Telkom shall also convey on the PSTN to or from such Points of Interconnection, as the case may be:
- 4.10.1 Calls originating on the PLMN and destined for any Third Party Line;
or
- 4.10.2 Calls originating from any Third Party Line and destined for the PLMN;
or
- 4.10.3 Calls between the PLMN and any other public land mobile network if such Calls are routed to the PSTN by MTN or the operator of any such public land mobile network; provided that at least 10 days written notification shall be given by MTN to Telkom in respect of each additional Point of Interconnection established in accordance with the

provisions of 4.13, should MTN require such facility to be available at such additional Point of Interconnection.

- 4.11 Should either Party wish to change the configuration at a Point of Interconnection by changing the capacity available at such Point of Interconnection or terminating the use thereof, it shall give to the other Party notice in writing of such intention setting out in detail the proposals and reasons for the proposed change. Both Parties shall use their best endeavours to reach agreement in writing on the terms and conditions applicable to such change of capacity, or the augmentation of capacity at other existing Points of Interconnection, if required.
- 4.12 Upon receipt of a written order from MTN in accordance with the procedures set out in 8 and 9, Telkom shall provide, within the time periods and subject to the terms and conditions set out therein, additional capacity and circuits at the Points of Interconnection specified in Appendix 1 and any additional Points of Interconnection established pursuant to 4.13.
- 4.13 Should MTN wish to procure the establishment of Points of Interconnection in addition to those provided for in Appendix 1, MTN shall give Telkom at least 90 days notice in writing of its requirements in this regard, whereupon the Parties will promptly meet and use their best endeavours to reach agreement in writing on the terms and conditions upon which Telkom will provide such additional Points of Interconnection; provided that Telkom will be obliged, at its own cost and expense, to make whatever modifications and adjustments to the PSTN as may be necessary to procure the Interconnection of the Telecommunications Networks at any such additional Points of Interconnection.
- 4.14 Neither Party shall make nor permit to be made any alteration, adjustment or addition to:
 - 4.14.1 the Points of Interconnection specified in Appendix 1; or
 - 4.14.2 any additional Points of Interconnection established pursuant to 4.13; or

4.14.3 any element of its Telecommunications Network,

in such a way as adversely to affect or impair the operation of the Telecommunications Network of the other Party or so as to otherwise adversely affect or impair the conveyance of Messages pursuant to the Interconnection of their respective Telecommunications Networks. Without in any way limiting the generality of the foregoing provisions of this clause 4.14, each Party undertakes to take whatever steps are reasonably necessary to minimise service failures and congestion and signalling disturbances which would affect the ability of the other Party to convey Calls across its Telecommunications Network.

4.15 If the Interconnection between the Telecommunications Networks is interrupted for any reason whatsoever, the Party within whose Telecommunications Network such interruption arose shall at its own cost and expense, procure a restoration of Service as soon as is reasonably practicable, in accordance with the service levels specified in Appendix 1 and in accordance with the operation and maintenance procedures set out in Appendix 3.

4.16 Where a Party intends to modify its Telecommunications Network or any apparatus or equipment comprising such Telecommunications Network or any stored commands or protocol pertaining to such Telecommunications Network then, to the extent that such modification may reasonably be expected to have the effect of requiring the other Party:

4.16.1 to modify the Telecommunications Network operated by such other Party; or

4.16.2 to replace or cease to produce or supply any item of telecommunications equipment pertaining to Interconnection and produced or supplied by or to such other Party immediately prior to the intended modification,

the Party proposing such modification shall provide notice in writing to such other Party detailing the proposed modification. The Party proposing to modify its Telecommunications Network shall, on request of

the other Party, consult with such other Party and provide all reasonable co-operation and assistance to facilitate such modification.

4.17 If a Party reasonably believes the other Party to be in breach of any of its obligations in terms of this Clause 4, such Party shall be entitled to require the other Party, from time to time, upon at least 20 Business Days written notice to such other Party, to provide it with whatever information and material may reasonably be necessary to enable it to satisfy itself that such other Party is not in breach of any of its obligations in terms of this clause 4; provided that:

4.17.1 such process will not interfere with the conduct of such other Party's business or the provision of services to customers of such other Party; and

4.17.2 such notice shall specify the nature of the breach alleged.

4.18 Each Party shall pay, and shall be responsible for, all costs and expenses incurred by it in fulfilling its Interconnection obligations in terms of this clause 4.

5 Charges and payments

5.1 Introduction

5.1.1 In consideration for:

5.1.1.1 the Interconnection of their respective Telecommunications Networks; and

5.1.1.2 the conveyance of Calls on the PLMN destined for the PSTN; or

5.1.1.3 the conveyance on the PSTN of Calls destined for the PLMN; or

5.1.1.4 the conveyance on the PSTN of Calls from the PLMN destined for any Third Party Line; or

- 5.1.1.5 the conveyance on the PSTN of Calls from any Third Party Line destined for the PLMN; or
- 5.1.1.6 the conveyance on the PSTN of calls from the PLMN destined for a public land mobile network pursuant to 4. 10.3; or
- 5.1.1.7 the conveyance on the PSTN of Calls from a public land mobile network destined for the PLMN pursuant to 4. 10.3,

as the case may be, the Parties shall pay to one another the Interconnect Fees provided for in this Clause 5.

- 5.1.2 Interconnect Fees payable by the Parties to one another in respect of all Calls will be calculated in accordance with the provisions of this clause 5, on a per second basis, save for those Manually Switched Calls referred to in 5.2.4 for which Interconnect Fees will be calculated on a per minute basis.

- 5.1.3 The Parties agree that:

- 5.1.3.1 no Interconnect Fees shall be levied by any Party in respect of Calls made to:

- 5.1.3.1.1 an invalid, defective or non-existent Number; and

- 5.1.3.1.2 a called station which is already engaged;

- 5.1.3.2 the measuring of:

- 5.1.3.2.1 a Call's duration, excluding the duration of a Manually Switched Call, shall commence when the telecommunications equipment by which such Call is to be received or the telecommunications equipment or any other facility which provides an automatic response if connection cannot be effected to such telecommunications equipment, generates an answer signal across the relevant Point of Interconnection;

Where

- B = the applicable per minute interconnect rate for a particular rate group as specified in Part A of Appendix 6: and
- C = the maximum applicable public rate charged during such Accounting Period by Telkom to its customers for Calls made to the PLMN from within the Territory, for the rate group referred to in B, expressed as a rate per minute, less any discounts granted by Telkom to any such customers for a period in excess of 1 calendar month and which applied for at least 2 weeks during such Accounting Period; and
- W = is the total weighted average of all rates published by MTN for Calls made from the PLMN, (excluding Community Service Calls) during any particular rate group referred to in B in terms of the Licence during each Accounting Period, calculated as follows:
- (i) for each separate Tariff Plan operated by MTN, the weighted average rate charged by MTN per minute per Call for all distance bands operated by MTN will be calculated in respect of such Tariff Plan for each particular rate group as published by MTN; and
 - (ii) utilising the weighted average for each separate Tariff Plan as calculated in i), the weighted average rate (i.e W) charged by MTN per minute per Call for all Tariff Plans operated by MTN will be calculated for each particular rate group, as published by MTN.

For the purposes of this 5.2.3, "Tariff Plan" shall mean a set of tariffs applicable to a particular customer group, excluding Community Service Calls.

5.2.3 Telkom Weighted Average

- 5.2.3.1 In view of the fact that Telkom's tariffs are Ministerially approved with the effect that unbalanced tariffs are charged to cross subsidise residential low-calling rate customers, the Parties therefore agree that subject to the provisions of 5.2.3.6 below, and with effect from the Commercial Date, MTN undertakes to Telkom that its published rate lodged from time to time with the Postmaster General for any National Call/excluding a Community Service Call originating on the PLMN (where the destination of such Call is more than a radial distance of 400 km from the point of origin of the Call) will not, between the hours of 07h00 and 18h00 from Mondays to Fridays, be less than the weighted average of the published rates charged by Telkom per minute, in respect of Calls originating on the PSTN and terminating on the PSTN more than a radial distance of 400km from the point of origin of such Call. For the purposes of this clause 5.2.3, "point of origin" means the base station upon which a Call from the PLMN originates.
- 5.2.3.2 The weighted average referred to in 5.2.3.1 shall be calculated by using the rates published by Telkom, weighted as to the duration of the telecommunications traffic in all distance bands for radial distances over 400 kms for Calls which originate on the PSTN and terminate on the PSTN.
- 5.2.3.3 For the purposes of this clause 5.2.3, the initial weighted average of Telkom's published rate will be calculated by the Parties and Vodacom using:
- 5.2.3.3.1 the then currently applicable rates published by Telkom for the Calls referred to in 5.2.3.1; and
- 5.2.3.3.2 the average duration in minutes of such Calls made on the PSTN for the preceding 12 months, using Telkom's most recently available 12 month figures.
- 5.2.3.4 The weighted average used in 5.2.3.1 will only be recalculated once Telkom publishes rates which replace the published rates

used in 5.2.3.3 despite the fact that the duration of Calls referred to in 5.2.3.3.2 may change from time to time. As soon as Telkom issues new published rates, the Parties and Vodacom shall forthwith calculate the new weighted average utilising the new published rates and the most up to date 12 month average duration of Calls originating and terminating on the PSTN over radial distances of more than 400kms.

5.2.3.5 Should there be any dispute between the Parties and Vodacom as to the weighted average calculated in 5.2.3.2 and 5.2.3.3 above, such dispute shall be referred for determination to an independent statistician of at least 7 years standing (acting as an expert and not as an arbitrator) agreed to by the Parties and Vodacom or, failing agreement between the Parties and Vodacom within 7 days, by the President, at the time, of the South African Institute of Statisticians whose determination shall be final and binding on the Parties.

5.2.3.6 The whole of this clause 5 is subject to the suspensive condition that the Parties obtain a written exemption in terms of the Maintenance and Promotion of Competition Act, 96 of 1979 ("the Act") from the responsible Minister, via an application to this effect brought by the Postmaster General on behalf of the Parties, by no later than the Effective Date or such later date as may be agreed to between the Parties in writing, that the provisions of this Clause 5.2.3 do not infringe any provisions of the Act, or any ruling or regulation issued by the Competition Board in terms of that Act.

5.2.3.7 If at any time during the term of this Agreement the exemption (if any) granted by the Competition Board pursuant to the provisions of 5.2.3.6 above is revoked or ceases, for any reason whatsoever, to be of force and effect, the Parties undertake to meet with one another promptly with a view to amending the provisions of the whole of clause 5 in writing; on the basis that the Parties record that nothing contained in this clause 5.2.3.7 will be construed as precluding either Party from approaching the Postmaster General to make a determination concerning an

amendment to the provisions of the whole of this clause 5 upon the happening of the event contemplated in this clause 5.2.3.7.

5.2.4 National Manually Switched Calls originating on PSTN

In consideration for the conveyance on the PLMN of any National Call which is a Manually Switched Call originating on the PSTN, Telkom shall pay to MTN, for each rate group specified in Part A of Appendix 6 an amount calculated in accordance with the following formula:

$$Z = D \times E$$

Where:

Z = the amount in Rand to be paid to MTN by Telkom for such rate group in respect of a particular Accounting Period; and

D = the total duration in minutes of all Calls referred to in this clause 5.2.4 for such rate group in respect of such Accounting Period; and

E = has the meaning ascribed to it in the formula contained in 5.2.2.

5.2.5 Discounts

5.2.5.1 Telkom hereby grants to MTN the following discounts on the amounts payable by MTN to Telkom in respect of the National Calls referred to in 5.2. 1:

5.2.5.1.1 for National Calls (excluding Community Service Calls) a discount determined in accordance with part B of Appendix 6; and

5.2.5.1.2 for Community Service Calls, a discount of 25%.

- 5.2.5.2 The applicable discount rate contemplated in 5.2.5.1.1 shall be determined by reference to the total annual amount payable by MTN to Telkom in any 12 month period during the term of this Agreement in respect of all National, International, TBVC, and Community Service Calls, notwithstanding the fact that such discount is only granted by Telkom on the amounts payable by MTN in respect of the National Calls referred to in 5.2.1, ie. Calls which originate on the PLMN and are conveyed on the PSTN.
- 5.2.5.3 The amount of the discount to be granted to MTN by Telkom in terms of 5.2.5.1.1 shall be calculated by the Parties and granted by Telkom to MTN on the following basis -
- 5.2.5.3.1 in respect of the 6 month period immediately following the Commercial Date, MTN shall pay to Telkom the full amount provided for in 5.2.1, in consideration for conveyance of the Calls provided for therein, as if no discount were applicable; and
- 5.2.5.3.2 in respect of the 6 month period immediately following the period contemplated in 5.2.5.3.1 -
- 5.2.5.3.2.1 MTN shall, on or before the last Business Day of the period referred to in 5.2.5.3.1 furnish Telkom with a written estimate (which estimate shall be supported by the written report of an independent actuary) of the total amount in Rand which MTN expects to pay to Telkom in consideration for the conveyance by Telkom on the PSTN of National, International, TBVC and Community Service Calls during the 6 month period contemplated in 5.2.5.3.1 and the 6 month period referred to in this clause 5.2.5.3.2. It is recorded that the estimate referred to in this clause 5.2.5.3.2.1 is based on the total number of such seconds actually made in the period referred to in 5.2.5.3.1 and on the total number of such Seconds which MTN expects will be made in the period contemplated in this clause 5.2.5.3.2; and

- 5.2.6.1 the actuary referred to in 5.2.5.3.2.1 and 5.2.5.3.3 shall be an independent actuary nominated by Telkom in respect of whose identity MTN has consented; such consent not to be unreasonably withheld; *and*
- 5.2.6.2 MTN will bear the costs of acquiring the actuarial reports contemplated in 5.2.5.3.2.1 and 5.2.5.3.3.
- 5.2.7 The Parties agree that once MTN has reached the maximum discount rate referred to in Part B of Appendix 6, the written estimates referred to in 5.2.5.3.2.1 and 5.2.5.3.3 need not be supported by an actuarial report unless Telkom deems it necessary.

5.3 International Calls

5.3.1 International Calls originating on the PLMN

In consideration for the conveyance on the PSTN by Telkom of any International Call, including any Manually Switched Call which is an International Call, originating on the PLMN, MTN shall pay to Telkom, for each international destination and rate group, an amount calculated in accordance with the following formula:

$$W = \frac{F \times G}{60}$$

Where

W = the amount in Rand to be paid to Telkom by MTN for a particular international destination and rate group in respect of a particular Accounting Period; and

F = the total duration in seconds of all Calls referred to in this clause 5.3.1 and made to such international destination during such rate group in respect of such Accounting Period; and

G = the applicable per minute interconnect rate determined in accordance with the formula set out in Part C of Appendix 6.

5.3.2 International Calls destined for the PLMN

In consideration for the conveyance of any International Call destined for the PLMN, Telkom shall pay to MTN an amount calculated in accordance with the following formula:

$$V = \frac{H \times K}{60}$$

Where:

V = the amount in Rand to be paid to MTN by Telkom in a particular Accounting Period; and

H = the total duration in seconds of all Calls referred to in this clause 5.3.2 in respect of such Accounting Period; and

K = the applicable amount determined with reference to Part D of Appendix 6.

5.4 Other Services

5.4.1 No Interconnect Fees shall be levied by either Party against the other in respect of:

5.4.1.1 Calls made to Emergency Organisations which may be accessed by dialling the Number 112, the Number 107, the Number 10111 or the Number 10177; or

5.4.1.2 Calls routed to Emergency Organisations via centres nominated in writing by MTN to receive such Calls and agreed to in writing by Telkom, such agreement not to be unreasonably withheld, prior to the establishment of reporting centres (as contemplated in the National Emergency Telephone Service Act, 143 of 1993) which may be accessed by dialling the Number 107 or the Number 112; or

- 5.4.1.3 so called "Toll-Free 080 Calls", originating on the PLMN and destined for the PSTN.
- 5.4.2 For all purposes under this Agreement:
 - 5.4.2.1 Calls made by any Customer of MTN to Numbers beginning with the Number 081 or the Number 082 will be deemed to be National Calls;
 - 5.4.2.2 Collect Calls will be deemed to have originated from the called party; provided that nothing contained in this Agreement shall be construed as obliging either Party to offer a Collect Call facility to its customers; and provided further that no Party shall be entitled to levy any Interconnect Fees for a Collect Call which is not accepted by the called party; and
 - 5.4.2.3 nothing contained in this Agreement shall be construed as obliging either Party to offer a Manually Switched Call Service to its customers.
- 5.4.3 Within a maximum of 30 days of being requested to do so in writing by MTN at any time during the term of this Agreement, Telkom undertakes to provide MTN with on-line access to its directory information database solely to facilitate the provision by MTN to Customers of MTN of MTN's own national directory enquiry service, in which event:
 - 5.4.3.1 MTN shall pay to Telkom the prescribed public charges applicable to the establishment and use by MTN of a Telkom X.25 link; and
 - 5.4.3.2 MTN shall pay to Telkom an amount of R5 000 per calendar month during the period 1 April 1994 to 31 March 1995 and R10 000 per calendar month thereafter, for as long as MTN enjoys access to such database, subject to the review procedures contemplated in 26,

within 30 days of receipt or deemed receipt of a tax invoice from Telkom in the relevant amount; provided that MTN shall be entitled to charge Telkom an amount agreed to with Telkom, should Telkom wish to acquire on-line access to MTN's own directory database.

5.5 Payment and Calculation

5.5.1 Telkom shall, throughout the term of this Agreement, keep MTN informed in writing of any changes which it makes to its international and national tariffs to the extent that such changes are relevant to this Agreement.

5.5.2 All Interconnect Fees owing by one Party to the other in terms of this Agreement shall be paid in accordance with the provisions of clause 6.

5.5.3 For the sake of clarity:

5.5.3.1 Telkom shall not be entitled to receive any amount whatsoever from MTN in respect of any Calls not conveyed on the PSTN to or from the PLMN; and

5.5.3.2 MTN shall not be entitled to receive any amount whatsoever from Telkom in respect of Calls conveyed to the PLMN on the PSTN where such Calls originate on the telecommunications systems operated by Vodacom; and

5.5.3.3 any discounts granted by Telkom to its customers for a period of less than 4 weeks are excluded from the ambit of 5.5.1.

5.6 Review of Interconnect Fees

5.6.1 The rates payable by MTN to Telkom in terms of 5.2.1 for each National Call, including any Manually Switched Call, originating on the PLMN and conveyed on the PSTN and the amount payable by Telkom to MTN, pursuant to 5.2.2, in respect of National Calls originating on the PSTN and destined for the PLMN, shall be fixed for a period of 36 months with effect from the Signing Date; provided

that should the average annual increase in the Consumer Price Index, all items, as published by Central Statistical Services from time to time, for the 12 month period ending on the first anniversary of the Signing Date be in excess of 10% (ten per centum), the Parties undertake to meet with one another at mutually convenient times and venues and negotiate with one another in good faith with a view to renegotiating the charges payable by MTN to Telkom pursuant to 5.2.1 for National Calls originating on the PLMN and conveyed on the PSTN and the amount payable by Telkom, pursuant to 5.2.2, for National Calls originating on the PSTN and destined for the PLMN in respect of the Accounting Periods following the conclusion of such negotiations, on the basis that:

- 5.6.1.1 no retrospective adjustment of any amount payable or paid by MTN to Telkom in terms of 5.2.1 or payable or paid by Telkom to MTN pursuant to 5.2.2 will take place;
- 5.6.1.2 the rates provided for in 5.2.1 and/or 5.2.2, as the case may be, will remain unchanged pending any determination in this regard by the Postmaster General if the Parties fail, for whatever reason, within 90 days of the first anniversary of the Signing Date, to reach agreement in writing regarding the date upon which such changes will become effective, or the changes to such amounts or either of such amounts;
- 5.6.1.3 should the Consumer Price Index, all items, referred to in this clause 5.6 cease to be published, the Parties shall endeavour to agree on the substitution, in place of the Consumer Price Index, all items, of a substantially similar index. Should the Parties be unable to reach agreement, the matter shall be referred to an independent actuary of at least 15 years standing, on whose identity the Parties have agreed or, in the absence of such agreement within 10 Business Days of a written request from either Party to agree on the identity of an independent actuary, by an actuary appointed by the President for the time being of the Actuarial Society of South Africa and such actuary's determination, acting as an expert and not as an arbitrator, of:

5.6.1.3.1 what index should be substituted for the Consumer Price Index, all items, for such period will be final and binding on the Parties; or

5.6.1.3.2 what the Consumer Price Index, all items, would have been if, in the opinion of such actuary, no other available index is substantially similar to the Consumer Price Index, all items; and

the cost of such actuary will be shared equally between the Parties.

5.6.2 The formula used in Part C of Appendix 6 to determine the amount per minute payable by MTN to Telkom pursuant to 5.3.1 for International Calls originating on the PLMN will remain fixed for a period of 36 months as of the Signing Date.

5.6.3 The amount per minute quoted in Part D of Appendix 6 and payable by Telkom to MTN, pursuant to 5.3.2, for International Calls destined for the PLMN and conveyed on the PSTN, will remain fixed for a period of 36 months as of the Signing Date.

5.6.4 Changes to the rates payable by MTN to Telkom in respect of Community Service Calls, shall be subject to a separate negotiation process and subject to the ability of the Parties to reach agreement in this regard in writing, failing which such rates will remain unchanged.

5.6.5 The Parties agree to negotiate with one another, in good faith, with a view to finalising a joint community services strategy as soon as reasonably practicable after the Effective Date, on the basis that Interconnect Fees payable by Telkom in consideration for Calls conveyed from the PSTN to Community Service Telephones will also be negotiated as an integral part of such strategy.

6. Billing procedures

6.1 MTN undertakes to measure and record the duration of Calls originating

- 6.7.1 within 2 Business Days of receipt or deemed receipt of such notice, the invoicing Party undertakes to furnish such other Party with whatever documents and material may reasonably be required by such other Party to verify the amount reflected as being payable by it in the relevant tax invoice; and
- 6.7.2 the Parties will then promptly meet and consult with one another in order to try to resolve the dispute. Failing resolution of the dispute within 7 Business Days following receipt or deemed receipt of the notice referred to in this clause 6.7, the dispute may be referred by the Party disputing such tax invoice for investigation and determination by a firm of auditors agreed to between the Parties or, failing agreement, by a firm of auditors nominated by the President, for the time being, of the South African Institute of Chartered Accountants. Such auditors will, in their determination of the dispute act as experts and not as arbitrators and their decision, shall be final and binding on the Parties. The Parties shall co-operate in any such investigation and any sum found to be due or overpaid shall promptly be paid or refunded (together with any interest payable or paid as the case may be, pursuant to 6.6), within 30 days of the date of such determination. The independent auditor's costs shall be paid by the Party disputing the tax invoice in question unless such tax invoice is established to have been incorrect in which case the invoicing Party shall pay such costs.
- 6.8 Notwithstanding the provisions of 6.7:
- 6.8.1 if an amount in dispute represents less than 5% of the total amount (excluding VAT) of the tax invoice in question, the invoiced amount shall nonetheless be deemed to be payable in full by the invoiced Party;
- 6.8.2 if the amount in dispute represents 5% or more of the total amount (excluding VAT) of the tax invoice in question, such amount shall be deemed not to be payable pending determination by the auditors pursuant to 6.7.

PART II: FIXED LINKS

7. Exclusivity

- 7.1 Telkom shall have the right to provide MTN with all Fixed Links required by MTN to construct, maintain and use its PLMN and to interconnect its PLMN with the PSTN in accordance with this Part II of the Agreement, unless Telkom is unwilling or unable to do so.
- 7.2 Where Telkom does provide Fixed Links to MTN pursuant to this Part II of the Agreement, then the Link Charges payable by MTN to Telkom in respect thereof will be as provided for in 10 and such Fixed Links shall then be referred to as COFLs.

8. Quotation procedure

- 8.1 Any request for a Fixed link by MTN shall be made in writing to Telkom at an address or telefax number and directed to the person nominated in writing by Telkom from time to time during the term of this Agreement and shall contain at least the following information:
- 8.1.1 the number of Fixed Links required;
 - 8.1.2 the detailed physical addresses of the points between which each Fixed Link is required; such addresses to include the street and stand numbers and longitude and latitude co-ordinates of such points;
 - 8.1.3 the dates on which the Fixed Links are required;
 - 8.1.4 the required capacity of such Fixed Links.
- 8.2 Each request contemplated in 8.1 shall be signed by a duly authorised signatory of MTN and shall reflect the date on which it is submitted to Telkom and shall either be hand delivered or telefaxed to the person nominated by Telkom in terms of 8.1.

- 8.4.2 if it is willing and able to do so, the date by which Telkom will, subject to the proviso contained in 9.1, be able to provide such Fixed Links; and
- 8.4.3 the Link Charges which Telkom is entitled to levy against MTN in respect of the Fixed Links requested by MTN which Link Charges are set out in Appendix 7.
- 8.5 Telkom's response to MTN in terms of 8.3 shall be deemed to constitute a separate offer by Telkom to provide the Fixed Links requested by MTN on the terms and conditions contained in such response and shall be open for acceptance, in writing, by MTN within 10 Business Days of receipt or deemed receipt by MTN of such response on the basis that each offer which is accepted by MTN shall constitute a separate agreement between Telkom and MTN for the provision of such Fixed Links which agreement will then be referred to as "an\the order" for the purposes of this Agreement.
- 8.6 Should Telkom fail, for any reason whatsoever, to respond as required in terms of this clause 8, MTN shall be entitled to suspend its request to Telkom for such Fixed Links and to apply to the Postmaster General for permission to procure them otherwise than from Telkom in accordance with the provisions of 9.5.
9. Installation times
- 9.1 Telkom shall provide Fixed Links ordered by MTN pursuant to 8 above on or before the dates specified by MTN in 8.1.3 ("the required dates"): provided that MTN's order for such Fixed Links is placed at least 90 days prior to the required dates.
- 9.2 Subject to the proviso contained in 9.1, should Telkom fail to provide any Fixed Links on or before the required dates, it shall grant a discount to MTN, which discount will, where Telkom is:
- 9.2.1 between 1 and 30 days late, be 25%;

9.2.2 between 31 and 60 days late, be 50%;

9.2.3 more than 60 days late, be 75%,

of the total annual rental payable by MTN in respect of the Fixed Link in question for the relevant year, which amount will be determined with reference to Appendix 7.

9.3 Should Telkom be unable to provide a particular Fixed link of the capacity and/or within the time required by MTN in terms of 8.1, it shall specify in its response referred to in 8.3, the capacity of Fixed Link which it will in fact be able to provide and/or the date on which it will be able to provide a Fixed Link of the required capacity.

9.4 Notwithstanding 9.2, should Telkom fail to provide any Fixed Links ordered by MTN before the required date(s), or should Telkom indicate in its response referred to in 8.3 that it is unwilling or unable to provide any such Fixed Links within the time required by MTN pursuant to 8.1.3, MTN shall be entitled to suspend its order or request, as the case may be, to Telkom for the provision of such Fixed Links and to apply to the Postmaster General for permission to procure them otherwise than from Telkom.

9.5 MTN records its understanding that the Postmaster General may act on the basis set out in this clause 9.5 where it is alleged by MTN that Telkom has failed to respond in terms of 8.3 or that Telkom's inability to provide any Fixed Link of the required capacity is unreasonable, or that Telkom has failed or is unable to provide any Fixed Links on or before the required dates:

9.5.1 MTN will lodge a written complaint with the Postmaster General setting out fully the grounds for its complaint and the facts upon which such complaint is based, together with copies of its written request and Telkom's written response (if any);

- 9.5.2 MTN will simultaneously furnish a copy of such written complaint to Telkom at the office of the person nominated by Telkom in terms of 8.1, together with all supporting documents in its possession;
- 9.5.3 within 5 Business Days of the receipt or deemed receipt of the written complaint, Telkom will have the opportunity to state its case in writing to the Postmaster General and undertakes to furnish a copy thereof to MTN;
- 9.5.4 the Postmaster General will be entitled to request and the Parties undertake to furnish such further information as he may require;
- 9.5.5 the Postmaster General will duly consider the reasonableness of the complaint and Telkom's explanation thereof and, having done so, will have the authority to -
 - 9.5.5.1 dismiss the complaint; or
 - 9.5.5.2 authorise MTN to procure, construct, maintain and use its own Fixed Links; or
 - 9.5.5.3 make such other directions as he may by statute be entitled to make to ensure that the Fixed Links required by MTN are obtained by MTN.
- 9.6 Telkom and MTN agree that the Postmaster General's decision shall be final and binding on them.

10. Prices and pricing structure

- 10.1 In consideration for the provision, in accordance with the terms of this Part II of this Agreement, of any COFLs by Telkom to MTN, MTN shall, subject to the remaining provisions of this Clause 10, pay to Telkom Link Charges per COFL in the amounts set out in Appendix 7.
- 10.2 Notwithstanding the provisions of 9.2, Telkom hereby grants to MTN discounts on all Link Charges referred to in 10.1 in the proportions set out

in Appendix 7. Such discounts are based on the amounts payable by MTN to Telkom for the Link Charges set out in Appendix 7.

- 10.3 Notwithstanding anything to the contrary contained in this Agreement, all charges payable in terms of this clause 10 (less any applicable discounts) in consideration for the provision by Telkom of the COFLs contemplated in 4.2, which COFLs are configured as:
 - 10.3.1 both way COFLs, shall be split between Telkom and MTN respectively on a 25:75 basis on the basis that the 25:75 split provided for in this clause 10.3.1 is based on an assumption that 25% of all telecommunications traffic (measured in minutes) between the PSTN and the PLMN will flow from the PSTN to the PLMN and 75% of all such traffic will flow from the PLMN to the PSTN. Accordingly, if the volume of telecommunications traffic actually flowing between the PSTN and the PLMN differs from such estimate in the positive or the negative by more than 5% in any Year during the term of this Agreement, the Parties undertake to meet with one another and negotiate with one another in good faith with a view to varying in writing the ratio according to which such charges are to be split between them; and
 - 10.3.2 outgoing COFLs from an MSC to a Telkom Switch, shall be for the account of MTN;
 - 10.3.3 outgoing COFLs from the Telkom Switch to an MSC, shall be for the account of Telkom.
- 10.4 Telkom shall provide MTN with tax invoices (after having deducted any relevant discounts provided for in this Agreement) in respect of all Link Charges due by MTN to Telkom for COFLs on the following basis -
 - 10.4.1 for any installation charge as set out in Appendix 7, monthly in arrears within 10 Business Days of the end of the Accounting Period to which such invoice relates; and

- 10.4.2 for any other charges as set out in Appendix 7, monthly in advance, on or before the 10th Business Day of the Accounting Period to which such invoice relates.
- 10.5 All amounts reflected in the tax invoices from Telkom to MTN for Link Charges in respect of COFLs procured from Telkom shall be payable by MTN within 30 days of receipt or deemed receipt of a tax invoice in the relevant amount by MTN.
- 10.6 The provisions of 6.6, 6.7, 6.8, 6.9, 6.10 and 6.11 shall apply, *mutatis mutandis*, to the payment of and in relation to Link Charges.
11. Cancellation of orders prior to the provision of service and duration of Fixed Links
- 11.1 Notwithstanding anything to the contrary contained in this Agreement, MTN shall be entitled to cancel an order prior to the actual provision of a particular Fixed Link by Telkom. Any such cancellation shall be by way of notice sent in writing by MTN to the person referred to in 8.1, and shall be effective on receipt or deemed receipt of such notice.
- 11.2 Upon such cancellation, Telkom shall be entitled to charge MTN such costs and expenses as have been reasonably, necessarily and actually incurred by Telkom up to the date of receipt of such notice of cancellation.
- 11.3 Save for the provisions of 11.2, MTN shall have no other liability to Telkom whatsoever for the cancellation of any such order.
- 11.4 Notwithstanding anything else contained in this Agreement, if MTN procures a COFL from Telkom as a temporary service and pays the applicable temporary service rate as set out in Appendix 7 and if such COFL is not transferred or moved from its original location to any other location for a period of 12 months from the date on which it is procured, the service rendered by Telkom in relation to such COFL shall, for the purposes of Appendix 7, be deemed to be a permanent service and Telkom shall refund to MTN, any amounts paid by MTN to Telkom in relation to such COFL under the heading in Appendix 7 of temporary

services, ie Telkom shall refund all amounts paid by MTN which are in excess of the amounts that would have been payable by MTN under the heading of permanent services in Appendix 7 in respect of such COFL

- 11.5 The Parties shall negotiate with one another in good faith with a view to reaching agreement between them in writing as soon as reasonably practicable after the Signing Date on:
 - 11.5.1 the amounts to be paid by MTN to Telkom in consideration for the transfer and relocation by Telkom, at MTN's instance and request, of COFLs; and
 - 11.5.2 possible discounts to be granted to MTN by Telkom in respect of any extended contract period for COFLs.
- 11.6 The Parties undertake to use their best endeavours to enter into separate service level agreements in writing relating to MTN's use of COFLs as soon as reasonably practicable after the Effective Date.

Part III: General

12. Protection of the PSTN

- 12.1 MTN undertakes not to do or permit to be done or omit or permit the omission of anything in relation to its PLMN which may reasonably be expected to:
 - 12.1.1 cause any damage to the PSTN; or
 - 12.1.2 materially interfere, in any way whatsoever, with the proper and normal operation of the PSTN.
- 12.2 MTN will, as soon as is reasonably practicable after receipt or deemed receipt of a written request to this effect from Telkom, provide Telkom with whatever information and assistance is reasonably necessary to enable Telkom to satisfy itself as to MTN's compliance with its obligations in terms of 12.1; provided that Telkom shall, in the exercise of its rights in

terms of this clause 12.2, act reasonably, and provided further that Telkom will not, in the exercise of such rights, do anything which may inhibit or interfere with the proper and normal operation by MTN of its PLMN or with the provision of its services to its Customers.

13. Protection of the PLMN

13.1 Telkom undertakes not to do or permit to be done or omit or permit the omission of anything in relation to its PSTN which may reasonably be expected to:

13.1.1 cause any damage to the PLMN; or

13.1.2 materially interfere, in any way whatsoever, with the proper and normal operation of the PLMN.

13.2 Telkom will, as soon as is reasonably practicable after receipt or deemed receipt of a written request to this effect from MTN, provide MTN with whatever information and assistance is reasonably necessary to enable MTN to satisfy itself as to Telkom's compliance with its obligations in terms of 13.1; provided that MTN shall in the exercise of its rights in terms of this clause 13.2 act reasonably, and provided further that MTN will not, in the exercise of such rights, do anything which may inhibit or interfere with the proper and normal operation by Telkom of the PSTN or with the provision of its services to its customers.

14. Safety

14.1 Telkom and MTN shall each, at their own cost and expense, take whatever steps are necessary to procure that the fulfilment of their respective obligations and exercise of their respective rights in terms of this Agreement will not endanger the health and safety of any party including, without limitation, one another's employees, agents, directors, sub-contractors and customers, and in this respect each Party shall be responsible for the safe operation of the equipment comprising such Party's Telecommunications Network on its side of any Point of Interconnection; provided that Telkom shall, notwithstanding anything to

the contrary contained in this Agreement, be and remain responsible throughout the term of this Agreement for the safe operation of all COFLs comprised in the PLMN.

14.2 Telkom indemnifies MTN, all of MTN's subsidiaries and any directors or employees of MTN or any of MTN's subsidiaries against any loss or harm whatsoever caused by Telkom, its directors, employees and/or subcontractors, to MTN, its directors, employees or agents, and any third party, pursuant to the fulfilment of Telkom's obligations to MTN in terms of clause 14.1.

14.3 MTN indemnifies Telkom, all of Telkom's subsidiaries and any directors or employees of any of Telkom's subsidiaries, against any loss or harm whatsoever caused by MTN, its directors, employees and/or subcontractors, to Telkom, its directors, employees or agents, and any third party, pursuant to the fulfilment of MTN's obligations to Telkom in terms of clause 14.1.

15. Fault Reporting and Resolution

Telkom shall provide to MTN and MTN shall provide to Telkom the operations and maintenance services set out more fully in Appendices 3 and 5 for the purpose of enabling Telkom or MTN, as the case may be, to report any fault in, breakdown of or problem in respect of the Telecommunications Network operated by MTN or Telkom (as the case may be); provided that such fault, breakdown or problem pertains to the Interconnection or a COFL, as soon as such fault, breakdown or problem occurs and Telkom and MTN shall, on receipt or deemed receipt of any such report, each follow the fault report procedures set out in Appendices 3 and 5.

16. Testing

The Parties undertake to co-operate fully with one another in the development of mutually acceptable procedures for the testing and clearance of faults occurring between their respective Telecommunications Networks or otherwise affecting the Interconnection of their respective Telecommunications Networks, the present procedures being set out in Appendices 3 and 5.

17. Numbering arrangements

Telkom shall allocate the access code 083 to MTN; provided that the allocation of Numbers by MTN to its Customers within the allocated access blocks is totally under MTN's discretion and control.

18. Miscellaneous

18.1 The Parties undertake to use their best endeavours to reach agreement between them in writing, as soon as reasonably practicable after the Effective Date, on the question of:

18.1.1 roaming by Customers of MTN on telecommunications systems operated and located outside the Territory; and

18.1.2 roaming on the PLMN by customers of operators of telecommunications systems located outside the Territory.

18.2 If either Party wishes to introduce a new service to which any customer of the other Party may enjoy access through Interconnection, it will notify such other Party in writing of its intention to do so, and will, in such notice, outline information on all technical, numbering, routing, timing, billing, Interconnection and commercial issues relevant to such new service. If such other Party wishes to acquire access to the new service, the Parties will prompt meet and use their best endeavours to reach agreement on terms and conditions governing such other Party's access to the new service.

18.3 For the purposes of 18.2 above, "new service" in relation to either Party excludes any telecommunications service contemplated in 2.1.45 or in this Agreement or available to the customers of such Party through or by means of such Party's Telecommunications Network, at the Signing Date.

18.4 If a Party wishes the other Party to bar access by the first mentioned Party's customers to any telecommunications service offered by the other Party at any time during the term of this Agreement, the Parties undertake

to meet promptly with a view to reaching agreement in writing on whether or not such customers should be barred access to such service.

19. Intellectual property rights

19.1 Nothing contained in this Agreement shall be construed to confer or be deemed to confer on either Party any rights or licences in the intellectual property of the other Party.

19.2 For the purposes of this clause 19 "Intellectual Property" means whatever trademarks, (whether registered or not) inventions, patents (both registered and unregistered), copyrights, registered and unregistered designs, know-how and other intellectual property vesting in a Party by the operation of law.

20. Operational liaison

20.1 The Parties shall consult together regarding the operation and implementation of this Agreement and shall use their best endeavours to resolve any problems arising from such consultation or otherwise encountered in relation to this Agreement.

20.2 Without prejudice to the provisions of clause 20.1, the Parties shall each, within 30 days of the Signing Date appoint a representative and notify the other Party in writing of the identity of such appointee. Such representative shall, together with the representative of the other Party, be responsible for overseeing the day-to-day practical implementation of this Agreement including, without limitation, the following matters:

- 20.2.1.1 numbering;
- 20.2.1.2 physical and electrical interface(s);
- 20.2.1.3 provisioning (including commissioning);
- 20.2.1.4 transmission;
- 20.2.1.5 synchronisation;
- 20.2.1.6 signalling;
- 20.2.1.7 maintenance;
- 20.2.1.8 call accounting;

- 20.2.1.9 augmentation of capacity;
- 20.2.1.10 prevention of fraud;
- 20.2.1.11 malicious call tracing;
- 20.2.1.12 new or modified features and services including timescales for implementation; and
- 20.2.1.13 any other technical and operational matters which may arise from time to time.

20.3 Each of the representatives contemplated in 20.2 shall liaise with the other and report to the Party appointing him on any problem which has not proved capable of resolution. On receipt of such report, the Parties shall consult forthwith with one another with a view to achieving a mutually acceptable solution to such problem.

20.4 Unless otherwise provided for in this Agreement, each Party shall give the other at least 7 days notice in writing of any change which it intends to make in respect of the identity of the person charged with operational liaison on its behalf.

21. Force majeure

21.1 No Party to this Agreement shall be liable for any failure to fulfil its obligations hereunder where such failure is caused by circumstances outside the reasonable control of such Party, including, without limitation, any Act of God, insurrection or civil disorder, war or military operations, national or local emergency, acts or omissions of Government, labour disputes of any kind (whether or not involving the Party's employees), fire, lightning, explosion or any other such cause, (each an "event of force majeure").

21.2 The Party affected by the event of force majeure shall promptly notify the other Party in writing of the estimated extent and duration of such inability to perform its obligations.

21.3 Upon cessation of circumstances leading to the event of force majeure, the Party affected by such event of force majeure shall promptly notify the other of such cessation.

- 22.1.1 damage to or loss of any equipment, facility or other property of the Innocent Party caused by the intentional or negligent act or omission of the Indemnifying Party or its employees, sub-contractors, directors or agents arising out of or in connection with this Agreement; and
- 22.1.2 any action, claim, suit or demand by any person against the Innocent Party in respect of or arising out of any act or omission of the Indemnifying Party in the course of providing services to the Innocent Party.
- 22.2 If any action, claim, suit or demand ("claim") is made by any person against the Innocent Party which, if satisfied or paid by the Innocent Party, would result in any liability of the Indemnifying Party pursuant to the provisions of 22.1 -
 - 22.2.1 the Innocent Party shall give written notice of the claim to the Indemnifying Party as soon as practical after becoming aware thereof; and
 - 22.2.2 within 30 days after receipt or deemed receipt of that notice, the Indemnifying Party shall
 - 22.2.2.1 cause the Innocent Party to be put in sufficient funds to satisfy or pay the claim; or
 - 22.2.2.2 give notice to the Innocent Party directing it to take such action (including legal proceedings) in respect of the claim, at the Indemnifying Party's own cost and expense, as the Indemnifying Party may indicate,

failing which the Innocent Party shall be entitled to deal with the claim as it in its sole discretion deems fit.

- 22.2.3 the Indemnifying Party shall cause the Innocent Party to be put and therefore maintained, in sufficient funds in sufficient time to pay all reasonable costs and expenses of any action or settlement directed by the Indemnifying Party in terms of 22.2.2.2 and 22.2.4; and

22.2.4 the Innocent Party shall take such action as the Indemnifying Party directs, to avoid, dispute, defend, appeal, settle or compromise ("deal with") the claim and any adjudications thereof; provided that, failing such directions, the Innocent Party shall be entitled to deal with the claim as it sees fit in its sole discretion.

22.3 No Party shall be obliged to indemnify the other Party according to the provisions of this clause 22 to the extent that the loss, liability, cost, charge or expense suffered or sustained by such other Party is the direct result of any breach, act or omission by such other Party of any of its obligations in terms of this Agreement.

23. Equality

23.1 A Call originating on the PLMN, when passed across a Point of Interconnection, shall be treated by Telkom no less favourably than a similar Call originating and conveyed on the PSTN.

23.2 A Call originating on the PSTN, when passed across a Point of Interconnection, shall be treated by MTN no less favourably than a similar Call originating and conveyed on the PLMN.

24. Commencement

24.1 The Parties acknowledge that this Agreement shall be of no force and effect, and no modification of any terms or conditions of this Agreement shall be of any force and effect until:

24.1.1 Telkom and MTN have furnished, in writing, full particulars of all of the terms and conditions of this Agreement or any modification to this Agreement together with a sufficient explanation of the purpose and effect of this Agreement or any such modification to the Postmaster General and to Vodacom; and

24.1.2 either -

- 24.1.2.1 the Postmaster General has within 28 days of receiving the notification referred to in 24.1.1, confirmed in writing to both Telkom and MTN, that this Agreement should enter into force; or
- 24.1.2.2 the Postmaster General has within the period of 28 days referred to in 24.1.2.1 from receipt by it of the information referred to in 24.1.1, determined by notice in writing delivered to both Telkom and MTN that this Agreement or the proposed modification should enter into force and effect but subject to such modifications as are specified in such notice,

("the Effective Date").

- 24.2 if the Postmaster General furnishes MTN and Telkom by notice in writing that he does not agree that this Agreement should enter into force, this Agreement shall be of no force or effect and neither Party shall have any obligation at all to the other Party in terms of this Agreement.

25. Termination, duration and breach

- 25.1 This Agreement shall, subject to the remaining provisions of this clause 25, endure throughout the term of the Licence and shall accordingly terminate, if the Licence is terminated for any reason whatsoever, forthwith upon such termination.
- 25.2 If a Party to this Agreement:
 - 25.2.1 fails to pay any amount due by it in terms of this Agreement by the due date, and fails to remedy such breach within 21 days of written notice to do so; or
 - 25.2.2 commits a material breach of any other provision of this Agreement and fails to remedy such breach within 90 days of written notice to do so; provided that if the breach can reasonably be remedied within a shorter period, the Party giving the notice must specify that shorter period in the notice and the Party in default shall remedy the breach within such shorter period;

- 25.2.3 takes steps to place itself, or is placed in liquidation, whether voluntary or compulsory, or under judicial management, in either case whether provisionally or finally;
- 25.2.4 take steps to deregister itself or is deregistered;
- 25.2.5 commits an act which would be an act of insolvency as defined in the Insolvency Act, 1936 if committed by a natural person;
- 25.2.6 fails to satisfy a judgment against that Party within 21 days after that Party becomes aware of the judgment, except if that Party provides evidence on an ongoing basis to the reasonable satisfaction of the other Party that steps have been initiated within the 21 days to appeal, review or rescind the judgment and to procure suspension of execution of that judgment and that such steps are being expeditiously pursued, the period of 21 days shall run from the date on which the judgment becomes final, or the date on which the attempts to procure the suspension of the execution fail,

such Party shall be in default.

- 25.3 If a Party is in default, the aggrieved Party shall be entitled, in addition to all other remedies to which it may be entitled at law, or in terms of this Agreement to cancel this Agreement.
- 25.4 Upon the termination for any reason whatsoever of this Agreement all amounts then owing by one Party to the other Party will become immediately due and payable.

26. Periodic Review

- 26.1 Notwithstanding anything to the contrary contained in this Agreement:
 - 26.1.1 the Parties undertake to meet and review all aspects contemplated in this Agreement by no later than 30 days after each anniversary of the Signing Date throughout the term of this Agreement;

- 25.1.2 the Parties undertake to meet and review:
- 26.1.2.1 the implementation of 5.6. 1; and
- 26.1.2.2 further Consumer Price Index based review procedures in relation to the rates payable by the Parties to one another in terms of 5.2.1 and 5.2.2 during the remainder of the 36 month period contemplated in 5.6. 1,
- within 30 days after the first anniversary of the Signing Date;
- 26.1.3 either Party may, at any time, and from time to time, seek to vary any terms of this Agreement in accordance with the provisions of 26.2.
- 26.2 The Party seeking to vary any of the terms of this Agreement under clause 26.1.3 shall serve a notice to the other Party and, where necessary, the Postmaster General, and such notice shall set out in reasonable detail the variations sought by it. Forthwith upon receipt of such notice, the Parties shall meet and negotiate, in good faith with each other with a view to agreeing on a variation of such of the terms of this Agreement as are referred to in the notice.
- 26.3 The Parties agree that, notwithstanding the provisions of this clause 26, all of the terms and conditions of this Agreement shall remain in full force and effect during any review of its terms unless and until such time as :
- 26.3.1 the Parties complete a written agreement replacing or amending this Agreement; and
- 26.3.2 the Parties have obtained whatever consents and authorities may be required by them to effect such replacement or amendment.
- 26.4 The Parties shall constitute an interconnection review committee comprised of representatives from both Parties and Vodacom. This interconnection review committee shall:

- 26.4.1 consider the principle of "cost based tariffing" for Interconnect Fees;
and
- 26.4.2 consider any other matter related to the Interconnection of the Telecommunications Networks that it may deem appropriate; and
- 26.4.3 report directly to the Parties during the course of any review proceedings conducted by the Parties at any time in accordance with the provisions of this clause 26.
- 26.5 The Postmaster General shall be invited to attend all meetings of the interconnection review committee as an observer only.
- 26.6 The interconnection review committee shall meet within 1 month of the Effective Date and shall thereafter meet quarterly or more often as the Parties may determine in writing from time to time.
- 26.7 The interconnection review committee shall be chaired by an independent chairman, agreed by both Parties and Vodacom. Should the Parties and Vodacom not be able to agree on the identity of an independent chairman, the interconnection review committee shall be under the rotating chairmanship of the Parties and Vodacom, the first chairman to be nominated by Vodacom, the second chairman to be nominated by Telkom- and the third by MTN and so on for each successive meeting of the interconnection review committee.
- 26.8 Notwithstanding anything else to the contrary contained in this Agreement, if:
 - 26.8.1 MTN is licensed after the Effective Date to establish and/or to operate another public land mobile network substantially similar in all material respects to the PLMN in the Territory; or
 - 26.8.2 the Licence is materially amended to allow the establishment and operation by MTN of a telecommunications system, other than the PLMN,

the Parties shall forthwith enter into negotiations with one another with a view to reaching agreement in writing on the interconnection of the PSTN with such other public land mobile network or with such other telecommunications system; provided that neither Party shall be entitled to terminate this Agreement as a result of the happening of either of the events contemplated in 26. 8. 1 or 26. 8. 2, it being recorded that this Agreement shall nonetheless continue to regulate the matters contemplated in this Agreement.

27. Co-operation

The Parties shall co-operate and consult with each other in good faith regarding the implementation of this Agreement, with a view to achieving the aims and objectives of this Agreement.

28. Severability

If any term, condition, agreement, requirement or provision contained in this Agreement is held by any court having jurisdiction to be unenforceable, illegal, void or contrary to public policy, such term, condition, agreement, requirement or provision shall be of no effect whatsoever upon the binding force or effectiveness of any of the remainder of this Agreement, it being the intention and declaration of the Parties that had they or either of them known of such unenforceability, illegality, invalidity or that the provision was contrary to public policy, they would have entered into a contract, containing all the other terms and conditions set out in this Agreement.

29. Cession

No Party shall cede, assign, transfer, encumber or delegate any of its rights or obligations in terms of this Agreement without the prior written consent of the other Party and such other consents as may be necessary.

30. Dispute resolution

30.1 Should any dispute arise between the Parties in connection with

remaining provisions of this clause relating to arbitration; provided that if the Parties fail to reach agreement in writing to refer the dispute to arbitration within a period of 2 days of meeting in terms of this clause 30.3, then either Party will be entitled to commence litigation proceedings against the other Party, in which event both Parties agree that the matter will be referred to the Commercial Court, a division of the Supreme Court of South Africa, Witwatersrand Local Division ("the Commercial Court") and the Parties consent to the jurisdiction of the Commercial Court.

30.4 Notwithstanding anything to the contrary contained in this clause 30, neither Party shall be precluded from obtaining interim relief from a court of competent jurisdiction pending the decision of an arbitrator appointed in terms of this clause 30.

30.5 The arbitration shall be held -

30.5.1 mutatis mutandis in accordance with the provisions of the Supreme Court Act 59 of 1959, the rules made in terms of that act and the practice of the division of the Supreme Court referred to in 30.10;

30.5.2 in Johannesburg;

30.5.3 with only the legal and other professional representatives of the Parties present;

30.5.4 in terms of the Arbitration Act, No. 42 of 1965,

it being the intention of the Parties that the arbitration shall be held and completed as soon as possible.

30.6 The arbitrator shall be, if the matter in dispute is principally -

30.6.1 a legal matter, a practising senior advocate or attorney of Johannesburg of at least 15 years' standing;

30.6.2 an accounting matter, a practising chartered accountant of Johannesburg of at least 15 years' standing;

therefrom or claim at any such proceedings that it is not bound by such provisions;

- 30.12.2 are severable from the rest of this Agreement and shall remain in effect despite the termination of or invalidity for any reason of this Agreement, or any part of this Agreement.

31. Confidentiality

- 31.1 Subject to the provisions of 31.2, the Parties undertake to each other that they will use all reasonable endeavours to keep and procure that their directors, employees, agents and sub-contractors shall keep secret all Confidential Information and will not disclose such Confidential Information to any third party.
- 31.2 The provisions of clause 31.1 shall not apply to information which:
- 31.2.1 is in or comes into the public domain other than by default of one of the Parties; or
 - 31.2.2 is or has already been independently generated by the Party disclosing such information; or
 - 31.2.3 is disclosed to satisfy a legal demand by a competent court of law or government body; or
 - 31.2.4 is in the possession of or is known by the receiving Party prior to its receipt from the disclosing Party; or
 - 31.2.5 is authorised to be disclosed by the disclosing Party in writing but then only to the extent of the authority given; or
 - 31.2.6 is properly disclosed pursuant to and in accordance with the Licence or any licence granted to MTN, or in accordance with any relevant statutory obligation or (with the prior written consent of the other Party), in order for either Party to comply with the requirements of any recognised Stock Exchange.

- 31.3 Confidential Information which is the subject of the provisions of clause 31.1 shall be used only for the purpose for which it was disclosed and/or for the purposes of performing the obligations of the Parties in terms of this Agreement.
- 31.4 Confidential Information which is the subject of the provisions of clause 31.1 may be disclosed to sub-contractors of the Parties; provided that all such sub-contractors shall, prior to receiving any such information, enter into a confidentiality undertaking, to give effect to the intention of this clause with the disclosing Party.
- 31.5 The provisions of this clause will apply with effect from the Signing Date until 60 months after the date of termination or expiry of this Agreement.

32. Value-Added Tax

All of the prices referred to in this Agreement are exclusive of Value-Added Tax ("VAT") and any other tax, duty or charge payable thereon. Accordingly, any Party which renders a service to the other Party in terms of this Agreement shall be entitled to add VAT, at the prescribed rate, in terms of the Value-Added Tax Act, 1991, to the value of any supply rendered by it to the other Party.

33. MOU

This Agreement supersedes and cancels the MOU. Accordingly, should there for any reason be any conflict between this Agreement and any terms of the MOU, this Agreement shall prevail.

34. Warranties by Telkom

- 34.1 Telkom warrants to MTN that:
- 34.1.1 the terms and conditions of this Agreement will not differ in any material respect from those contained in the interconnection agreement to be concluded simultaneously with this Agreement between Vodacom and Telkom ("the Vodacom Agreement"): and

- 34.1.2 the terms and conditions granted to MTN in terms of this Agreement will be and remain throughout the term of this Agreement no less favourable to MTN than those granted by Telkom to Vodacom in terms of the Vodacom Agreement; and
- 34.1.3 Telkom shall take all necessary steps to ensure that the terms and conditions of Interconnection available to MTN under this Agreement shall, throughout the term of this Agreement, be and remain at least as favourable in all material respects as those granted at any time by Telkom to any other entity licensed, during the term of this Agreement, to operate a public land mobile network in the Territory; and
- 34.1.4 Telkom will negotiate with MTN in good faith with a view to reaching agreement with MTN in writing regarding access by MTN to any site owned by Telkom to accommodate MSC's, Base Stations, and Base Station Controllers, operated by MTN, when requested to do so by MTN.
- 34.2 Telkom undertakes to notify MTN in writing of any variations proposed to the Vodacom agreement throughout the term of the Vodacom agreement.

35. Notices and domicilia

- 35.1 The Parties choose as their domicilia citandi et executandi their respective addresses set out in this clause for all purposes arising out of or in connection with this Agreement, at which addresses all processes and notices arising out of or in connection with this Agreement, its breach or termination may validly be served upon or delivered to either of the Parties.
- 35.2 For the purposes of this Agreement the Parties' respective addresses shall be -
- 35.2.1 as regards Telkom : Telkom Towers North
152 Proes Street
Pretoria
0001
(for the attention of the Company Secretary)

facsimile number : 012-325 7234

35.2.2 as regards MTN : Pin Mill Farm
Katherine Street
Sandton
(for the attention of the Company Secretary)

facsimile number : 011-444 4930

or at such other address, not being a post office box or poste restante, of which the Party concerned may notify the other Party in writing.

35.3 Any notice given or other document sent in terms of this Agreement shall be in writing and shall -

35.3.1 if delivered by hand be deemed to have been duly received by the addressee on the date of delivery;

35.3.2 if posted by prepaid registered post be deemed to have been received by the addressee on the 7th Business Day following the date of such posting;

35.3.3 if transmitted by facsimile be deemed to have been received by the addressee the day after despatch;

35.3.4 in the case of all documents, excluding notices, if posted by ordinary prepaid post be deemed to have been received by the addressee on the 10th Business Day following the date of such posting.

35.4 Notwithstanding anything to the contrary contained in this Agreement, a written notice or communication actually received by one of the Parties from another including by way of facsimile transmission shall be adequate written notice or communication to such Party.

36. Whole agreement

This Agreement constitutes the whole Agreement between the Parties as to the

subject matter of this Agreement and no Agreements, representations or warranties between the Parties other than those set out herein will be binding on the Parties.

37. Variation

Subject to the provisions of 24.1, no addition to or variation, consensual cancellation or novation of this Agreement and no waiver of any right arising from this Agreement or its breach or termination shall be of any force or effect unless reduced to writing and signed by both the Parties or their duly authorised representatives.

38. Relaxation

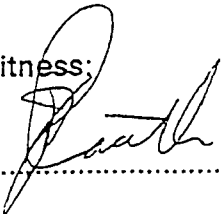
No latitude, extension of time or other indulgence which may be given or allowed by either Party to the other in respect of the performance of any obligation hereunder or the enforcement of any right arising from this Agreement and no single or partial exercise of any right by either Party shall under any circumstances be construed to be an implied consent by such Party or operate as a waiver or a novation of, or otherwise affect any of that Party's rights in terms of or arising from this Agreement or estop such Party from enforcing, at any time and without notice, strict and punctual compliance with each and every provision or term of this Agreement.

39. Necessary approvals and consents

Each Party:

- 39.1 warrants to the other Party that it has the necessary rights, licences and authorities to enter into and perform its obligations in terms of this Agreement;
- 39.2 indemnifies the other Party against any loss, claim, expense, damage or action, suffered or sustained by such other Party pursuant to a breach by such Party of its warranty in terms of 39.1, notwithstanding anything to the contrary contained in this Agreement.

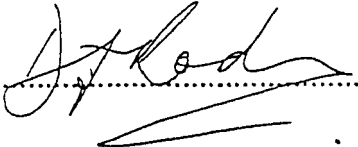
Signed at *PRETORIA* on 16 FEBRUARY 1994.

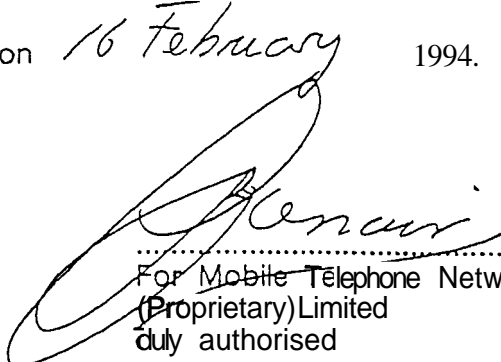
As witness:

.....



For Telkom SA Limited
duly authorised

Signed at *PRETORIA* on *16 February* 1994.

As witness:

.....


.....
For Mobile Telephone Networks
(Proprietary) Limited
duly authorised

POINTS OF INTERCONNECTION AND CAPACITY

1. GENERAL

This document relates to the current and proposed points of interconnection between the MTN PLMN and the PSTN. It details the routes, their capacity in terms of 2 Mbit/s systems, date required, signalling type, trunk group direction, and the contracted service level.

2. POINTS OF INTERCONNECTION

MSC	POI	CAPACITY 2 MB/s SYSTEMS	SIGNALLING SYSTEM	TRUNK GROUP DIRECTION (PSTN TO PLMN, PLMN to PSTN BW)	CONTRACTED SERVICE LEVEL	RFS DATE
MTZ	JDF1	4	R2MFC	PLMN-PSTN	99,5	15.02.94
MTZ	JDF1	2	R2MFC	PSTN-PLMN	99,5	15.02.94
MTZ	JRB1	3	R2MFC	PLMN-PSTN	99,5	15.02.94
MTZ	JRB1	1	R2MFC	PSTN-PLMN	99,5	15.02.94
MTZ	JGH1	2	R2MFC	PLMN-PSTN	99,5	15.02.94
MTZ	JGM1	1	R2MFC	PSTN-PLMN	99,5	15.02.94
MMJ	JDF1	10	CCS7	BW	99,95	4.03.94
MMJ	JRB1	5	CCS7	BW	99,95	4.03.94
MMJ	JGH1	4	CCS7	BW	99,95	4.03.94
MMC	CBS	5	CCS7	BW	99,95	14.03.94
MMC	CTB	3	R2MFC	PLMN-PSTN	99,95	14.03.94
MMC	CTB	2	R2MFC	PSTN-PLMN	99,95	14.03.94
MMD	DNG	8	CCS7	BW	99,95	3.06.94
MMD	DTM	6	R2MFC	PLMN-PSTN	99,95	3.06.94
MP	DTM	2	R2MFC	PSTN-PLMN	99,95	3.06.94

TABLE 1

NOTE

For reliability signalling links must be provisioned over physically diverse transmission paths where such diversity exists. Any deviation from this rule must be negotiated between the two Parties.

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1. TECHNICAL SPECIFICATIONS

1.1 General

The Recommendations made by the International Telegraph and Telephone Consultative Committee (the CCITT) of the International Telecommunication Union (ITU) or as adapted in Telkom Specification Number 7 Chapter 9 for Inter-Register and Line Signalling (R2 MFC), Chapter 12 for Interfacing between Equipment Types, and Chapter 37 for Common Channel Signalling System Number 7 (CCS 7) provide the framework for adherence to the standards contained therein. The Parties are committed to conform wherever practicable with the CCITT and ETSI GSM/DCS 1800 Recommendations and the Telkom Specification Number 7 as amended and revised from time to time. The present form of reference will be the CCITT recommendations as published in the CCITT Blue Book (the recommendations endorsed by the 1988 Plenary Assembly) and the Grey Book Recommendation Q767 as amended by the White Papers (published subsequent to the 1992 Plenary Session).

Notwithstanding the above recommendations, for Calls that are originated in one Telecommunications Network and terminated in another, the originating Telecommunications Network will be entitled to block backward signals that modify the originating tariff structure. Such backward signals will be discarded and the Call will be force released.

1.1.1 Safety (Dangerous Voltages)

In order to protect personnel and equipment on both sides of the interface it is necessary to provide protection against the transmission of dangerous voltages across the interface (see 1.2).

For equipment which uses or generates excessive voltages, a barrier shall be provided to protect the interface from those voltages.

1.2 Physical Interface

The physical interface between the PLMN and the PSTN Systems shall be 120 ohm balanced termination provide by means of a twisted pair terminated on 10 pair Krone

control signals for performance monitoring equipment and the application of loops for maintenance purposes. It should be noted that Telkom monitoring equipment will insert CRC4 co-efficient into the appropriate bits of the CRC4 multiframe if this facility is not provided by the terminal multiplexers. The spare bits of the CRC4 multiframe are transmitted transparently. To allow these facilities a frame structure complying with G.704 is required and the use of an unframed 2Mbit/s link will not be acceptable as it will prevent the previously mentioned monitoring.

1.4.5 Fault Conditions and Consequent Actions

The provisions of Recommendations G.732, Q.501 to Q.517 shall be implemented by the Parties.

1.4.6 Channel Time Slot Encoding

CHANNEL TIME SLOTS

The 64 kbit/s channel time slots comprising the 2048 kbit/s stream shall carry "A" law encoded information as defined in Recommendation G.711.

IDLE CHANNEL BIT PATTERN

The idle channel bit pattern in both directions shall be 01010100 (MSB at left hand end) in accordance with paragraph 2.4.6 of Recommendation Q.503 when the interface is between digital exchanges.

1.5 Synchronisation

Synchronisation of the Telecommunications Networks will be attained on the interface points of the PLMN with the PSTN.

This will be accomplished by:

Telkom providing the standard reference signal from two caesium clocks which are continuously synchronised with the CSIR's rubidium clock,

which in turn synchronise the international exchanges,

which in turn synchronise the Digital Primary Switching Units (DPSUs).

The synchronisation of the Mobile Switching Centres (MSCs) will be achieved by having a connection to two DPSUs or, as an alternative if two direct links are not available, to one DPSU and any other MSC.

The two E1 links in which the Common Channel Signalling System Number 7 (CCS 7) will be provided, will also be used for synchronisation purposes since the E1s will be appropriately marked.

In the event of both bit streams failing, an internal source meeting CCITT Recommendation G.811 shall become the worker.

1.6 CCS 7 Signalling Links

Signalling link pairs in a combined link set will be operated in a load share mode, with no single signalling link operated at greater than 30% of its theoretical message capacity under normal conditions and 60% under overload conditions.

A 64 Kbit/s signalling link will be engineered to offer, in each direction, a normal traffic load of up to 96 ISUP messages per second for trunk signalling and an overload traffic load of up to 192 ISUP messages assuming an average message length of 25 octets shall apply.

All signalling will be passed over timeslot 16 on any particular PCM. Any links not carrying signalling shall still not use timeslot 16.

It will be up to the discretion of Telkom or MTN, as the case may be, as to whether en block or overlap signalling is used.

2. PROVISIONING PROCEDURE

2.1 Introduction

This procedure will address the provisioning of cellular operator COFLs (COFLs)

between the MSC and the POI and the termination of such links. These links will be referred to hereafter as Point of Interconnect Links (POILs). It will also address the provisioning of signalling point codes for new POIs and new MSCs.

2.2 Forecast

MTN shall provide Telkom on the first working day of January each year with their forecasted requirements for POIL for each of the following 2 years. Such information shall be passed, in writing, to the appointed Telkom appointed person starting on the signing date and in the following format:

MSC -POI		199	199
Trunk Group Name A PSTN-PLMN PLMN-PSTN Bothway	Traffic		
	Timeslots		
	Signalling		
	Month Req		
Trunk Group Name B PSTN-PLMN PLMN-PSTN Bothway	Traffic		
	Timeslots		
	Signalling		
	Month Req		

2.2.1 Terms used in the above table shall mean the following:

Trunk Group - A group of timeslots from one or more 2 Mbit/s systems between the MSC and POI that are grouped together for the purpose of transmitting Calls between

exchanges. Each trunk group will be given a unique six character alpha-numeric name, as defined in section 2.3 to distinguish it from all other trunk groups connected to the exchange.

Traffic - The amount of telephone traffic, measured in erlangs, for which the trunk group is being dimensioned.

Timeslots - The number of 64 kb/s timeslots that would constitute the trunk group.

Signalling - The signalling system that will be used for the trunk group e.g. CCS 7, R2 etc..

Month Required - The month of the particular year during which it is expected that the number of timeslots will be required.

2.3 Trunk group naming convention

It is assumed that all trunk group names consist of six alpha numeric characters and they are constituted as follows:

Characters 1-3

The three letter abbreviation of the distant exchange to which the trunk group is connected. In cases of a two letter abbreviation, character position 3 is filled with a "+".

Character 4

H = Trunk exchange (Digital Primary Switching Unit - DPSU)

M = Mobile Switching Centre (MSC)

L = Local Exchange (Digital Secondary Switching Unit - DSSU)

Character 5

Indicates the number of the distant exchange unit e.g.

A = JDF1

B = JDF 2 etc.

Character 6

The direction of the trunk group

I = Incoming

O = Outgoing

B = Bothway (BW)

Z = CCS#7 signalling link

In the event that only five characters are available characters 4 and 5 will be combined as follows:

If only one exchange unit exists at the distant end then character 4 is maintained.

If more than one exchange unit exists at the distant end then character 5 is maintained.

MTN should allocate a unique three letter alphabetic code to its Switch for identification and registration purpose within Telkom. These codes should be different from existing codes used by Telkom.

2.4 Request for quotation and order for POILs.

Refer to the procedures described within clauses 8 and 9 of the main body of the Agreement. Each request shall be in the following format:

MSC-POI						
TRUNK GROUP NAME	TRAFF	2Mbit/s SYSTEMS REQUIRED	SIGNAL SYSTEM	TRUNK GRP DIRECTION (PLMN-PSTN PSTN-PLMN BOTHWAY)	REQUIRED SERVICE LEVEL	REQUIRED DATE yy/mm/dd
Physical address of MSC						

Preceding the placing of an order for a POIL(s), contact will be required between Telkom and MTN for the purpose of carrying out detailed planning and project management. Such detailed planning and project management will involve the accommodation and location of Telkom transmission equipment on MTN's MSC premises, the availability of dc and ac power and accessibility of the premises for the installation of equipment.

Telkom's contact will be at regional level and the contact point will be indicated by Telkom from time to time.

Where transmission equipment is to be placed on MTN's MSC premises for the purpose of providing a POIL, such accommodation and the necessary dc and ac power for the transmission equipment shall be made available at least 60 days prior to the date the POIL(s) is required to be in service and at no cost to Telkom.

Where transmission equipment is to be located on MTN's premises or towers for the purposes of providing a COFL, such accommodation, the necessary dc and ac power, a 3 ohm earth and lightning protection for the transmission equipment, shall be made available by MTN at least 60 days prior to the date the COFL is required to be in service, and at no cost to Telkom. In addition MTN shall ensure that Telkom

personnel have full access to the site as from the date that the order for a specified COFL is placed.

Accommodation at MTN's premises or towers, for the location of transmission equipment for the purposes of providing a COFL, shall be based on Telkom's Technical Instruction H1041, Installation of PCM Equipment at Customers Premises.

2.5 Commissioning of POILs

Any POIL shall be tested in accordance with the appropriate test specification for the signalling system employed prior to commissioning.

2.6 Signalling Point Code Allocation

Telkom will initially control the Signalling Point Code (SPC) allocation between the Telecommunications Networks. The SPC information shall be included in the response from the relevant Telkom's appointed person when the POIL order refers to either a new POI or a new MSC.

3. MUTUAL SERVICES AND FACILITIES

3.1 Emergency Services

The number 107 will in future be used by Telkom within the Territory as the access number to be dialled by customers to route calls to the Emergency Services Reporting Centres. Until the advent of these Centres, the numbers 10111 and 10177 may be used to access the Police Emergency and Ambulance Emergency Services respectively. In accordance with the European Community standard, the number 112 may also be used by PLMN customers to route calls to the 107 reporting centres when they are established.

Calls routed to emergency organisations via centres nominated in writing by MTN to receive such Calls and agreed to by Telkom prior to the establishment of national emergency centres may be accessed by dialling 107 or 112.

A document containing information relating to the existing Police and Ambulance emergency services, respective areas and corresponding PSTN telephone numbers has been supplied to MTN. Updates to this document will be supplied to MTN by Telkom's appointed person within five Business Days of it becoming available to Telkom.

3.2 Directory Services

3.2.1 National

3.2.1.1 Where required, directory enquiry calls by Customers of MTN may be routed across the interface to Telkom's Directory Enquiries centre. The number to be passed across the interface will be 1023. Telkom will route such calls to the Directory Enquiries centre of its choice, after consultation with MTN.

3.2.1.2 Direct online access by MTN to the Telkom Directory database will be allowed.

MTN shall ensure that all information extracted from Telkom's directory information database shall be used solely for dealing with on line enquires made by its customers and that the said information shall not be used to produce directories in any form, downloaded for sale to any other person, or for any other purpose.

3.2.2 International

3.2.2.1 Telkom's international switchboard operators shall handle all international directory enquiries and MTN's switchboard operators shall contact Telkom's international switchboard operators when the said enquiries are received from its customers.

3.2.2.2 MTN shall bar its customers direct access to Telkom's international directory enquiry service.

3.3 Switchboard Operator Assisted Call Service

- 3.3.1 Each Party shall be responsible for rendering any such service to its own customers in respect of the booking and establishment of Manually Switched Calls including International Calls, Calls to ships at sea, Trunk Calls, Fixed Time Calls, Personal Calls, Collect Calls and Conference Calls.
- 3.3.2 The switchboard operators of MTN shall contact Telkom's National Manual Service Centre (NMSC) or International Manual Service Centre (IMSC), as may be appropriate. Telkom shall contact the switchboard operators of MTN for booking and establishing Manually Switched Calls destined for the PLMN.
- 3.3.3 After consultation with the relevant Party and where required MTN shall bar its customers direct access to the NMSC and IMSC and Telkom shall bar its customers direct access to the switchboard operators of MTN.
- 3.3.4 The procedure for setting up, controlling and charging of such Calls will be dealt with in a separate manual which will be set up after bilateral discussions.
- 3.4 Telkom's Toll-Free Service
- 3.4.1 The number of Telkom's Toll-Free service is in the format:

080 AB XXXXX

where

080 is the access digits to the service; and

AB defines services options which include time dependent switching, multiple destination and barring options.

Initially MTN will only be allowed access to the 080 OB option of the Service. Access to other service options are for discussions between MTN and Telkom. This service option is the no barring/national access service option.

4. GRADE AND QUALITY OF SERVICE AND SERVICE LEVELS

4.2 Service Levels on POILs

4.2.1 Availability

When assessed over a one year period, the COFL availability will be a minimum of that contracted between MTN and Telkom for that COFL. Such an availability figure will exclude failures that occur after hours, as defined in Appendix 5, if MTN does not make use of the after hours repair service indicated in 3.5. A circuit is deemed to be unavailable when there is either no data throughput for a period greater than 10 seconds or when the error ratio exceeds 10^3 for more than 10 consecutive seconds. The availability figure specified above is seen as a long term objective and should not be used to assess the short term quality of the COFLs.

For the purpose of determining installation and rental fee discounts on COFLs and the determination of service levels on such COFLs a route is defined as a group of 2 Mbit/s systems used to connect 2 elements within the same network or between 2 elements in different networks notwithstanding the physical routing of the systems. Further, in the case of 1 MSC connected to multiple POIs, such POIs will be considered to be 1 element.

OPERATION AND MAINTENANCE FOR THE INTERFACE
BETWEEN MTN AND TELKOM

CONTENTS

1. INTRODUCTION
2. DEFINITIONS
3. FAULT HANDLING AND RECTIFICATION PROCEDURES
4. MAINTENANCE PROCEDURE
5. OTHER ISSUES

1.0 INTRODUCTION

- 1.1 This Appendix addresses the operation and maintenance procedures relevant to the Interconnection between the PSTN and PLMN.
- 1.2 It is essential that any malfunction of the Interconnection be rectified promptly.
- 1.3 Each Party accepts the responsibility to ensure that its own staff adheres to the agreed principles and procedures laid down in this Appendix.
- 1.4 Additional operation and maintenance procedures for POILs as well as all COFLs are defined within Appendix 5

2.0 DEFINITIONS

2.1 INTERCONNECTION SERVICE DESK (ISD).

Telkom and MTN shall establish one ISD each to which all factors relevant to the proper functioning of the Interconnection (generally of a technical nature) are to be reported. This desk will also deal with all faults relating to COFLs, and POILs. The ISD should be staffed on a 24 hour basis and equipped with necessary infrastructure to facilitate efficient communication. Each Party will be responsible for processing reported faults using its own procedures. Any inter service assistance required shall be requested through the ISD. Each ISD is obliged to offer its full assistance for rectification of Interconnection faults.

Each ISD will be the traffic controlling Party for the circuit on which it loads outgoing traffic.

ISD contact telephone numbers are contained in a separate document and are to be updated by the ISDs as and when changes occur.

2.2 Cataleptic failure of Interconnection.

A sudden failure, persisting for longer than 10 seconds, which is characterised by complete inability to perform all required functions of any item in the Interconnection.

2.3 Partial failure of Interconnection.

Any failure other than a cataleptic failure which affects more than 15% of the total number of ports. A port is the interface between the exchange equipment on the one hand and the environment on the other hand.

2.4 Interconnection Outages.

The duration of cataleptic or partial failures of any of the components included in the Interconnection are termed outages. These outages could be planned or unplanned. All Interconnection outages must be reported to all ISD.

2.5 Installation Attendance.

A staffed building is defined as a building where a technically competent person is present with the correct test equipment, spares and tools to clear the fault, at the time the fault is reported to the ISD. If the above requirements are not met, then the building is considered unstaffed. The Parties have to inform each other's ISD about the staffing of relevant buildings.

3.0 FAULT HANDLING AND RECTIFICATION PROCEDURES

3.1 Cessation and Recovery of Service.

3.1.1 Outages caused by cataleptic or partial failures in the Interconnection.

3.1.1.1 Unplanned outages.

Upon detection of an unplanned outage, relevant ISDs must be notified. At the time of notification the outage could have ceased to exist or could still be persisting. In cases where the outage has ceased to exist, the ISDs will note the occurrence, duration and details of the failure. Immediate action must be taken to localise the fault causing the failure (and consequently identify which party is responsible for clearing the fault where this is unclear at first) in cases where the outage persists. Relevant ISDs must be informed every 15 minutes, or at mutually agreed upon intervals, thereafter by the responsible party of the

progress of the repair until restoration of full service whereupon the ISD will note the outage duration and details of the failure.

3.1.1.2 Planned outages.

Planned outages must be kept to an absolute minimum and should not be carried out during busy traffic times. The party planning such an outage must inform the other affected ISD(s) 14 days in advance (by mutual agreement this time scale can be reduced) and mutually agree upon a suitable time and expected duration for such an outage. If the planned outage does not directly affect the other Parties, their ISDs should be informed of the planned time of the outage. During the planned outage, the responsible Party must keep the other ISDs informed at regular intervals with the progress until full restoration of service whereupon the ISDs will note the outage duration. If the items are not restored to full service within the expected duration, the outage will be regarded as an unplanned outage occasioned by a planned outage and the procedure above for dealing with unplanned outages will be followed.

3.1.1.3 Fault History.

Each Party shall maintain records, preferably electronic, containing details of all faults and the corresponding restoration times which were handled between it and the other ISDs for a running twelve month period. These records should be used to assess the fault performance of the Interconnection.

3.1.2 Other external influences which could affect Interconnection service.

3.1.2.1 International service.

The PSTN operator must inform all ISDs immediately of major failures which could degrade international telephone service to any particular destinations by more than 50%, e.g. failure of satellite or undersea cables, international exchange, etc. ISDs must be informed of restoration of service and details of the failure.

3.1.2.2 Inter Primary service.

The PSTN operator must inform all ISDs immediately of major failures which could degrade PSTN inter primary telephone service between nodes by more

than 50%, e.g. transmission media failure, exchange failure, etc. ISDs must be informed of restoration of service and details of the failure.

4.0 MAINTENANCE PROCEDURES

4.1 Maintenance Methodology

It is accepted that certain scheduled (preventive) and unscheduled maintenance actions will be carried out by the Parties on the items comprising the Interconnection. Where such actions could affect the proper functioning of the Interconnection, e.g. working on critical, centralised equipment, ISDs should be informed accordingly, in the case of scheduled maintenance, the schedule of critical activities must be made available to ISDs in advance. It would not be necessary to inform the ISDs of completion of such activities. If, however, the maintenance action results in a cataleptic or partial outage, the procedure in paragraph 3.1.1 above should be followed.

4.2 Routine Testing.

All Parties shall supply each other test numbers to be used for test calls for routine testing of the interconnection circuits. The Parties agree to use artificial traffic generators in such a way so as not to unduly load the interconnection.

4.3 System and circuit Identification.

Generic system and circuit identification shall be communicated by Telkom to MTN for mapping to its own generic system and circuit identification scheme.

4.4 Interconnection Circuit Utilisation Details.

The Parties may, where required, exchange records of utilisation and Call connection performance over the interface to ensure that service over the interface is maintained at satisfactory levels. Information regarding planned dates for route augmentation shall also be exchanged between the Parties whenever necessary.

4.5 Malicious Call Tracing.

Authorised malicious call tracing may be requested by any of the ISDs. The other Party shall give priority to the request.

4.6 Access to PLMN sites housing transmission line terminating equipment.

When faults on the transmission links connecting the MSC and POI are reported, MTN agrees to provide access or assistance to Telkom maintenance personnel at these sites during testing and repair of the fault. Telkom cannot be held responsible for long outages due to lack of reasonable access or assistance at the PLMN sites.

5.0 OTHER ISSUES

5.1 Escalation procedure for operational matters.

In all cases of outages or interaction between MTN and Telkom during operation and maintenance activities, an escalation procedure is applicable. If the service levels agreed to in Appendix 2 are not adhered to, the matter may be escalated to the next level in the organisation as agreed upon according to the general escalation procedure.

5.2 Software upgrades/modifications.

Software version enhancements must be initially introduced and tested between MTN and Telkom at test exchanges to ensure that there are no interworking problems before introduction into an active exchange. A minimum of two weeks written notice must be given before testing can commence. This notice of the requirement to test must go via Telkom's appointed person.

Unless otherwise agreed in writing between the Parties, a 30 day lapse between a software upgrade in any MSC or Telkom switching unit and the general release into the rest of the network is required.

A controllable number of software patches should be activated in any 24 hour period on the same switching unit. The testing of such patches will be by mutual agreement in writing. All applications and tests must be completed in low traffic periods i.e. between 22:00 and 05:00 or by mutual agreement in writing.

5.3 Service Reviews.

Whenever required, but not less frequently than every six months, meetings are to be held between the three ISDs to review the performance of the Interconnection, and operational information exchange between the ISDs and the procedures as embodied herein.

NUMBERING ALLOCATION AND ROUTING DIVERSITY
FOR POINT OF INTERCONNECTION

CONTENTS

1. INTRODUCTION
2. ROUTING PRINCIPLES
 - 2.1 ROUTING FROM THE TELKOM FIXED NETWORK TO THE PLMN
 - 2.2 ROUTING FROM THE PLMN TO THE PSTN
 - 2.3 ABNORMAL CONDITIONS
 - 2.4 ROUTE DIVERSITY AND SECURITY REQUIREMENTS
3. NUMBERING
 - 3.1 GENERAL
 - 3.2 NATIONAL INCOMING TO THE PLMN
 - 3.3 INTERNATIONAL INCOMING TO THE PLMN
 - 3.4 NATIONAL OUTGOING CALLS FROM THE PLMN
 - 3.5 INTERNATIONAL OUTGOING CALLS FROM THE PLMN
 - 3.6 CCS No.7 SPC NUMBERING

1. INTRODUCTION

This Appendix describes the general routing principles, including routing diversity, to be employed by MTN to Telkom as well as the same principles from Telkom to MTN. The allocation of CCS No 7 Destination Point codes is also addressed in the section relating to numbering.

2. ROUTING PRINCIPLES

2.1 Routing from Telkom to MTN

The catchment areas within the PSTN served by any POI shall be mutually agreed upon between the parties concerned. Calls from within the agreed PSTN catchment area will be routed over the PSTN to the appropriate POI in accordance with the PSTN routing plan at not less than the service levels and grade of service agreed to in Appendix 2 section 4.

2.2 Routing from MTN to Telkom

According to mutual agreement, MTN will route calls to the POI as defined in the routing tables supplied by Telkom. These tables will define first choice and alternate routing for specified PSTN dial codes. In the event of loss of circuits forming a route, re-routing to a POI which is within the same PSTN metropolitan exchange area as the first choice POI, will be allowed. Re-routing to a POI in a different metropolitan exchange area may only be done on mutual agreement in writing.

2.3 Abnormal Conditions.

The re-routing of traffic under abnormal conditions will be according to the alternate routing indicated in the routing tables supplied by Telkom as for 2.2 above. It is agreed to inform the other Party of such re-routing undertaken in the event of severance of routes. When only a portion of a route has failed, traffic should continue to be offered to the remaining portion of that route before overflowing to latter choice routes. In the event of the available capacity on the designated alternative routes being insufficient to handle all the overflow traffic, then each/either Operator must contact the other to seek agreement to route the remainder of the traffic through its own network to an alternative POI. The predefined prescribed arrangements and

details of the information to be handed over in such an event, will be encompassed in a document to be drawn up by the appropriate sub-committee. In the event that the predefined routing arrangements for abnormal conditions cannot be implemented due to exceptional circumstances within the PSTN, Telkom will provide details of the alternative arrangements which are to be implemented in their place.

2.4 Route Diversity and Security Arrangements

For reliability signalling links must be provisioned over physically diverse transmission paths and/or equipment where such exists. Any deviation from this rule must be negotiated and agreed to in writing between Telkom and MTN.

Telkom undertakes that the following rules will apply with respect to service levels. These will be assessed over any Accounting Period:

1. At a service level of 99.5% there will not be a need for diversity in any form.
2. At a service level of 99.9% Telkom shall provide transmission equipment diversity but not necessarily route diversity.
3. For the 99.95% service level then Telkom shall provide transmission equipment and route diversity.

The above rules would not incur extra costs to MTN and any change to them must be discussed between the Parties.

All 2 MBit/s systems carrying CCS 7 signalling links between MSCs and/or the POIs shall be clearly marked in the switching and transmission equipment rooms so as to prevent any unnecessary maintenance activities.

The minimum number of links per link set shall be two. Any number of links per link set, however, exceeding 2 shall be negotiated between MTN and Telkom. All circuit conditioning equipment such as PADS and echo cancellers must be removed from the signalling links.

accordance with CCITT Recommendations E. 164 and E. 163. The International access code will also be sent.

3.6 CCS No 7 SPC Numbering.

3.6.1 GENERAL

The numbering of the signalling points and the networks is inter-related by the Signalling Point Code (SPC) and the Network Indicator (NI).

For the purpose of convenience and security it is proposed that each Telecommunications Network have an independent signalling point code (SPC) numbering scheme and one single numbering scheme where the interconnecting signalling points are defined.

This will have the effect where each Telecommunications Network is responsible for the internal SPC numbering of its Telecommunications Network without being subjected to demands by other telecommunications systems.

3.6.2 IDENTIFICATION OF TELECOMMUNICATIONS NETWORKS

3.6.2.1 Sub-Service Field (SSF) or Network Indicator (NI)

The Sub-Service Field or Network Indicator is part of the Service Information Octet (SIO).

The network indicators are defined in CCITT as follows:

bits D and C		Network indicator	
0	0	International Network	- INATO
0	1	Spare	- INAT1
1	0	National Network	- NATO
1	1	Reserved for National use	- NAT1

where bits A and B are not presently used, ie spare.

- e) The next three bits shall determine the operator in the areas, ie 001 Telkom, 010 MTN. The remaining four combinations will be reserved for future operators/services.
- f) The next four bits can determine the switching unit (a maximum of 15).
- g) The last three bits will be, by default, set to zero until such time as their use is required.

3.6.3.4 it is possible for signalling points in different telecommunications systems to have the same OPC and DPC numbers, ie PSTN and PLMN, but the difference is shown in NAT code in the Sub-Service Field of the Service Information Octet.

CELLULAR OPERATOR FIXED LINK SPECIFICATIONS AND
PROCEDURES (INTRA AND INTER PLMN)

CONTENTS

1. TECHNICAL SPECIFICATION
2. PROVISIONING PROCEDURE
3. OPERATION AND MAINTENANCE PROCEDURE
4. TRANSMISSION FIXED LINK TESTING AND COMMISSIONING PROCEDURE

1.0 Technical Specifications

1.1 General

The Recommendations made by the International Telegraph and Telephone Consultative Committee (the CCITT) of the International Telecommunication Union (ITU) or as adapted in Telkom Specification Number 7 Chapter 9 for Inter-Register and Line Signalling (R2 MFC), Chapter 12 for Interfacing between Equipment Types, and Chapter 37 for Common Channel Signalling System Number 7 (CCS 7) provide the framework for adherence to the standards contained therein. MTN and Telkom are committed to conform wherever practicable with the CCITT and ETSI GSM/DCS 1800 Recommendations and the Telkom Specification Number 7 as amended and revised from time to time. The present form of reference will be the CCITT recommendations as published in the CCITT Blue Book (the recommendations endorsed by the 1988 Plenary Assembly) and the Grey Book Recommendation Q767 as amended by the White Papers (published subsequent to the 1992 Plenary Session).

Notwithstanding the above recommendations, for Calls that are originated in one Telecommunications Network and terminated in another, the originating Telecommunications Network will be entitled to block backward signals that modify the originating tariff structure. Such backward signals will be discarded and the Call will be force released.

1.1.1 Safety (Dangerous Voltages)

In order to protect personnel and equipment on both sides of the interface it is necessary to provide protection against the transmission of dangerous voltages across the interface (see 1.2).

For equipment which uses or generates excessive voltages, a barrier shall be provided to protect the interface from those voltages.

1.2 Physical Interface

The physical interface between the PLMN and the PSTN Systems shall be 120 ohm balanced termination provide by means of a twisted pair terminated on 10 pair Krone

insulation displacement terminating blocks. A loss of 6dB is supported for both termination types.

1.3 Electrical Interface

1.3.1 Input and Output

The electrical interface shall conform to CCITT Recommendation G.703 for twisted pairs at 2048 kbit/s. The input impedance of 120 Ohm balanced is required. The output impedance is approximately 20 Ohms as specified in G.703. This is necessary to meet the required pulse shape masks.

1.3.2 Attenuation

The attenuation of the interconnecting cable (including any digital distribution frame or interconnecting equipment) shall not exceed 6dB at 1024 kHz.

1.3.3 Interference

Both input ports shall tolerate, without error, interference from a non-synchronous standard test signal (CCITT Recommendation 0.151) at a level 18dB lower than the wanted signal.

1.3.4 Multiplex Characteristics

The multiplex structure shall be in accordance with CCITT Recommendation G.732, and Recommendation G.704 and G.705 and Q.501 - Q.517 for operation involving digital exchanges.

1.4 SIGNALLING

Chapter 5 of Recommendation G.732 applies.

1.4.1 Wander and Jitter

Maximum jitter at output ports immediately preceding digital switching as per CCITT Recommendation G.823 (1984) paragraph 2 shall apply.

Jitter and wander tolerance at input ports will be as per CCITT Recommendation G.823 (1984) for 2Mbit/s links on the PDH network and for links provided on copper cables with regenerators. It should be noted that the ports should be able to tolerate a frequency offset greater than 50ppm.

1.4.2 Time Slot Zero

Chapter 2 of Recommendation G.732 applies. However, Telkom requires access to any one of the spare five bits in the frame alignment word as control signals for performance monitoring equipment and the application of loops for maintenance purposes. It should be noted that Telkom monitoring equipment will insert CRC4 co-efficient into the appropriate bits of the CRC4 multiframe if this facility is not provided by the terminal multiplexers. The spare bits of the CRC4 multiframe are transmitted transparently. To allow these facilities a frame structure complying with G.704 is required and the use of an unframed 2Mbit/s link will not be acceptable as it will prevent the previously mentioned monitoring.

1.4.3 Fault Conditions and Consequent Actions

The provisions of Recommendations G.732, Q.501 to Q.517 shall be implemented by the Parties.

1.4.4 Channel Time Slot Encoding

CHANNEL TIME SLOTS

The 64 kbit/s channel time slots comprising the 2048 kbit/s stream shall carry "A" law encoded information as defined in Recommendation G.711.

IDLE CHANNEL BIT PATTERN

The idle channel bit pattern in both directions shall be 01010100 (MSB at left hand end) in accordance with paragraph 2.4.6 of Recommendation Q.503 when the interface is between digital exchanges.

- 2.0 Provisioning Procedures
- 2.1 Refer to the procedure described within clause 8 and 9 of the main body of the Agreement.
- 2.2 Preceding the placing of an order for a specified link, contact will be required between Telkom and MTN for the purposes of carrying out detailed planning and project management. Such detailed planning and project management will involve the accommodation and location of Telkom transmission equipment on MTN's premises and towers, the availability of dc and ac power and the accessibility of the premises and towers for the installation of equipment. At the time of placing an order, MTN shall indicate who the contact person is, as well as provide contact information.
- 2.3 From Telkom's side such contact will be done at Regional level by appointed Regional co-ordinators.
- 2.4 Where transmission equipment is to be located on MTN's premises or towers for the purposes of providing a fixed link, such accommodation, the necessary dc and ac power, a 3 ohm earth and lightning protection, for the transmission equipment, must be made available at least 60 days prior to the date the fixed link is required to be in service, and at no cost to Telkom. In addition, MTN must ensure that Telkom personnel have full accessibility to the site as from the date that the order for a specified link is placed.
- 2.5 Accommodation at MTN's premises or towers, for the location of transmission equipment for the purposes of providing a fixed link, must be based on Telkom's Technical Instruction H1041, Installation of PCM Equipment at Customers Premises.
- 2.6 For the purposes of long term planning within Telkom, MTN must provide Telkom with its two year forecast for specified link requirements on the first working day of each calendar year. Such information, which must be forwarded to the Telkom appointed person, must include the quantity and point to point location of specified links, as well as an as accurate as possible indication of the month within a particular year that such specified links will be required.

3.0 Operations and Maintenance Procedures

3.1 Reporting of Faults

Service problems related to the transmission links provided to MTN shall be reported to Telkom's ISD as described in Appendix 3. Telkom and MTN's ISD shall also be timeously informed of planned outages on transmission links and both Parties shall agree upon a suitable time and the expected duration of such an outage. The Telkom ISD will report faults proven into the transmission links to the responsible transmission maintenance section of Telkom according to internal fault reporting procedures.

Recurring Faults

In the case of recurring or intermittent faults, the Parties will undertake all reasonable measures to find and clear the fault by means of special investigations and permanent monitoring of the relevant circuits.

3.2 Access to PLMN sites housing transmission line terminating equipment

When faults on the transmission links to PLMN sites are reported, MTN must provide access or assistance to Telkom maintenance personnel at these sites during testing and repair of the fault. Telkom cannot be held responsible for outages due to a lack of reasonable access or assistance at PLMN sites.

3.3 Escalation procedures

In all cases of outages on transmission links provided to MTN, the escalation procedure as agreed upon in the network contract and escalation procedure document is applicable.

3.4 After Hours Repair Service

The same fault reporting procedure as described above will also be followed after hours. An additional fee, as published from time to time by Telkom, will be charged for after hours repairs. There will be no additional charge for faults reported after hours, but repaired during normal hours.

The after hours repair service will be rendered during the following hours:

Mondays to Fridays	:	from 17:00 until 7:30 the next day.
Weekends	:	from Fridays 17:00 until 7:30 on Mondays.
Public holidays	:	from 17:00 on the preceding working day until 7:30 on the next working day.

3.5 Operational Standards for Fixed Transmission Links

The Parties shall endeavour to adhere to the standards for the operation of the transmission links provided to MTN as specified by CCITT Recommendation G.821 or subsequent recommendations that may become relevant provided they are mutually agreed upon in writing between the Parties (i.e. M.2100 series of CCITT Recommendations).

Adherence to these standards is intended to ensure that the quality of Messages passing between the PSTN and the PLMN and between the PLMN sites is such as to afford satisfaction to the senders and recipients of those messages.

3.6 Service Levels on COFLs

3.6.1 Availability

When applying for COFLs MTN will specify one of three levels of availability i.e. 99.5%, 99.9%, or 99.95% that will be assessed over a particular Accounting Period. The availability figure will exclude failures that occur after hours if MTN does not make use of the after hours repair service referred to in clause 3.4, or when failures cannot be repaired due to a lack of access or assistance at PLMN sites. A circuit is deemed to be unavailable when there is either no data throughput for a period greater than 10 seconds or when the error ratio exceed 10^3 for more than 10 consecutive seconds. The availability figure should not be used to assess the short term quality of the COFLs.

Until such time that the availability can be measured continuously with dedicated surveillance equipment, the availability for the routes will be calculated by using the time from when a fault is reported to the Telkom ISD to when it is cleared. Only faults due to failures of Telkom equipment or Telkom working party involvement or 50% of

the outage time due to faults which are cleared as "no fault found", will be taken into account when calculating route availability.

The service level or availability will be calculated per route.

For the purpose of determining installation and rental fee discounts on COFLs and the determination of service levels on such COFLs a route is defined as a group of 2 Mbit/s systems used to connect 2 elements within the same Telecommunications Network or between 2 elements in different Telecommunications Networks notwithstanding the physical routing of the systems. Further, in the case of 1 MSC connected to multiple POIs, such POIs will be considered to be 1 element.

4.0 Transmission Fixed link Testing and Commissioning Procedures

4.1 Introduction

This is a pre-service test program to ensure that the Parties agree on the acceptable performance of the 2 MBit/s link before commissioning. The aim of this programme is to determine the pre-service test points, types of tests to be performed and the duration of the tests.

4.2 Digital Performance Parameters

The analysis outlined below has been based on CCITT Recommendations G.821, M.550, M.555 and M.557.

4.2.1 Brief outline of the analysis used.

The Error Performance Objectives used for international ISDN connections, as defined in G.821, are the performance classifications of errored seconds (ES), severely errored seconds (SES) and degraded minutes (DM).

These performance objectives are then apportioned according to the length of the link, in order to obtain the acceptable performance limits, for an international digital connection.

The M.550 Recommendation finds it more realistic to consider the error performance of a system, as independent of the length but dependent on equipment density, and recommends that the G.821 performance objectives for international paths be apportioned as detailed in 4.2.3 below.

4.2.2 G.821 Error performance Objectives for International ISDN Connections

Severely Errored Seconds (SES): 0.1%

Errored Seconds (ES): 8%

Degraded Minutes (DM): 10%

4.2.3 National Networks Apportionment

$D \leq 500 \text{ km}$	2.0%
$500 \text{ km} < D \leq 1000 \text{ km}$	3.0%
$1000 \text{ km} < D \leq 2500 \text{ km}$	4.0%
$2500 \text{ km} < D \leq 5500 \text{ km}$	6.0%
$D > 5500 \text{ km}$	8.0%

4.3 Calculation Of Error Allocation

The error performance of the path is now defined by the Reference Performance Objectives (RPO), which is the maximum permissible degradation allocation to each parameter (ES, SES, DM), over a period of one month.

For example, for a National Primary Rate Digital Path (NPRDP) of 500 km;

$$\text{RPO(ES)} = 3.0\% \times 8.0\%$$

$$\text{RPO (SES)} = 3.0\% \times 0.1\%$$

$$\text{RPO (DM)} = 3.0\% \times 10.0\%$$

To minimise maintenance intervention, M.550 recommends that an ageing margin of 0.5 is introduced into the objectives, which now gives the Bring Into Service Objectives (BISO).

$$\text{BISO} = 0.5 \times \text{RPO} \times \text{Time}$$

Where Time = duration of the test.

The Bring Into Service Objectives apply only to a monitoring period of one month or more. In many cases this is impractical. In order to monitor the performance of the system over a shorter period (e.g. 24 hours) and still be sure that the long term objectives (BISO) will be met, two threshold levels, S1 and S2, are introduced.

The values of S1 and S2 are chosen so that if the measured performance of the link over a 24 hours period is below the S1 value, then we can be 95% confident that the long term objectives for the link will be met.

If, however, the measured performance of the link over a 24 hours period is above the S2 value, then we can be 95% confident that the long term objectives will not be met.

$$S1 = BISO - 2 \text{ BISO}$$

$$S2 = BISO + 2 \text{ BISO}$$

The Bring Into service Limits (BISL) of the link are determined for shorter periods of time by;

$$BISL (ES) = BISO (ES) \times TIME \times S1$$

$$BISL (SES) = BISO (SES) \times TIME \times S1$$

$$BISL (DM) = BISO (DM) \times TIME \times S1$$

4.4 Jitter

Jitter parameters will be measured according to G.823, at a bit rate of 2 MBit/s.

The tests involved are input jitter tolerance (limits are given in Table 2 of Recommendation G.823), maximum output jitter in the absence of input jitter (limits are given in Table 1 of G.823) and the jitter transfer characteristics. All tests are done on an end to end basis.

The Jitter at all interfaces must be measured and should conform with the maximum permissible levels given in Table 1 of G. 823.

4.5 Test Duration

All 2 MBit/s ports will be tested for 24 hours. Thereafter the first 2 MBit/s tributary on a multiplexer will be tested for 24 hours to verify the basic transmission at tributary level. The other tributaries will then be tested for a much shorter duration to verify continuity and to check performance quickly.

4.6 Test Procedure

- 4.6.1 Pre-service test points will be the test and patch frame associated with Telkom equipment. The tests will be performed end to end with the equipment in a 120 ohm terminated mode using a pseudo-random sequence according to CCITT Recommendation Q.151.
- 4.6.2 Both error performance and jitter performance tests will be carried out as indicated above.
- 4.6.3 The test parameters will be according to the relevant CCITT Recommendations.
- 4.6.4 The duration of the tests will be as indicated above.
- 4.6.5 All test equipment employed will meet the relevant CCITT Recommendations.
- 4.6.6 Documentation of results.

A. INTERCONNECT FEES - NATIONAL CALLS ORIGINATING ON THE PLMN AND CONVEYED ON THE PSTN (vide 5.2.1)

Rate Group 1	Monday to Friday 07:00 - 18:00	0.21 Rands per minute
Rate Group 2	Monday to Friday 18:00 - 20:00 Saturday 07:00 - 13:00	0.14 Rands per minute
Rate Group 3	Monday to Friday 20:00 - 07:00 Saturday 00:00 - 07:00 Saturday 13:00 - Monday 07:00	0.10 Rands per minute

B. DISCOUNTS ON INTERCONNECT FEES (NATIONAL CALLS) (vide 5.2.5)

Total annual amount payable to Telkom by MTN (calculated from 1 June 1994) for National, International, TBVC and Community Service Calls	Discount on Interconnect Fees referred to in 5.2.1 of main body of Agreement
R0 - 7,5 Million	0%
R7,5 Million - R 15 Million	2,5%
R15 Million - R30 Million	5%
R30 Million - R40 Million	10%
R40 Million +	12,5%

C. INTERCONNECT FEES FOR THE CONVEYANCE BY TELKOM OF INTERNATIONAL CALLS ORIGINATING ON THE PLMN (vide 5.3. 1)

Interconnect fee per minute =

$$\text{Telkom Unit Charge} \times 0.83 \times \frac{60}{\text{Duration in seconds of metering period at applicable International rate}}$$

D. INTERCONNECT FEES FOR THE CONVEYANCE OF INTERNATIONAL CALLS DESTINED FOR THE PLMN (vide 5.3.2)

Interconnect fee per minute = R0,21

LINK CHARGES		PERMANENT SERVICES				TEMPORARY SERVICES			
Type of Link	Radial distance (km)	2 Mbit/s Excluding VAT		2 Mbit/S Including VAT		2 Mbit/s Excluding VAT		2 Mbit/s Including VAT	
		Installation Charge	Monthly Rental	Installation Charge	Monthly Rental	Installation Charge	Hourly Rental	Installation Charge	Hourly Rental
		R	R	R	R	R	R	R	R
<u>Local Ends</u> (within MRA) between premises and exchange A Tariff	FlatRate	16 294,00	1 299,00	18 575,16	1 480,86	20 367,00	2,22	23 218,38	2,53
<u>Inter-premises connections</u> between two premises or between premises and foreign exchange B Tariff	Oto20	16 294,00	1 515,00	18 575,16	1 727,10	20 367,00	2,59	23 218,38	2,95
	-> 20 to 30	^M	2 043,00		2 329,02	^M	3,50	•	3,99
	> 30 to 40	ⁿ	3 077,00	"	3 507,78	^M	5,27	•	6,01
	> 40 to 50	ⁿ	3 275,00	ⁿ	3 733,50	^N	5,61	^M	6,40
	>50to100	ⁿ	5 005,00	»	5 705,70	^M	8,57	-	9,77
Main Links between end exchanges C Tariff.		Monthly Fixed Cost	Monthly Rental per km	Monthly Fixed Cost	Monthly Rental per km	-	Hourly Rental per km	-	Hourly Rental per km
	0-50	480,00	90,50	547,20	103,17		0,27		0,308
	>50-200	3 104,76	37,99	3 539,43	43,31	-	0,15	-	0,171
	>200-400	7 201,11	17,51	8 209,27	19,96	-	0,10	-	0,114
	>400	10 492,30	9,28	11 961,22	10,58	-	0,07	-	0,08

2. Discounts on the C tariff referred to in this Appendix 7.

NUMBER OF 2 MBIT/S COFLS PER ROUTE	DISCOUNT ON RENTAL(SERVICE LEVEL GREATER THAN 99,95%)
1	0%
2 - 4	7,5%
5- 10	10%
11 - 16	12,5%

For the purpose of determining installation and rental fee discounts on COFLs and the determination of service levels on such COFLs a route is defined as a group of 2 MBit/s systems used to connect 2 elements within the same network or between 2 elements in different networks notwithstanding the physical routing of the systems. Further, in the case of 1 MSC connected to multiple POIs, such POIs will be considered to be 1 element.

and B tariff for those links which terminate on an alternate exchange as these links will cross exchange boundaries.

4. COFL G703 interfaces will be provided up to MTN's indicated distribution frame at no further charges than those indicated in the schedule, provided that all ducting should be done by MTN.

Interconnect Agreement Amendment No: 1

AMENDMENT AGREEMENT NO 1

ENTERED INTO BETWEEN

TELKOM SA LIMITED
("TELKOM")

and

MOBILE TELEPHONE NETWORKS (PROPRIETARY) LIMITED
("MTN")

and

VODACOM (PROPRIETARY) LIMITED
("VODACOM")

(jointly "the Parties")

The Parties hereby agree to amend the interconnection Agreement entered into on the one hand between Telkom and MTN ("the MTN Interconnection Agreement") and the Interconnection Agreement on the other hand between Telkom and Vodacom ("the Vodacom Interconnection Agreement") both on 16 February 1994 (jointly "the Interconnection Agreements") as follows:

- 1 By the substitution of the words "Vodacom Group (Pty) Ltd" wherever it appears in the Interconnection Agreements with "Vodacom (Pty) Ltd".
- 2 By the deletion of clause 7 in the Table of Contents of the Interconnection Agreements and the substitution thereof with the following:

"7. Exclusivity and service levels"
- 3 By the deletion of the heading to clause 7 in the main body of the Interconnection Agreements and the substitution thereof with the following:

"7. Exclusivity and service levels"
- 4 By the deletion of clause 7.2 in the Interconnection Agreements and the substitution thereof with the following:

4.1 In The MTN Interconnection Agreement:

- 4.1.1 "7.2 Where Telkom does provide Fixed Links to MTN pursuant to this Part II of the Agreement, then the Link Charges payable by MTN to Telkom in respect thereof will be as provided for in 10, such Fixed Links shall then be referred to as COFLs and the principles, procedures and conditions in respect of the service levels pertaining to COFLs as set out in Appendix 8 shall apply."

4.2 In the Vodacom Interconnection Agreement:

- 4.2.1 "7.2 Where Telkom does provide Fixed Links to Vodacom pursuant to this Part II of the Agreement, then the Link Charges payable by Vodacom to Telkom in respect thereof will be as provided for in 10, such Fixed Links shall then be referred to as COFLs and the principles, procedures and conditions in respect of the service levels pertaining to COFLs as set out in Appendix 8 shall apply."

- 5 By the insertion of the words "and Surcharges" after the word "Charges" in line 4 of clause 10.1 of the Interconnection Agreements.

- 6 By the insertion of the words "and Surcharges" after the words "installation charges" in line 1 of clause 10.4.1 of the Interconnection Agreements.

- 7 By the deletion of clause 11.6 in the Interconnection Agreements in its entirety.

- 8 By the deletion of clause 4.2.1 of Appendix 2 to the Interconnection Agreements in its entirety and the substitution thereof with the following:

"The provisions of Appendix 8 shall apply to POILs".

- 9 By the deletion of clause 2.4 in the Contents of Appendix 4 to each of the Interconnection Agreements in its entirety and the substitution thereof with:

"2.4 SECURITY REQUIREMENTS."

- 10 By the deletion of the heading to clause 2.4 of Appendix 4 to the Interconnection Agreements and the substitution thereof with the following:

"2.4 Security Requirements."


- 11 By the deletion of the second and third paragraphs under clause 2.4 of Appendix 4 to the Interconnection Agreements, such clauses starting with the words "Telkom undertakes that the...." and ending with the words "..... discussed between the Parties."

- 12 By the deletion of clauses 3.1, 3.2, 3.3 and 3.4 of Appendix 5 to the Interconnection Agreements in their entirety.
- 13 By the deletion of clause 3.6 of Appendix 5 to the Interconnection Agreements in its entirety.
- 14 By the deletion of Appendix 7 to the Interconnection Agreements in its entirety.
- 15 By the annexure to each of the Interconnection Agreements of a new Appendix 7 which is annexed to this Amendment Agreement No 1, marked "A" in the case of the MTN Interconnection Agreement and "B" in the case of the Vodacom Interconnection Agreement, and initiated by the Parties.
- 16 By the annexure to each of the Interconnection Agreements of a new Appendix 8 which is annexed to this Amendment Agreement No 1, marked "C" in the case of the MTN Interconnection Agreement and "D" in the case of the Vodacom Interconnection Agreement, and initialled by the Parties.

The Parties agree that this Amendment Agreement No 1 will enter into force on the 1st day of the calendar month after the month in which the Postmaster General approves this Amendment Agreement No 1.

SIGNED AT Pretoria ON THIS **22nd** DAY OF *August* 1995

AS WITNESSES:


1 
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.....


.....
for TELKOM SA LIMITED

2

SIGNED AT PRETORIA ON THIS 21st DAY OF AUGUST 1996

AS WITNESSES:

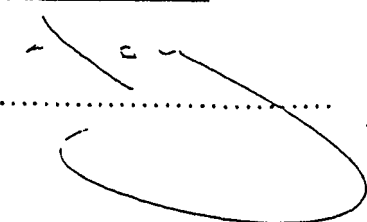
1 
.....


.....
for MOBILE-TELEPHONE NETWORK
(PROPRIETARY) LIMITED

2

SIGNED AT PRETORIA ON THIS 21st DAY OF AUGUST 1996

AS WITNESSES:

1 
.....


.....
for VODACOM
(PROPRIETARY) LIMITED

2

TARIFFS, DISCOUNTS AND SURCHARGES FOR COFLs

CONTENTS

1. LINK CHARGES
2. DISCOUNTS AND SURCHARGES ON LINK CHARGES
3. EXPLANATORY NOTES ON COFL TARIFFS

TARIFFS, DISCOUNTS AND SURCHARGES FOR COFLs

1. LINK CHARGES

1.1 Permanent services

Type of link	Radial distance (km)	2 Mbit/s R Excluding VAT		2 Mbit/s R Including VAT	
		Installation Charge	Monthly Rental	Installation Charge	Monthly Rental
<u>Local ends</u> (within MRA) between premises and exchange A Tariff	Flat Rate	16 294.00	1 293.00	16 575.15	1 450.55
<u>Inter-premises connections</u> between two premises or between premises and foreign exchanges B Tariff	0 to 20	16 294.00	1 515.00	16 575.15	1 727.10
	> 20 to 30	16 294.00	2 043.00	16 575.15	2 329.02
	> 30 to 40	16 294.00	3 077.00	16 575.15	3 507.78
	> 40 to 50	16 294.00	3 275.00	16 575.15	3 733.50
	> 50 to 100	16 294.00	5 005.00	16 575.15	5 705.70
<u>Main links</u> between end exchanges C Tariff	Radial distance (km)	Monthly Fixed Cost	Monthly Rental per km	Monthly Fixed Cost	Monthly Rental per km
	0 to 50	480.00	50.50	547.20	103.17
	> 50 to 200	3 104.75	37.59	3 539.43	43.31
	> 200 to 400	7 201.11	17.51	8 209.27	19.95
	> 400	10 492.30	9.25	11 961.22	10.59

1.2 Temporary services

Type of link	Radial distance (km)	2 Mbit/s R Excluding VAT		2 Mbit/s R Including VAT	
		Installation Charge	Hourly Rental	Installation Charge	Hourly Rental
<u>Local ends</u> (within MRA) between premises and exchange A Tariff	Flat Rate	20 357.00	2.22	23 218.38	2.53
<u>Inter-premises connections</u> between two premises or between premises and foreign exchanges B Tariff	0 to 20	20 357.00	3.59	23 218.38	3.95
	> 20 to 30	20 357.00	3.50	23 218.38	3.99
	> 30 to 40	20 357.00	5.27	23 218.38	6.01
	> 40 to 50	20 357.00	5.51	23 218.38	6.40
	> 50 to 100	20 357.00	9.57	23 218.38	9.77
<u>Main links</u> between end exchanges C Tariff	Radial distance (km)	Hourly Fixed Cost	Hourly Rental per km	Hourly Fixed Cost	Hourly Rental per km
	0 to 50	.	0.27	.	0.302
	> 50 to 200	.	0.15	.	0.171
	> 200 to 400	.	0.10	.	0.114
	> 400	.	0.07	.	0.08

2. DISCOUNTS AND SURCHARGES ON THE LINK CHARGES

2.1 Discounts on the A and B Tariffs referred to in clause 1 hereof

NUMBER OF 2 MBIT/S COFLS PER ROUTE	DISCOUNT ON INSTALLATION CHARGE
1ST COFL	0%
2ND, 3RD AND 4TH COFL	25%
5TH AND SUBSEQUENT TO 64TH COFLS	30%

NUMBER OF 2 MBIT/S COFLS PER ROUTE	DISCOUNTS ON RENTALBASED ON SERVICE LEVEL OF 99.3%	DISCOUNTS ON RENTALBASED ON SERVICE LEVEL OF 99.5%	DISCOUNTS ON RENTALBASED ON SERVICE LEVEL OF 99.9%	DISCOUNTS ON RENTALBASED ON SERVICE LEVEL OF 99.95%
1	5%	0%	0%	0%
2 - 4	10%	7.5%	0%	0%
5 - 16	12.5%	10%	2.5%	0%
17 - 64	15%	12.5%	5%	0%

2.2 Discounts on the C tariff referred to in clause 1 hereof

NUMBER OF 2 MBIT/S COFLS PER ROUTE	DISCOUNT ON RENTAL BASED ON SERVICE LEVEL OF 99.95%
1	0%
2 - 4	7.5%
5 - 10	10%
11 - 16	12.5%

2.3 Surcharges on the A and B tariffs referred to in clause 1 hereof

NUMBER OF 2 MBIT/S COFLS PER ROUTE	SURCHARGE ON INSTALLATION BASED ON SERVICE LEVEL OF 99.3%	SURCHARGE ON INSTALLATION BASED ON SERVICE LEVEL OF 99.5%	SURCHARGE ON INSTALLATION BASED ON SERVICE LEVEL OF 99.9%	SURCHARGE ON INSTALLATION BASED ON SERVICE LEVEL OF 99.95%
1ST COFL	0%	0%	75%	75%
2ND, 3RD AND 4TH COFL	0%	0%	0%	0%
5TH AND SUBSEQUENT TO 64TH COFLS	0%	0%	0%	0%

NUMBER OF 2 MBIT/S COFLS PER ROUTE	SURCHARGE ON RENTAL BASED ON SERVICE LEVEL OF 99.3%	SURCHARGE ON RENTAL BASED ON SERVICE LEVEL OF 99.5%	SURCHARGE ON RENTAL BASED ON SERVICE LEVEL OF 99.9%	SURCHARGE ON RENTAL BASED ON SERVICE LEVEL OF 99.95%
1	0%	0%	75%	75%
2 -4	0%	0%	0%	0%
5 -16	0%	0%	0%	0%
17 -64	0%	0%	0%	0%

2.4 Surcharges on The C Tariff referred to in clause 1 hereof

NUMBER OF 2 MBIT/S COFLS PER ROUTE	SURCHARGE ON RENTAL FOR SERVICE LEVELS 99.3% AND 99.5%	SURCHARGE ON RENTAL FOR SERVICE LEVELS 99.9% AND 99.95%
1	0%	75%
2 - 4	0%	0%
5 -10	0%	0%
11 -16	0%	0%

- 2.5 For the purpose of determining installation and rental fee discounts on COFLs and the determination of service levels on such COFLs a route is defined as a group of 2 Mbit/s systems used to connect 2 elements within the same network or between 2 elements in different networks notwithstanding the physical routing of the systems. Further, in the case of 1 MSC connected to multiple POIs, such POIs will be considered to be 1 element.

3. EXPLANATORY NOTES ON COFL TARIFFS

3.1 General

The rules and tariffs in this explanatory note to Appendix 7 are only applicable to COFLs.

3.2 COFLs between base stations and Base Station Controllers as well as Base Station Controllers and the MSC's:

3.2.1 Where base stations and base station controllers are connected to one another and are within 100 km of one another, then the B tariff will be applied. The same tariffing procedure shall apply to COFLs between base station controllers and MSC's within 100 km of one another.

3.2.2 Where base stations and base station controllers are connected to one another and the distance is greater than 100 km from one another, the A tariff will apply to the COFLs between the base stations/base station

controllers and their nearest Telkom switching exchanges, as well as the C tariff for the radial distance between the two Telkom switching exchanges. The same tariffing procedure shall apply to COFLs between base station controllers and MSC's where the distance is greater than 100 km from one another.

- 3.2.3 Where a daisy chain network is provided with up to four base stations and each base station in the chain is within 100 km of the next base station, then the B tariff will be applied. If there are base stations in the chain further than 100 km from one another, then the A tariff will apply to the COFLs between the base stations and their nearest Telkom switching exchanges, as well as the C tariff for the radial distance between the two Telkom switching exchanges. If the last base station in the chain is within 100 km of the base station controller or MSC, then the B tariff will be applied. If the last base station in the chain is further than 100 km from the base station controller or MSC, then the A tariff will apply to the links between the base station controller/MSC and their nearest Telkom switching exchanges, as well as the C tariff for the radial distance between the two Telkom switching exchanges.
- 3.2.4 Where the base station/base station controller/MSC equipment is situated on a Telkom switching exchange site and the A tariff and the C tariff are applied to a specific route, the local end tariff (A tariff) will be waived for that specific site, provided that Vodacom provides the cable needed for the connection to the transmission equipment.
- 3.3 COFLs between MSC's and Telkom exchanges for interconnection to the PSTN
 - 3.3.1 The COFLs required by Vodacom for interconnection to the PSTN (closest trunk exchange) from their MSC's will be split at Telkom's discretion between various trunk exchanges for security routing as well as for better traffic loading of the various trunk exchanges. Vodacom will be charged the A tariff for these COFLs.
 - 3.3.2 Where Vodacom requires COFLs for interconnection to the PSTN at distant trunk exchanges (e.g. Pietersburg) then Vodacom will be charged the tariff from its MSC to the nearest Telkom switching exchange, as well as the C tariff for the radial distance between the Telkom switching exchange and the distant trunk exchange.
 - 3.3.3 Where the MSC equipment is situated on a Telkom switching exchange site and COFLs are required by Vodacom for interconnection to the PSTN (closest trunk exchange), these COFLs will be split at Telkom's discretion between various trunk exchanges for security routing as well as for better traffic loading of the various trunk exchanges. Vodacom will be charged the A tariff for these COFLs except for those COFLs that terminate on a trunk exchange on the same site as the MSC where the A tariff is waived in which case the cable needed for the connection to the transmission systems or exchange part should be provided by Vodacom.

- 3.3.4 Where Vodacom requires links for interconnection to the PSTN and request physical redundancy by alternate exchanges, then Vodacom will be charged the A tariff for those links which terminate on the closest trunk exchange and B tariff for those links which terminate on an alternate exchange as these links will cross exchange boundaries.
- 3.4 COFL G703 Interfaces will be provided up to Vodacom's indicated distribution frame at no further charges than those Indicated in the schedule, provided that all ducting should be done by Vodacom.

PRINCIPLES, PROCEDURES AND CONDITIONS IN RESPECT OF SERVICE LEVELS
FOR CELLULAR OPERATOR FIXED LINKS (COFLs)

CONTENTS

1. INTRODUCTION
2. DEFINITIONS
3. SERVICE LEVELS
4. MINIMUM CONFIGURATION FOR COFLs
5. MEASUREMENT OF SERVICE LEVELS
6. PENALTIES AND INCENTIVES
7. FAULT HANDLING AND RECTIFICATION PROCEDURES
8. TELKOM INTERCONNECT SERVICE DESK (ISD)
9. TARIFFS, DISCOUNTS AND SURCHARGES FOR COFLs

PRINCIPLES, PROCEDURES AND CONDITIONS IN RESPECT OF SERVICE LEVELS FOR CELLULAR OPERATOR FIXED LINKS (COFLs)

1. INTRODUCTION

The Licence stipulates that Vodacom shall provide the Service at an availability of at least 95% of the time. For Vodacom to meet this requirement, it is necessary that COFLs be supplied and maintained at certain Service Levels ("the Service Level/s"). This Appendix therefore addresses the principles, procedures and conditions in respect thereof. Each Party undertakes to ensure that its own staff adhere to the agreed principles, procedures and conditions laid down in this Appendix. No provision of this Appendix shall in any way effect any of either party's rights it has or may have by virtue of the provisions of the Agreement or the Multiparty Implementation Agreement.

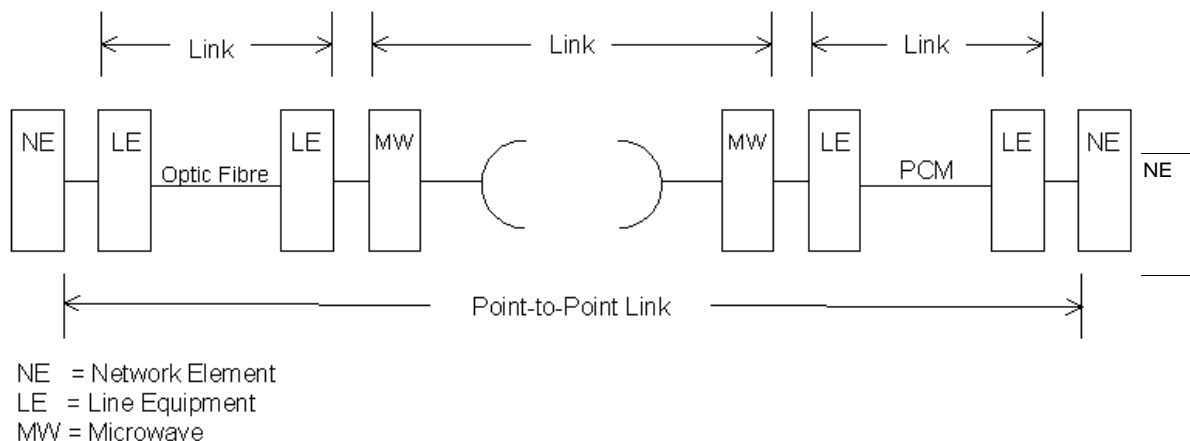
2. DEFINITIONS

2.1 Cellular Operator Fixed Link (COFL)

A COFL (as defined in the Agreement) may consist of one or more point-to-point links.

2.2 "Point-to-Point Link

A point-to-point link is a point-to-point connection between 2 elements within the same network or between 2 elements in different networks with a transmission speed of at least 2 MBit/s.



2.3 Network Element (NE)

A Network Element is the equipment associated with the termination of a COFL, i.e. Telkom exchange, Vodacom Base Station, Vodacom MSC, etc.

2.4 Fault

A Fault is an incident that will effect the availability of a COFL as specified in clause 5.9 hereof.

3. SERVICE LEVELS

- 3.1 Telkom and Vodacom agree that the following Service Levels will be available for permanent service and temporary service COFLs requested by Vodacom

3.1.1 Permanent Services

99.95%
99.90%
99.50%
99.30%

3.1.2 Temporary Services (as provided for in clause 11.4 of the Agreement)

99.50%
99.30%

- 3.2 The provision of COFLs at a specific Service Level is dependent on the minimum configurations specified in clause 4 below.
- 3.3 Service Levels are only applicable to COFLs that have undergone proper acceptance testing to the satisfaction of both Parties as determined in clause 4 of Appendix 5. Existing COFLs will on the date that this Appendix enters into force be deemed to have been properly tested and accepted.
- 3.4 If difficulties arise due to travelling time from maintenance centres to Network Elements, Telkom may determine that a Service Level of 99.3% shall apply. Vodacom may either accept or reject such determination. If rejected, a Service Level of 99.5% shall apply. The agreement reached between the Parties with regard to the application of a 99.3% Service Level shall be in writing.
- 3.5 If Vodacom requests existing single COFLs with a Service Level of 99.50% to be upgraded to a Service Level of 99.95% or 99.9%, the installation times for the additional equipment (links and/or protection switches as applicable), will be increased from 90 days, as applicable in the Agreement, to 120 days unless the Parties agree otherwise in writing. If Telkom finds that it is not feasible to install the additional equipment, Telkom will offer a Service Level of 99.5%, provided that Telkom shall use its best endeavours to provide the higher Service Level as requested. The agreement reached between the Parties with regard to the installation times and Service Level shall be in writing.
- 3.6 If Vodacom requests new single COFLs at a Service Level of 99.95% or 99.9% and Telkom finds that it is not feasible to install the additional equipment (links and/or protection switches as applicable), Telkom will offer a Service Level of 99.5%, provided that Telkom shall use its best endeavours to provide the higher Service Level as requested. The agreement, reached between the Parties with regard to the Service Level shall be in writing.

- 3.7 If Telkom finds that it is not feasible to provide the link referred to in paragraphs 3.5 and 3.6 above at the service level requested by Vodacom, and Vodacom does not accept the offer of a service level of 99.5%, Telkom shall within 5 Business Days of receiving such notice from Vodacom of Vodacom's failure to agree, forward to Vodacom in writing a notice of its unwillingness to provide the requested service level or, alternatively state the conditions under which it would be so willing. Such conditions shall constitute an offer, which Vodacom shall then be entitled to either accept or reject within 10 Business Days.

4. MINIMUM CONFIGURATIONS FOR COFLs

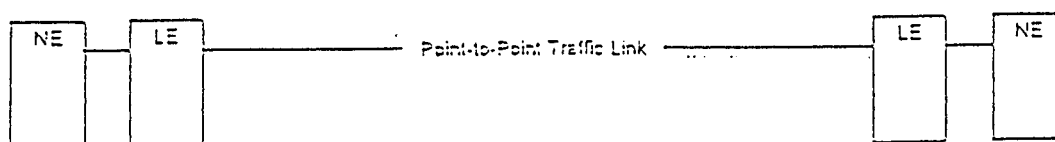
LE = Telkom Line Equipment

NE = Network Element

PSE = Automatic 2 MBit/s Protection Switching Equipment

4.1 Configuration for a Service Level of 99.5% and 99.3%

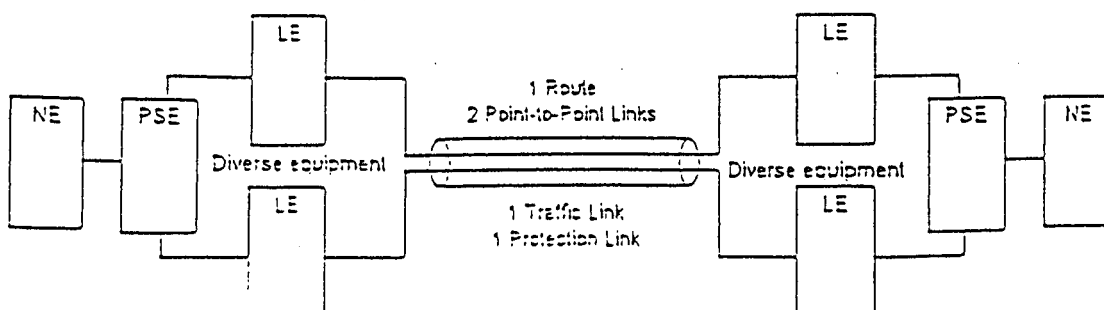
For a COFL ordered by Vodacom at a Service Level of 99.5% or 99.3%, Telkom shall not be obliged to provide diversity in any form (equipment or route) between two network elements.



No of COFLs	No of routes	No of point-to-point links
1	1	1
2-4	1	2-4
5-16	1	5-16
17-64	1	17-64

4.2 Configuration for a Service Level of 99.9%

For COFLs ordered by Vodacom at a Service Level of 99.9%, Telkom shall provide at least 2 point-to-point links with no route diversity, but with automatic protection switching equipment and with transmission equipment diversity. This configuration is only applicable where spare cable i.e. optic fibre or copper is already available along the route.



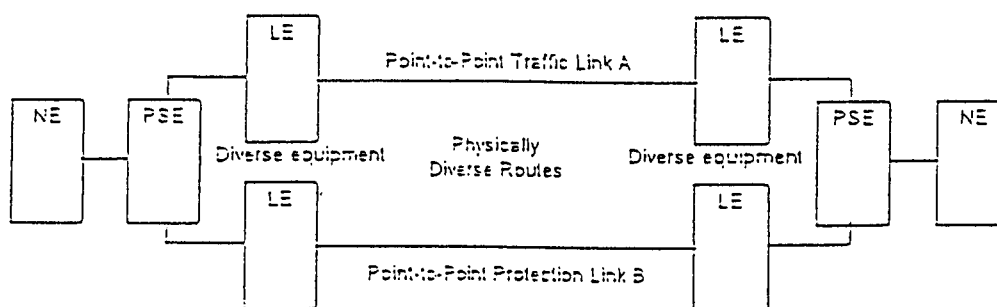
No of COFLs	No of routes	No of point-to-point links	Protection arrangement
1	1	2	(1÷1)
2-3	1	3-4	(N÷1)
4-14	1	5-15	(N÷2)
15-62	1	17-54	(N÷2)

N = Number of point-to-point traffic carrying links.

4.3 Configuration for a Service Level of 99.95%

For a COFL ordered by Vodacom at a Service Level of 99.95%, Telkom shall provide at least 2 point-to-point links over 2 physically diverse routes with transmission equipment diversity and automatic protection switching equipment.

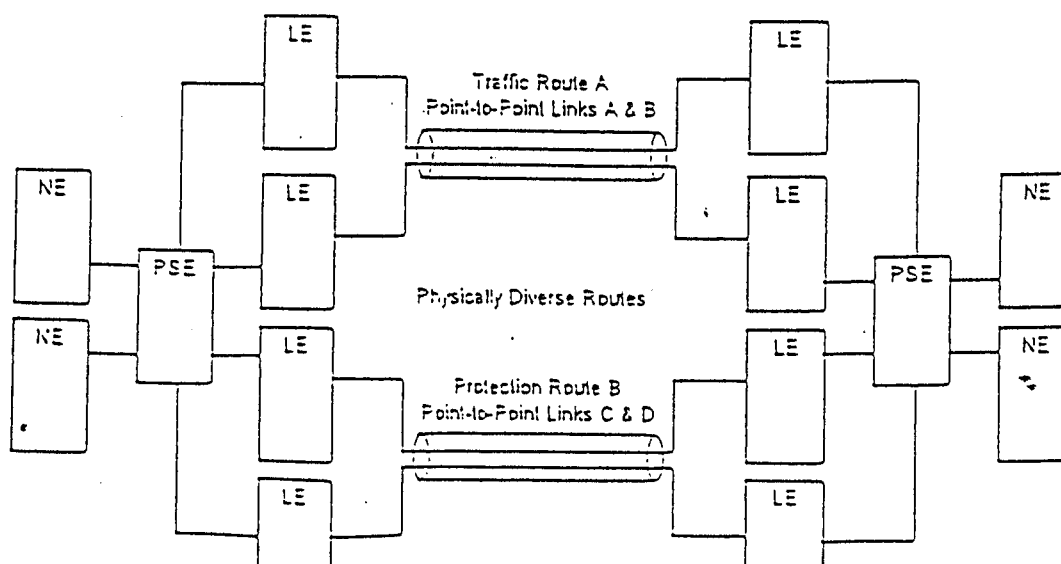
4.3.1 Single COFL



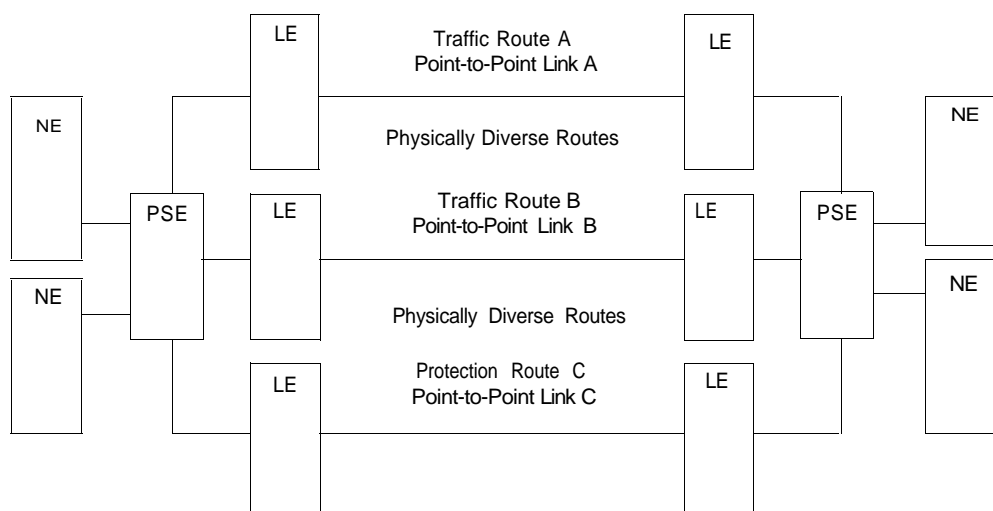
4.3.2 Two or more COFLs

The configuration depends on the number of physically diverse routes available. A maximum of 3 physically diverse routes per group of COFLs will be provided to keep the configuration manageable. The choice between 2 or 3 physically diverse routes is a trade off between transmission equipment and spectrum. The optimum cost solution, as determined by Telkom, will be used.

a) Two physically diverse routes



b) Three physically diverse routes



No of COFLs	No of routes	No of point-to-point links	Protection arrangement
1	2	2	$(1 \div 1)$
2	2	4	$(1 \div 1)$
2-5	2	6-10	$(1 \div 1)$
5-15	2	12-32	$(1 \div 1)$
2	3	3	$(N \div 1)$
3-4	3	5-6	$(N \div 2)$
5-6	3	8-9	$(N \div 3)$
7-8	3	11-12	$(N \div 4)$
9-10	3	14-15	$(N \div 5)$
11-12	3	17-18	$(N \div 6)$
13-14	3	20-22	$(N \div 7)$
15-16	3	23-24	$(N \div 8)$

N = Number of point-to-point traffic carrying links.

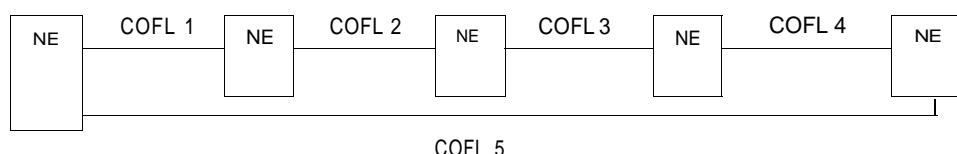
4.4 Route Switching in Vodacom Equipment

If Vodacom decides to have route switching in its own equipment on 99.95% Service Level COFLs to save on point-to-point links between two Network Elements, Telkom will remove/not install its protection switching equipment. Telkom will still provide the COFLs over 2 or 3 physically diverse routes as detailed in clause 4.3 hereof and Vodacom shall not transmit more than 100 % of the traffic capacity of the COFLs over the COFLs as ordered in accordance with the table in clause 4.3 hereof. The Service Level of the individual point-to-point links in the COFLs will be 99.5%. The tariffs for the COFLs will still be charged at a Service Level of 99.95% but Vodacom will receive a further discount of 5% on the monthly rental for the COFLs in this case.

4.5 Daisy Chains

Each of the COFLs connecting the Network Elements in a Daisy Chain configuration shall be considered to have a Service Level of 99.5%, unless a Service Level of 99.9% or 99.95% is specifically requested for a specific COFL in the Daisy Chain, in which event the specified Service Level shall apply

to that particular COFL only. Each COFL in the Daisy Chain must be provided over diverse routes and diverse equipment from every other COFL in the Daisy Chain, for reliability purposes. Any deviation from this rule must be negotiated and agreed to in writing between the Parties.



5. MEASUREMENT OF SERVICE LEVELS

- 5.1 Until such time as the availability can be measured continuously with dedicated surveillance equipment, the measurement of Service Levels will be based on the manual method of logging all reported Faults at the Telkom ISD.
- 5.2 The Service Level of COFLs will be measured in terms of the availability of each individual COFL and will be assessed separately for each calendar month.
- 5.3 The Service Level will be measured per COFL irrespective of the number of links used to provide the COFL.
- 5.4 The first period of assessment of a newly installed COFL shall commence on the first day of the calendar month in which the link is installed.
- 5.5 The last period of assessment of a COFL cancelled by Vodacom shall end on the last day of the last full calendar month during which such link effectively, ceases to be in service.
- 5.6 When a COFL has been upgraded to a higher service level, the availability of such COFL shall continue to be measured in accordance with its former service level until the last day of the calendar month during which such COFL was upgraded and be measured in accordance with its new service level as from the first day of the calendar month following such upgrade.
- 5.7 When a COFL has been downgraded to a lower service level, the availability of such COFL shall be measured in accordance with its new service level as from the first day of the calendar month during which such COFL was downgraded.
- 5.8 Where a number of COFLs are affected by the same Fault, the unavailable time will be recorded against each individual COFL.
- 5.9 Service Levels will be measured at both Vodacom's and Telkom's ISD by logging unavailable time for each COFL on a monthly basis per calendar month. These figures will be reconciled weekly. A COFL is deemed to be unavailable when there is either no data throughput for a period greater than 10 seconds or when the error ratio exceeds 10^3 for more than 10 consecutive seconds.

5. 10 Unavailable time is defined as the time from when a Fault is reported to Telkom's ISD to the time when the service is restored, either by repair of the COFL or patching to an alternate link/s, and the Vodacom ISD has been notified that the service has been restored.

For example, if a COFL had two outages of 60 and 15 minutes respectively reported during a given month, the availability or Service Level for that month is calculated as:

$$\begin{aligned}
 \text{Availability} &= [1 \text{ minus (total outage time in minutes divided by total} \\
 &\quad \text{minutes in a month)}] \text{ multiplied by } 100 \\
 &= [1 - (75 \div (30 \times 24 \times 60))] \times 100 \\
 &= 99.83\%
 \end{aligned}$$

For practical purposes, all calculations will be based on a 30 day month, irrespective of the actual number of days in a particular calendar month i.e.

$$\text{Total minutes in month} = 30 \times 24 \times 60 = 43\,200.$$

- 5.11 Allowable outage times per month for the Service Levels are therefore specified as follows:

Service Level	Allowable outage time per month
99.95%	21.6 minutes per month
99.90%	43.2 minutes per month
99.50%	216.0 minutes per month
99.30%	302.4 minutes per month

- 5.12 The availability figure will exclude the following times:

- Elapsed time from when the Fault is reported to the Telkom ISD after hours until the start of the following Business Day if Vodacom elects not to make use of Telkom's after hours repair service.
- The time lost in the case where repairs are started during normal hours, stopped after hours and resumed the following Business Day with the consent of Vodacom.
- The time lost when failures cannot be repaired due to a lack of access to Vodacom sites and/or lack of assistance from Vodacom.
- The time lost due to Vodacom's ISD not being available to receive a Fault clear report.
- The time lost due to planned outages (scheduled maintenance) as provided for in clause 3.1.1.2 of Appendix 3 as well as planned outages due to the relocation of COFLs on the same premises. Where the planned outage time exceeds the agreed time frames, the extra time will be regarded as outage time to be added to the unavailability time of a COFL unless Vodacom's ISD agrees to the extension of the planned outage time. Where a planned outage time is requested less than 14 days before the planned outage (unscheduled maintenance), the outage time will be added to the unavailability time of a COFL unless the Vodacom's ISD agrees to this short notice planned outage.

5.13 Only Faults due to failures of Telkom equipment or Telkom working party involvement or 50% of the outage time due to Faults cleared as "no Fault found", will be taken into account when calculating individual COFL availability.

5.14 Clause 21 of the Agreement (Force Majeure) will be applicable to the repair of Faults and the measurement of Service Levels.

6. PENALTIES AND INCENTIVES

6.1 Telkom will pay Vodacom a monthly penalty per COFL, as determined with reference to the Table in clause 6.3 below, when the COFL's average availability over a calendar month is below the agreed Service Level for that COFL. The penalty is limited to a maximum of 100% of the monthly rental for that COFL. The basic principle being that penalties may not exceed the actual amount received by Telkom in payment for each COFL.

6.2 Vodacom will pay Telkom a monthly incentive per COFL, as determined with reference to the Table in clause 6.3 below, when the COFL's average availability over a calendar month is above the agreed Service Level for that COFL. The total monthly incentive for all COFLs leased by Vodacom is limited to 100% of the total monthly penalties for all COFLs leased by Vodacom and no accumulation of penalties/incentives will take place from one month to the next.

6.3 The following penalties/incentives per COFL will be payable by the Parties when a COFL's average availability over a calendar month is below/above the agreed Service Level for that COFL:

Service level	Penalty per minute when below Service Level	Incentive per minute when above Service Level
99.95%	R20.00	R2.22
99.9%	R12.50	R1.38
99.5%	R 5.00	R0.40
99.3%	R 5.00	R0.275

7. FAULT HANDLING AND RECTIFICATION PROCEDURES

7.1 Reporting of Fault

All Faults relating to COFLs shall be reported to Telkom's ISD as described in Appendix 3. The Telkom ISD will report Faults relating to the Telkom network to the relevant maintenance sections of Telkom according to internal fault reporting procedures.

Only Faults in the Telkom network may be reported to the Telkom ISD. Where reported Faults are proven by Telkom to be in the PLMN, a Fault location fee of R150.00 will be charged by Telkom. Where Faults are referred back to

Vodacom by Telkom, but proven to be in the Telkom network, a fee of R150.00 will be charged by Vodacom.

7.2 After Hours Repair Service

After hours Fault reports will also be handled by the ISD. An additional fee of R640.00, provided that Vodacom accepts the charge on each occasion, will be charged for after-hours repairs. Only one after hours call-out fee, regardless of the number of Telkom personnel involved, will be charged per single Fault reported to the Telkom ISD after hours.

The after hours repair service will be rendered during the following hours:

Mondays to Thursday's	from 17:00 until 07:30 the next day.
Weekends	from Fridays 16:30 until 07:30 on Mondays.
Public holidays	from 17:00 on the preceding Business Day until 07:30 on the next Business Day.

7.3 Recurring Faults

For the purpose of this Appendix, a Recurring Fault is defined as an instance where 3 Faults are reported on the same COFL within a sliding period of 3 months. In the case of a Recurring Fault, Telkom will take all reasonable measures to find and clear the Fault by means of special investigations with the view to repair, re-route or provide a temporary alternate link, if possible, to improve the quality of service. Telkom will report back to Vodacom within 24 hours of a Fault being identified as a Recurring Fault and provide information on the possible cause of the Fault and the remedial action that is being planned.

7.4 Access to Vodacom Sites Housing Transmission Line Terminating Equipment

When Faults on the COFLs at Vodacom sites are reported, Vodacom shall provide access and/or assistance to Telkom maintenance personnel at these sites during testing and repair of the Fault.

7.5 General Escalation Procedure

A general escalation procedure, a copy of which shall be furnished by both Parties upon request, will be established for all operation and maintenance activities and will contain contact telephone numbers that will be updated as and when changes occur.

7.6 Escalation Procedures within Telkom

7.6.1 A COFL with a Service Level of 99.95%, which is unavailable for longer than 60 minutes, will be classified as a catastrophic failure and escalated to the area manager: network business unit. A COFL with a Service Level of 99.95%, which is unavailable for longer than 216

minutes, will be escalated to the executive: delivery (network business unit).

7.6.2 The above escalation procedure will also apply to COFLs with Service Levels of 99.5% when:

- a) an upgrade of a single COFL from 93.5% to 99.95% is not achieved by Telkom within 120 days after the receipt of an official request from Vodacom for such an upgrade, or when both Parties agree that it is not feasible to install the additional equipment, as provided for in clause 3.5 hereof.
- b) both Parties agree that it is not feasible to install the additional equipment for a new single 99.95% COFL, as provided for in clause 3.6 hereof.

8. TELKOM INTERCONNECTION SERVICE DESK (ISD)

8.1 This clause expands the responsibilities of the Telkom ISD, as defined in, clause 2.1 of Appendix 3, in order to facilitate the accurate recording of availability and to provide efficient Fault restoration.

8.2 Functions of the Telkom ISD

- 8.2.1 Receive Fault reports from Vodacom, either directly or via nominated Fault report points.
- 8.2.2 Issue a unique reference number to Vodacom when a Fault is reported.
- 8.2.3 Direct the localising of Faults.
- 8.2.4 Control the return to service of COFLs after Fault clearance, routine maintenance etc.
- 8.2.5 Be familiar with the re-routing possibilities of any COFL under its control.
- 8.2.6 Advise Vodacom (or ensure it is done) of the progress of Fault clearance where appropriate i.e. in the case of lengthy outages.
- 8.2.7 Advise Vodacom when the Fault has been rectified.
- 8.2.8 Keep accurate records of COFL outages. Records should include (in addition to information necessary for availability assessment), but not be limited to:
 - a) Name of Vodacom representative who reported the Fault.
 - b) Unique reference number.
 - c) Vodacom's description of the problem.
 - d) Date and time of all incidents/actions related to a Fault.

- e) Estimated time to repair.
- f) Priority of the problem.
- g) End-to end COFL reference,
- h) COFL outage time.
- i) Location of the Fault,
- j) Nature of the Fault.

8.2.9 Supply Vodacom with weekly Fault reports specifying the minimum details as required in clause 8.2.8 hereof.

8.2.10 Calculate and provide availability figures for all Vodacom COFLs for each calendar month. The availability figures calculated by the Telkom ISD and the Vodacom ISD will be compared weekly end reconciled.

8.2.11 Analyse weekly, monthly and yearly failure statistics to produce service performance reports in order to establish trends and determine the general quality of service provided. This information will be used to identify problem areas and where appropriate initiate escalation procedures to rectify the problems.

9.0 TARIFFS, DISCOUNTS AND SURCHARGES FOR COFLs

All tariffs, discounts and surcharges relating to this Appendix 8 are set out in Appendix 7.

Interconnect Agreement Amendment No: 2

AMENDMENT AGREEMENT NO 2

ENTERED INTO BETWEEN

TELKOM SA LIMITED
("TELKOM")

and

MOBILE TELEPHONE NETWORKS (PROPRIETARY) LIMITED
("MTN")

and

VODACOM (PROPRIETARY) LIMITED
("VODACOM")

(jointly "the Parties")

The Parties hereby agree to amend the Interconnection Agreement entered into on the one hand between Telkom and MTN ("the MTN Interconnection Agreement") and the Interconnection Agreement on the other hand between Telkom and Vodacom ("the Vodacom Interconnection Agreement") both on 16 February 1994 (jointly "the Interconnection Agreements") as follows:

- 1 By the deletion of Appendix 7 to the Interconnection Agreements in its entirety.
- 2 By the annexure to each of the Interconnection Agreements of a new Appendix 7 which is annexed to this Amendment Agreement No 2, marked "A" in the case of the MTN Interconnection Agreement and "B" in the case of the Vodacom interconnection Agreement, and initialled by the Parties.
- 3 By the insertion of the following new clause in the Interconnection Agreements, reading as follows:
 - 3.1 In the MTN Interconnection Agreement:
 - 3.1.1 "10.7 Should MTN request Telkom to join, relocate, split or cutback existing COFLs, whether such COFLs were procured as permanent

or temporary services, MTN shall pay to Telkom discounted Link Charges as set out in Appendix 7. "

3.2 In the Vodacom Interconnection Agreement:

3.2.1 "10.7 Should Vodacom request Telkom to join, relocate, split or cut back existing COFLs, whether such COFLs were procured as permanent or temporary services, Vodacom shall pay to Telkom discounted Link Charges as set out in Appendix 7. "

4 By the insertion of the following new clause in the Interconnection Agreements, reading as follows:

"1 0.8 The provisions of clauses 8, 9, 10 and 11. 1 to 11.3 shall *mutatis mutandis* apply in respect of COFLs which are to or have been joined, relocated, split, or cut back, provided that where a discounted installation charge is payable in terms of Part 4 of Appendix 7, no discounts in respect of installation charges as provided for in clause 10.2 shall apply. "

5 By the deletion of clause 11.5 in the Interconnection Agreements and the substitution thereof with the following:

5.1 In the MTN Interconnection Agreement:

5.1.1 "11.5 The Parties shall negotiate with one another in good faith with a view to reaching agreement between them in writing as soon as reasonably practicable after the Signing Date on possible discounts to be granted to MTN by Telkom in respect of any extended contract period for COFLs. "

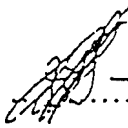
5.2 In the Vodacom Interconnection Agreement:

5.2.1 "11.5 The Parties shall negotiate with one another in good faith with a view to reaching agreement between them in writing as soon as reasonably practicable after the Signing Date on possible discounts to be granted to Vodacom by Telkom in respect of any extended contract period for COFLs. "

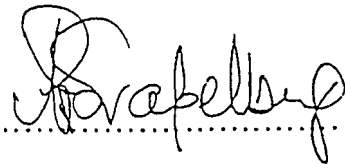
SIGNED AT PRETORIA

ON THIS 5th DAY OF JANUARY 1998

AS WITNESSES:


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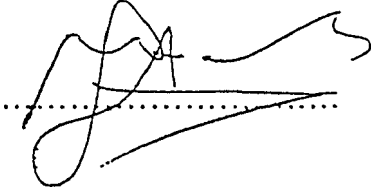

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for TELKOM SA LIMITED

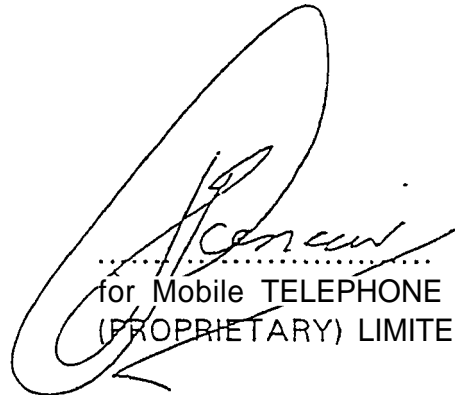
SIGNED AT SANDTON ON THIS 12th DAY OF JANUARY

1998

AS WITNESSES:


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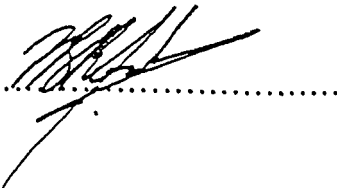
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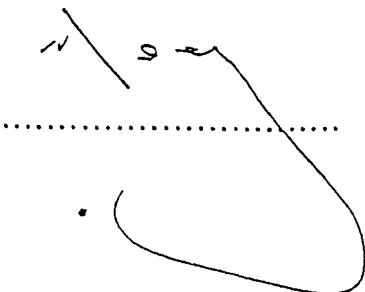

.....
for Mobile TELEPHONE NETWORKS
(PROPRIETARY) LIMITED

SIGNED AT SANTON

ON THIS 7th DAY OF JANUARY 1998

AS WITNESSES:


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.....
for VODACOM
(PROPRIETARY) LIMITED

LINK CHARGES, DISCOUNTS AND SURCHARGES FOR COFLs

CONTENTS

1. LINK CHARGES
2. DISCOUNTS AND SURCHARGES ON LINK CHARGES
3. EXPLANATORY NOTES ON LINK CHARGES
4. DISCOUNTED LINK CHARGES APPLICABLE TO THE JOINING, RELOCATING, SPLITTING OR CUTTING BACK OF COFLs

LINK CHARGES, DISCOUNTS AND SURCHARGES FOR COFLs

1. LINK CHARGES

1.1 Permanent services

Type of link	Radial distance	2 Mbit/s R Excluding VAT		2 Mbit/s R Including VAT	
	(km)	Installation Charge	Monthly Rental	Installation Charge	Monthly Rental
Local ends (within MRA) between premises and exchange A Tariff	Flat Rate	16 294 00	1 299 00	18 575 16	1 480 86
Inter-premises connections between two premises or between premises and foreign exchanges B Tariff	0 to 20	16 294 00	1 515 00	18 575 16	1 727 10
	>20 to 30	16 294 00	2 043.00	18 575 16	2 329.02
	> 30 to 40	16 294 00	3 077 00	18 575 16	3 507 78
	> 40 to 50	16 294 00	3 275 00	18 575 16	3 733 50
	> 50 to 100	16 294 00	5 005 00	18 575 16	5 705 70
Main links between end exchanges	Radial distance (km)	Monthly Fixed Cost	Monthly Rental per km	Monthly Fixed Cost	Monthly Rental per km
C Tariff	0 to 50	480 00	90.50	547.20	103. 17
	> 50 to 200	3 104.76	37.99	3 539.43	43. 31
	> 200 to 400	7 201 11	17.51	8209.27	19. 96
	> 400	10 492.30	9.28	11 961.22	10. 58

1.2 Temporary services

Type of link	Radial distance (km)	2 Mbit/s R Excluding VAT		2 Mbit/s R Including VAT	
		Installation Charge	Hourly Rental	Installation Charge	Hourly Rental
Local ends (within MRA) between premises and exchange A Tariff	Flat Rate	20 367.00	2.22	23 218.38	2.53
Inter-premises connections between two premises or between premises and foreign exchanges B Tariff	0 to 20	20 367.00	2.59	23 218.38	2.95
	> 20 to 30	20 367.00	3.50	23 218.38	3.99
	> 30 to 40	20 367.00	5.27	23 218.38	6. 01
	> 40 to 50	20 367.00	5.61	23 218.38	6. 40
	> 50 to 100	20 367.00	8. 57	23 218.38	9. 77
Main links between end exchanges	Radial distance (km)	Hourly Fixed Cost	Hourly Rental per km	Hourly Fixed Cost	Hourly Rental per km
C Tariff	0 to 50	-	0.27	-	0. 308
	> 50 to 200	-	0. 15	-	0. 171
	> 200 to 400		0. 10	-	0. 114
	>400		0. 07	-	0.08

2. DISCOUNTS AND SURCHARGES ON LINK CHARGES

2.1 Discounts on the A and B tariffs referred to in Part 1 of this Appendix 7

NUMBER OF 2 MBIT/S COFLS PER ROUTE	DISCOUNT ON INSTALLATION CHARGE
1ST COFL	0%
2ND, 3RD AND 4TH COFL	25%
5TH AND SUBSEQUENT TO 64TH COFLS	30%

NUMBER OF 2 MBIT/S COFLS PER ROUTE	DISCOUNTS ON RENTAL BASED ON SERVICE LEVEL OF 99.3%	DISCOUNTS ON RENTAL BASED ON SERVICE LEVEL OF 99.5%	DISCOUNTS ON RENTAL BASED ON SERVICE LEVEL OF 99.9%	DISCOUNTS ON RENTALBASED ON SERVICE LEVEL OF 99.95%
1	5%	0%	0%	0%
2 -4	10%	7.5%	0%	0%
5 - 16	12.5%	10%	2.5%	0%
17-64	15%	12.5%	5%	0%

2.2 Discounts on the C tariff referred to in Part 1 of this Appendix 7

NUMBER OF 2 MBIT/S COFLS PER ROUTE	DISCOUNT ON RENTAL BASED ON SERVICE LEVEL OF 99.95%
1	0%
2 - 4	7.5%
5 - 10	10%
11 - 16	12.5%

2.3 Surcharges on the A and B tariffs referred to in Part 1 of this Appendix 7

NUMBER OF 2 MBIT/S COFLS PER ROUTE	SURCHARGE ON INSTALLATION BASED ON SERVICE LEVEL OF 99.3%	SURCHARGE ON INSTALLATION BASED ON SERVICE LEVEL OF 99.5%	SURCHARGE ON INSTALLATION BASED ON SERVICE LEVEL OF 99.9%	SURCHARGE ON INSTALLATION BASED ON SERVICE LEVEL OF 99.95%
1 ST COFL	0%	0%	75%	75%
2ND, 3RD AND 4TH COFL	0%	0%	0%	0%
5TH AND SUBSEQUENT TO 64TH COFLS	0%	0%	0%	0%

NUMBER OF 2 MBIT/S COFLS PER ROUTE	SURCHARGE ON RENTAL BASED ON SERVICE LEVEL OF 99.3%	SURCHARGE ON RENTAL BASED ON SERVICE LEVEL OF 99.5%	SURCHARGE ON RENTAL BASED ON SERVICE LEVEL OF 99.9%	SURCHARGE ON RENTAL BASED ON SERVICE LEVEL OF 99.95%
1	0%	0%	75%	75%
2 - 4	0%	0%	0%	0%
5 - 16	0%	0%	0%	0%
17-64	0%	0%	0%	0%

2.4 Surcharges on the C tariff referred to in Part 1 of this Appendix 7

NUMBER OF 2 MBIT/S COFLS PER ROUTE	SURCHARGE ON RENTAL FOR SERVICE LEVELS 99.3% AND 99.5%	SURCHARGE ON RENTAL FOR SERVICE LEVELS 99.9% AND 99.95%
1	0%	75%
2 - 4	0%	0%
5 - 10	0%	0%
11 - 16	0%	0%

- 2.5 For the purpose of determining installation and rental fee discounts on COFLs and the determination of service levels on such COFLs a route is defined as a group of 2 Mbit/s systems used to connect 2 elements within the same network or between 2 elements in different networks notwithstanding the physical routing of the systems. Further, in the case of 1 MSC connected to multiple POIs, such POIs will be considered to be 1 element.

3. EXPLANATORY NOTES ON LINK CHARGES

3.1 General

The rules and Link Charges in this explanatory note to Appendix 7 are applicable to COFLs.

3.2 COFLs between Base Stations and Base Station Controllers as well as Base Station Controllers and the MSCs:

- 3.2.1 Where Base Stations and Base Station Controllers are connected to one another and are within 100 km of one another, then the B tariff will be applied. The same tariffing procedure shall apply to COFLs between Base Station Controllers and MSCs within 100 km of one another.

- 3.2.2 Where Base Stations and Base Station Controllers are connected to one another and the distance is greater than 100 km from one another, the A tariff will apply to the COFLs between the Base Stations/Base Station Controllers and their nearest Telkom switching exchanges, as well as

the C tariff for the radial distance between the two Telkom switching exchanges. The same tariffing procedure shall apply to COFLs between Base Station Controllers and MSCs where the distance is greater than 100 km from one another.

- 3.2.3 Where a daisy chain network is provided with up to four Base Stations and each Base Station in the chain is within 100 km of the next Base Station, then the B tariff will be applied. If there are Base Stations in the chain further than 100 km from one another, then the A tariff will apply to the COFLs between the Base Stations and their nearest Telkom switching exchanges, as well as the C tariff for the radial distance between the two Telkom switching exchanges. If the last Base Station in the chain is within 100 km of the Base Station Controller or MSC, then the B tariff will be applied. If the last Base Station in the chain is further than 100 km from the Base Station Controller or MSC, then the A tariff will apply to the links between the Base Station Controller/MSC and their nearest Telkom switching exchanges, as well as the C tariff for the radial distance between the two Telkom switching exchanges.
 - 3.2.4 Where the Base Station/Base Station Controller/MSC equipment is situated on a Telkom switching exchange site and the A tariff and the C tariff are applied to a specific route, the local end tariff (A tariff) will be waived for that specific site, provided that Vodacom provides the cable needed for the connection to the transmission equipment.
- 3.3 COFLs between MSCs and Telkom exchanges for interconnection to the PSTN
- 3.3.1 The COFLs required by Vodacom for interconnection to the PSTN (closest trunk exchange) from their MSCs will be split at Telkom's discretion between various trunk exchanges for security routing as well as for better traffic loading of the various trunk exchanges. Vodacom will be charged the A tariff for these COFLs.
 - 3.3.2 Where Vodacom requires COFLs for interconnection to the PSTN at distant trunk exchanges (e.g. Pietersburg) then Vodacom will be charged the tariff from its MSC to the nearest Telkom switching exchange, as well as the C tariff for the radial distance between the Telkom switching exchange and the distant trunk exchange.
 - 3.3.3 Where the MSC equipment is situated on a Telkom switching exchange site and COFLs are required by Vodacom for interconnection to the PSTN (closest trunk exchange), these COFLs will be split at Telkom's discretion between various trunk exchanges for security routing as well as for better traffic loading of the various trunk exchanges. Vodacom will be charged the A tariff for these COFLs except for those COFLs that terminate on a trunk exchange on the same site as the MSC where the A tariff is waived in which case the cable needed for the connection to the transmission systems or exchange part should be provided by Vodacom.

3.3.4 Where Vodacom requires links for interconnection to the PSTN and request physical redundancy by alternate exchanges, then Vodacom will be charged the A tariff for those links which terminate on the closest trunk exchange and B tariff for those links which terminate on an alternate exchange as these links will cross exchange boundaries.

3.4 COFL G703 interfaces will be provided up to Vodacom's indicated distribution frame at no further charges than those indicated in the schedule, provided that all ducting should be done by Vodacom.

4. DISCOUNTED LINK CHARGES APPLICABLE TO THE JOINING, RELOCATING, SPLITTING OR CUTTING BACK OF COFLs

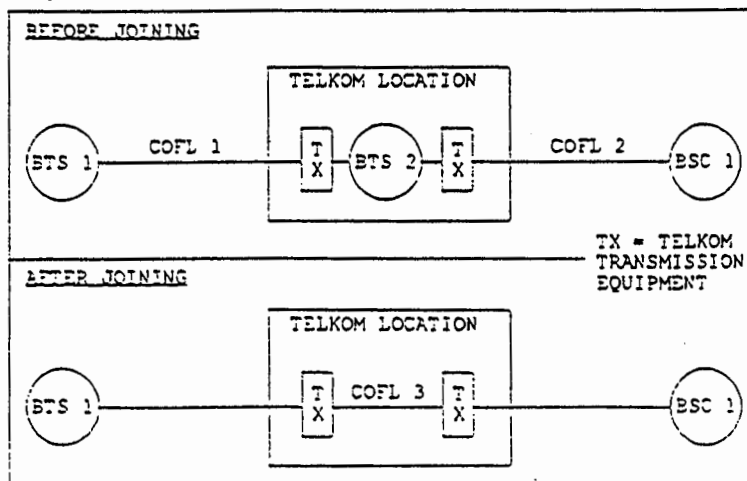
In this Part 4:

- "installation charge" refers to the installation charges provided for in Part 1 of this Appendix 7:
- "Base Station" includes Base Station Controllers, Mobile Switching Centres and/or hub nodes.

4.1 Discounted Link Charges for the joining of COFLs

Description	Installation	Rental	Outstanding rental for original permanent COFL before its one year contract period has expired
Joining of two COFLs on the same premises. (Figure 1)	R3 000.00 (Excl. VAT).	Standard monthly rental for the new COFL (i.e. the joining of the two existing COFLs into a single COFL) will be applicable from the time the work was completed.	Outstanding monthly rental for each individual COFL will be waived.

Figure 1



4.2 Discounted Link Charges for the relocating of COFLs

Description	Installation	Rental	Outstanding rental for original permanent COFL before its one year contract period has expired
Relocation of COFLs on the same premises (no additional Telkom transmission equipment required).	R3 000.00 (Excl. VAT) per end.	Standard monthly rental will remain unchanged.	N/A
Relocation of COFLs to different premises (additional Telkom transmission equipment required).	Full installation charge applicable.	Standard monthly rental will be applicable from the time the work was completed.	Outstanding monthly rental will be waived.
Relocation of COFLs to different premises and connection is provided by means of a tie cable of up to 150 metres (no additional Telkom transmission equipment required).	R3 000.00 (Excl. VAT) per end.	Standard monthly rental will be applicable from the time the work was completed.	Outstanding monthly rental will be waived.

4.3 Discounted Link Charges for the splitting of COFLs

Description	Installation	Rental	Outstanding rental for original permanent COFL before its one year contract period has expired
Splitting of a COFL on the same premises due to the insertion of a Base Station. Jumpering and cabling required (no additional Telkom transmission equipment required). (Figure 2)	R3 000.00 (Excl. VAT) per end.	Standard monthly rental for 2 new COFLs (i.e. the existing COFL which was split into 2 COFLs) will be applicable from the time the work was completed.	Outstanding monthly rental will be waived.
Splitting of a COFL on the same premises due to the insertion of a Base Station (additional Telkom transmission equipment required). (Figure 3)	Half installation charge applicable per end.	Standard monthly rental for 2 new COFLs (i.e. the existing COFL which was split into 2 COFLs) will be applicable from the time the work was completed.	Outstanding monthly rental will be waived.

Figure 2

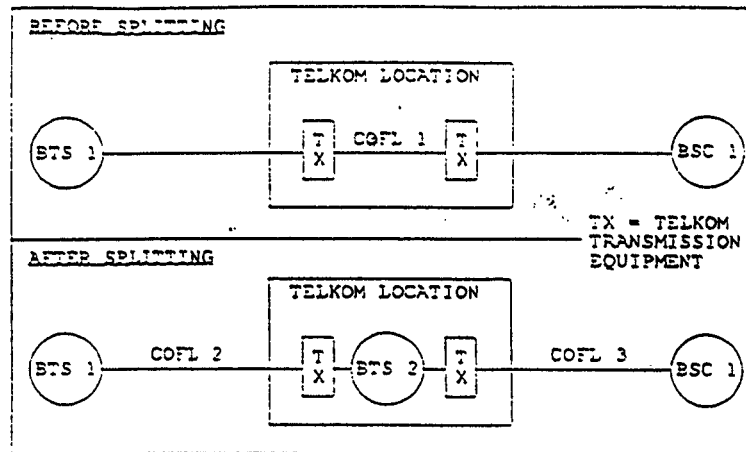
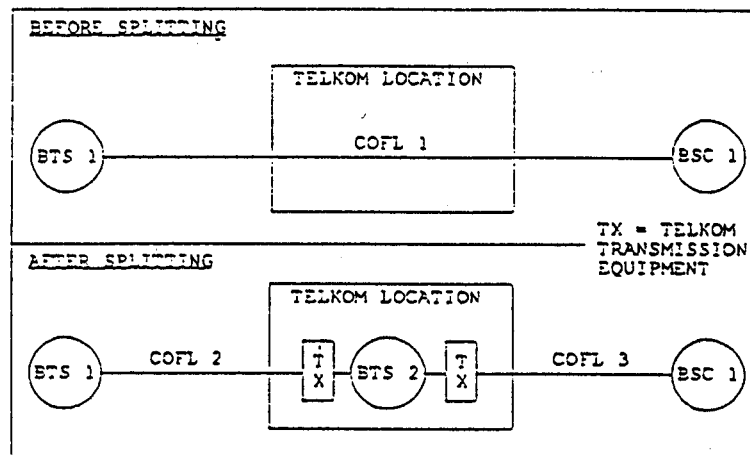


Figure 3



4.4 Discounted Link Charges for the cutting back of COFLs

Description	Installation	Rental	Outstanding rental for the cancelled portion of original permanent COFL before it's one year contract period has expired
Cut back of a COFL to new premises due to the insertion of a Base Station. Jumpering and cabling required (no additional Telkom transmission equipment required). (Figure 4)	R3 000.00 (Excl. VAT) per end.	Standard monthly rental for 1 new COFL (i. e. portion of existing COFL which was retained) will be applicable from the time the work was completed.	Outstanding monthly rental will be due on the cancelled portion of the existing COFL. The outstanding rental will be calculated on the group radial distance of the cancelled portion of the existing COFL.
Cut back of a COFL to new premises due to the insertion of a Base Station (additional Telkom transmission equipment is required). (Figure 5)	Half installation charge applicable per end.	Standard monthly rental for 1 new COFL (i.e. portion of existing COFL which was retained) will be applicable from the time the work was completed.	Outstanding monthly rental will be due on the cancelled portion of the existing COFL. The outstanding rental will be calculated on the group radial distance of the cancelled portion of the existing COFL.

Figure 4

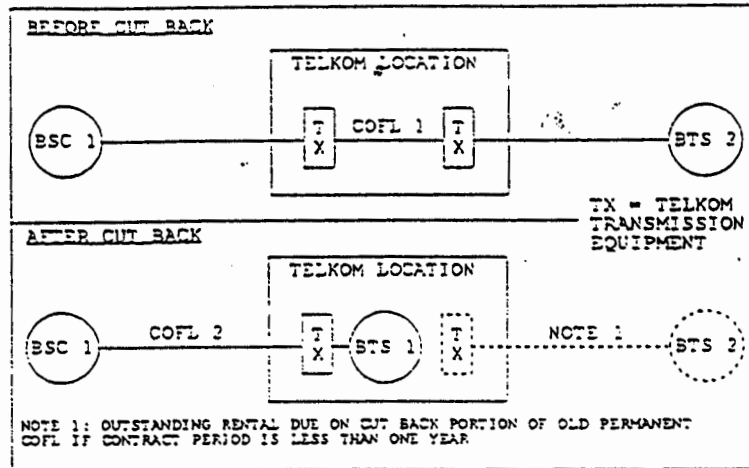
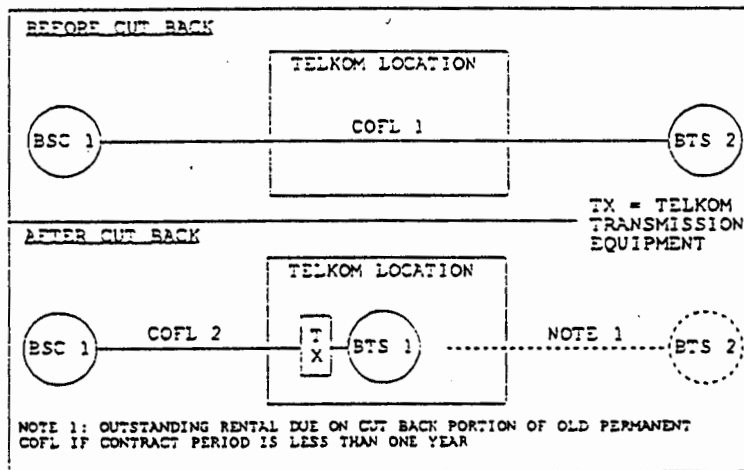


Figure 5.



Amendment Agreement No 3

AMENDMENT AGREEMENT NO 3

ENTERED INTO BETWEEN

TELKOM SA LIMITED
("TELKOM")

and

MOBILE TELEPHONE NETWORKS (PROPRIETARY) LIMITED
("MTN")

and

VODACOM (PROPRIETARY) LIMITED
("VODACOM")

(jointly "the Parties")

The Parties hereby agree to amend the Interconnection Agreement entered into on the one hand between Telkom and MTN ("the MTN Interconnection Agreement") and the Interconnection Agreement on the other hand between Telkom and Vodacom ("the Vodacom interconnection Agreement") both on 16 February 1994 (jointly "the Interconnection Agreements") as follows:

By the insertion of the following new definitions in the Interconnection Agreements, reading as follows:

"2. 1. 60	"CPP Operator"	any person who is in the business of providing a CPP Service and who has an agreement with Telkom;
2. 1. 61	"CPP Service"	a tone and numeric or alpha-numeric Caller Pays Paging (CPP) Service whereby a Call is routed to a CPP Operator from where Messages are conveyed to Paging Terminal Equipment;

2. 1. 62 "Paging Terminal Equipment" a paging terminal capable of providing tones, numeric characters or alpha-numeric characters, which paging terminal is connected to the switching centre of a CPP Operator. "

By the insertion of the following new clause 5.2.1.A in the MTN Interconnection Agreement, reading as follows:

"5.2.1.A National Calls to CPP Services

- 5.2.1.A. 1 Where a National Call originates on the PLMN and is made to a number on the PSTN with the prefix 0880, such number having been allocated for a CPP Service, MTN shall, in addition to the amounts payable in terms of 5.2.1, pay to Telkom, acting as agent for the CPP Operator/s, for each rate group specified in Part E of Appendix 6, an amount calculated in accordance with the following formula:

$$U = \frac{L}{60} \times M$$

Where

- U = the amount in Rand to be paid to Telkom by MTN for the rate group referred to in M in respect of a particular Accounting Period; and
- L = the total duration in seconds of all Calls referred to in this clause 5.2.1.A for such rate group in respect of such Accounting Period; and
- M = the applicable per minute rate for a particular rate group as specified in Part E of Appendix 6, as amended from time to time in accordance with 5.2.1.A.4.

- 5.2.1.A.2 The billing procedures set out in 6.1 and 6.3 up to and including 6.12 shall *mutatis mutandis* apply to the additional amounts payable in terms of this clause 5.2.1.A. In respect of such billing procedures

- 5.2.1.A.2.1 the accounting summary from MTN shall reflect Billing Information, including amounts payable for the rate groups contemplated in Part E of Appendix 6, separate for each relevant CPP Operator;

5.2.1.A.2.2 'Interconnect Fees' in 6.4 shall be read as referring to the additional amounts contemplated in this clause 5.2.1.A.

5.2.1.A.3 In respect of the additional amounts payable by MTN to Telkom in terms of this clause 5.2.1.A, Telkom shall allocate and make payment of such amounts to each relevant CPP Operator whose services are accessed by the prefix 0880 from the PLMN.

5.2.1.A.4 Telkom may from time to time, following negotiations with the CPP Operators, in writing notify MTN of a change to the value of M as set out above. Upon receipt by MTN of the aforesaid notice, Part E of Appendix 6 shall be deemed to be amended accordingly, provided that the notified change to the value of M does not:

5.2.1.A.4.1 exceed the amount per minute that Telkom pays over to the CPP Operators for access to the CPP Services from the PSTN; and

5.2.1.A.4.2 at the time of Telkom concluding negotiations with the relevant CPP Operators, exceed the then current value of a factor which is greater than the percentage year on year increase in the Consumer Price index for all goods as published by the Department of Statistics from time to time

5.2.1.A.5 Changes to the value of M, notified by Telkom to MTN in accordance with 5.2.1.A.4, shall become effective and be implemented on the first day of the Accounting Period that follows on the expiry of 28 days after the date of receipt by MTN of the said notice.

5.2.1.A.6 If for any reason whatsoever, Telkom gives MTN notice that the agreement between Telkom and a particular CPP Operator has come to an end, the provisions of this clause 5.2.1.A shall terminate in respect of such CPP Operator as from the date specified by Telkom in such notice. In the event of notification as contemplated in this clause 5.2.1.A.6, the Parties shall have no further recourse against one another, except for the finalisation of billing procedures prior to the date of termination as aforesaid."

3 By the insertion of the following new clause 5.2.1.A in the Vodacom Interconnection Agreement, reading as follows:

5.2.1.A National Calls to CPP Services

- 5.2.1.A.1 Where a National Call originates on the PLMN and is made to a number on the PSTN with the prefix 0880, such number having been allocated for a CPP Service, Vodacom shall, in addition to the amounts payable in terms of 5.2.1, pay to Telkom, acting as agent for the CPP Operator/s, for each rate group specified in Part E of Appendix 6, an amount calculated in accordance with the following formula:

$$U = \frac{L}{60} \times M$$

Where

U = the amount in Rand to be paid to Telkom by Vodacom for the rate group referred to in M in respect of a particular Accounting Period; and

L = the total duration in seconds of all Calls referred to in this clause 5.2.1.A for such rate group in respect of such Accounting Period; and

M = the applicable per minute rate for a particular rate group as specified in Part E of Appendix 6, as amended from time to time in accordance with 5.2.1.A.4.

- 5.2.1.A.2 The billing procedures set out in 6.1 and 6.3 up to and including 6.12 shall *mutatis mutandis* apply to the additional amounts payable in terms of this clause 5.2.1.A. In respect of such billing procedures

- 5.2.1.A.2.1 the accounting summary from Vodacom shall reflect Billing Information, including amounts payable for the rate groups contemplated in Part E of Appendix 6, separate for each relevant CPP Operator;

- 5.2.1.A.2.2 'Interconnect Fees' in 6.4 shall be read as referring to the additional amounts contemplated in this clause 5.2.1.A.

- 5.2.1.A.3 In respect of the additional amounts payable by Vodacom to Telkom in terms of this clause 5.2.1.A, Telkom shall allocate and make payment of such amounts to each relevant CPP Operator whose services are accessed by the prefix 0880 from the PLMN.

52 I. A 4 Telkom may from time to time, following negotiations with the CPP Operators, in writing notify Vodacom of a change to the value of M as set out above. Upon receipt by Vodacom of the aforesaid notice, Part E of Appendix 6 shall be deemed to be amended accordingly, provided that the notified change to the value of M does not:

5.2.1.A.4.1 exceed the amount per minute that Telkom pays over to the CPP Operators for access to the CPP Services from the PSTN; and

5.2.1.A.4.2 at the time of Telkom concluding negotiations with the relevant CPP Operators, exceed the then current value of M by a factor which is greater than the percentage year on year increase in the Consumer Price Index for all goods as published by the Department of Statistics from time to time.

5.2.1.A.5 Changes to the value of M, notified by Telkom to Vodacom in accordance with 5.2.1.A.4, shall become effective and be implemented on the first day of the Accounting Period that follows on the expiry of 28 days after the date of receipt by Vodacom of the said notice.

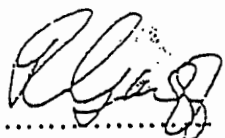
5.2.1.A.6 If for any reason whatsoever, Telkom gives Vodacom notice "that the agreement, between Telkom and a particular CPP Operator has come to an end, the provisions of this clause 5.2.1.A shall terminate in respect of such CPP Operator as from the date specified by Telkom in such notice. In the event of notification as contemplated in this clause 5.2.1.A.6, the Parties shall have no further recourse against one another, except for the finalisation of billing procedures prior to the date of termination as aforesaid. "

4 By the annexure to each of the Interconnection Agreements of a new Appendix 6 which is annexed to this Amendment Agreement No 3, marked "A" in the case of the MTN Interconnection Agreement and "B" in the case of the Vodacom Interconnection Agreement, and initialled by the Parties.

SIGNED AT Pretoria ON THIS 8th DAY OF July 1998

AS WITNESSES:

1 

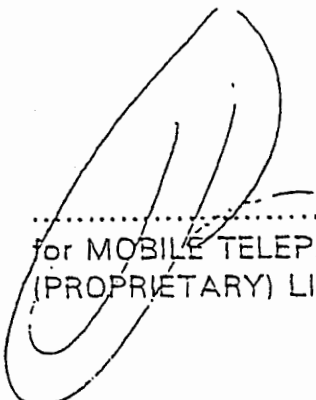

for TELKOM SA LIMITED

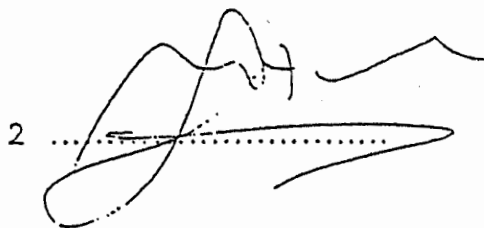


SIGNED AT Sunnyside ON THIS 14th DAY OF July 1998

AS WITNESSES:

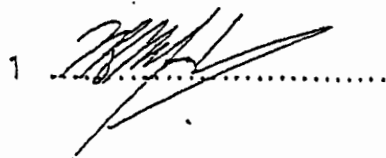
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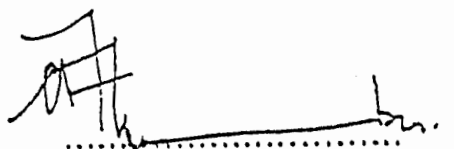

for MOBILE TELEPHONE NETWORKS
(PROPRIETARY) LIMITED

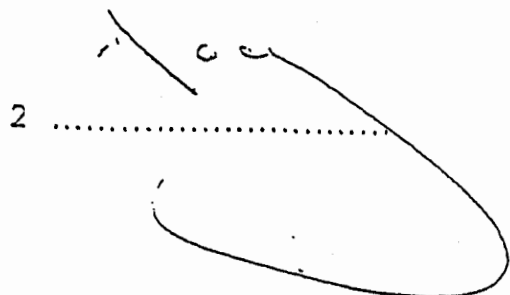
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SIGNED AT Sandton ON THIS 21st DAY OF July 1998

AS WITNESSES:

1 


for VODACOM
(PROPRIETARY) LIMITED

2 

A INTERCONNECT FEES - NATIONAL CALLS ORIGINATING ON THE PLMN AND CONVEYED ON THE PSTN (vide 5.2.1)

Rate Group 1	Monday to Friday 07:00 - 13:00	0.21 Rand per minute
Rate Group 2	Monday TO Friday 18:00 - 20:00 Saturday 07:00 - 13:00	0.14 Rand per minute
Rate Group 3	Monday to Friday 20:00 - 07:00 Saturday 00:00 - 07:00 Saturday 13:00 to Monday 07:00	0.10 Rand per minute

DISCOUNTS ON INTERCONNECT FEES (NATIONAL CALLS)
(vide 5.2.5)

Total annual amount payable to Telkom by Vodacom (calculated from 1 June 1994) for National, International, T3VC and Community Service Calls	Discount on Interconnect Fees referred to in 5.2.1 of main body of Agreement
R0 - 7,5 Million	0%
R7,5 - 15 Million	2,5%
R15 - 30 Million	5%
R30 - 40 Million	10%
R40 Million +	12,5%

C

Telkom

D

Interconnect fee per minute = R0,21

E

Type of CPP Service	CPP Rate Group	Applicable hours	Rate per minute
Alpha numeric	Rate Group 1	Mondays to Sundays All hours	R1, 65
Tone and numeric	Rate Group 2	Mondays to Sundays All hours	R0,57

AMENDMENT TO AGREEMENT

between

Telkom SA Ltd

and

MTN (Pty) Ltd

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AMENDMENT TO INTERCONNECTION AGREEMENT

between

Telkom SA (Pty) Ltd

(hereinafter referred to as "Telkom")

and

Mobile Telephone Networks (Pty) Ltd

(hereinafter referred to as "MTN")

[Handwritten signatures and initials]

1 RECORDAL

1.1 On 16 February 1994 MTN and Vodacom (Pty) Ltd ("Vodacom") respectively concluded Interconnection Agreements with Telkom as well as subsequent amendments thereto which Interconnection Agreements, as amended, subsist.

1.2 The parties have agreed to amend the Interconnection Agreement, as amended, subsisting between them ("the Interconnection Agreement"), as set forth herein.

2 INTERPRETATION AND DEFINITIONS

2.1 In this Amendment to Agreement all words and phrases defined in the Interconnection Agreement shall bear corresponding meanings unless the context otherwise clearly indicates.

2.2 All amounts set out in this Amendment to Agreement are exclusive of Value Added Tax.

3 INTERCONNECT RATE GROUPS

The parties hereby agree that with effect from 1 November 2001 the following rate groups and time periods shall replace those currently provided for in Part A of Appendix 6 to the Interconnection Agreement and apply to all National Calls originating on the PLMN and conveyed on the PSTN, all National Calls originating on the PSTN and conveyed on the PLMN and to all International Calls destined for the PLMN:

- Peak – 07:00 to 20:00 Mondays to Fridays
- Off-peak – all other hours

4. CHARGES AND PAYMENTS

4.1 National Calls

4.1.1 National Calls originating on the PLMN

4.1.1.1 The parties hereby agree that with effect from 1 November 2001:

4.1.1.1.1 The following interconnect rates (as referred to in "B" of the formula set out in clause 5.2.1 of the Interconnection


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Agreement) will be payable to Telkom by MTN and shall replace those provided for in Part A of Appendix 6 to the Interconnection Agreement:

- Peak – R0,21 (twenty one cents) per minute
- Off-peak – R0,10 (ten cents) per minute

4.1.1.1.2

Save for the discount of 25% (twenty five percent) in respect of Community Service Calls which shall remain, the discounts granted by Telkom to MTN on the amounts payable by MTN to Telkom in respect of National Calls (as currently provided for in clause 5.2.5.1 of the Interconnection Agreement) shall no longer apply as from 1 November 2001.

4.1.2

National Calls originating on the PSTN

4.1.2.1

The parties hereby agree that with effect from 1 November 2001:

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4.1.2.1.1

The formula set out in clause 5.2.2 of the Interconnection Agreement shall be amended so as to equate "E" and "B" and to remove all references to "C" and "W".

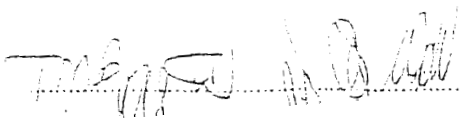
4.1.2.1.2

The following interconnect rates (as referred to in "B" of the formula set out in clause 5.2.2 of the Interconnection Agreement) shall be payable to MTN by Telkom:

- Peak – R1,23 (one Rand and twenty three cents) per minute
- Off-peak – R0,73 (seventy three cents) per minute

4.1.2.1.3

Telkom shall maintain at least one retail tariff offering to its customers connected to automatic and to manual exchanges for National Calls made to the PLMN from within the Territory in respect of which



4.1.2.1.3.1

the nominal amounts it retains, being the difference between the published per minute retail tariffs charged by it to its customers for National Calls made to the PLMN

from within the Territory and the interconnect rates payable to MTN by Telkom (as set out in clause 4.1.2.1.2), shall be no greater than

- Peak – R0.33 (thirty three cents) per minute
- Off-peak – R0.20 (twenty cents) per minute

4.1.2.1.3.2

the sum of the nominal amounts it retains and the interconnect rates payable to MTN, as aforementioned, shall constitute Telkom's retail tariffs for such calls.

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4.1.3

Non-discrimination: Interconnect rates and retail tariffs

4.1.3.1

The parties hereby undertake

4.1.3.1.1

not to discriminate against one another as far as the provision of interconnection is concerned;

4.1.3.1.2

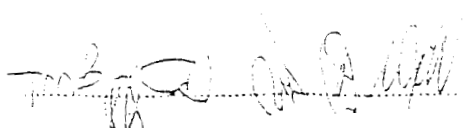
to treat one another no less favourably, both in general and in particular as far as interconnect rates are concerned, than they treat other licensed providers of public switched or public mobile cellular telecommunication services; and

4.1.3.1.3

that interconnect rates are not to exceed retail tariffs for the provision of equivalent services.

4.1.3.2

Notwithstanding the provisions of clauses 4.1.1.1.1 and 4.1.2.1.2, neither Telkom nor MTN shall with effect from 1 November 2001 be obliged to pay the peak interconnect rates



as provided for in clauses 4.1.1.1.1 and 4.1.2.1.2 should such rates exceed

4.1.3.2.1 the peak interconnect rates, related to ~~the conveyance of all voice Calls,~~ provided to other licensed providers of public switched or public mobile cellular telecommunication services (excluding interconnect rates related to the conveyance of Community Service Calls, or any other particular type of Call as might be agreed between the parties); or

4.1.3.2.2 relevant peak retail tariffs applying to all voice Calls (excluding tariffs applying to Community Service Calls; or any other particular type of Call as might be agreed between the parties).

4.1.3.3 The relevant peak retail tariffs referred to in clause 4.1.3.2.2, that are to be used for comparative purposes, shall

4.1.3.3.1 be the tariffs as published by the particular party;

4.1.3.3.2

be the tariffs applying to Calls made during peak time, which for purposes hereof is defined as 07:00 to 19:00 ~~Mondays to Fridays (excluding public~~ holidays);

4.1.3.3.3

be the minimum tariff that it is theoretically possible for a customer to pay for a one minute call. Such minimum tariff shall be calculated taking into account the total actual cost to the customer and shall include all obligatory ancillary charges, which shall be allocated in total to the peak tariffs provided for in the tariff offering (whether billed on a monthly, annual or other timed basis);

4.1.3.3.4

exclude all tariff offerings applying to minutes of Calls as generated (calculated per Accounting Period) in respect of which the number of minutes is equal to or less than 2% (two percent) of the total number of minutes (calculated per

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Accounting Period) of all National Calls conveyed from the PSTN to the PLMN (in respect of a Telkom tariff) or from the PLMN to the PSTN (in respect of an MTN tariff):

4.1.3.3.5

exclude all tariff offerings which apply for a period of 60 days or less;

4.1.3.3.6

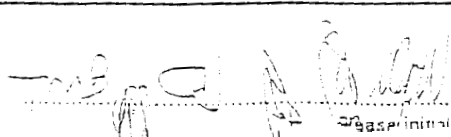
not be dependant on the manner in which it may be packaged or whether such tariffs are indicated as being charged on per second or any other unitized basis;

4.1.3.3.7

in respect of MTN be the tariffs applicable to Calls originating on the PLMN and destined for either MTN's PLMN or the PLMN of a similarly licensed PLMN Operator, whichever is the lower; and

4.1.3.3.8

in respect of Telkom be the tariffs applicable to Calls originating on the PSTN and destined for either Telkom's


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PSTN or the PSTN of a similarly licensed
PSTN Operator, whichever is the lower.

4.1.3.4

In the event of MTN or Telkom

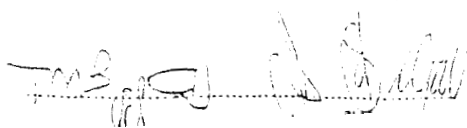
4.1.3.4.1

providing peak interconnect rates to
other licensed providers of public
switched or public mobile cellular
telecommunication services; or

4.1.3.4.2

offering its customers relevant peak retail
tariffs,

which are lower than the peak interconnect
rates provided for in clauses 4.1.1.1.1 and
4.1.2.1.2, the affected party shall deliver a
notice in writing to the other party -- advising
it of this occurrence and setting out in
reasonable detail the basis for its allegations --
whereafter the parties shall forthwith meet and
negotiate, in good faith, with a view to
adjusting the interconnect rates. Should the
parties fail, within 30 (thirty) days of receipt of
the notice, to reach agreement on appropriate
adjustments to be made to the interconnection



rates or to otherwise resolve the matter, same shall be considered a dispute for purposes of clause 30 of the Interconnection Agreement.

The affected party shall be entitled to reduce, with effect from the date of deemed receipt of the notice, the interconnect rates provided for in clauses 4.1.1.1.1 and 4.1.2.1.2 to be equal to the relevant peak interconnect rate provided by the other party to another licensed provider of public switched or public mobile cellular telecommunication services, or to the peak retail tariff offered by the other party to its customers, provided that should final resolution of the dispute not favour the affected party it shall promptly pay any sum found to be due, together with interest thereon calculated at the prime overdraft rate charged by the Standard Bank of South Africa Limited, from time to time. Should Telkom be the affected party, it shall during the relevant period not be considered to be in breach of the provisions of clause 4.1.2.1.3.

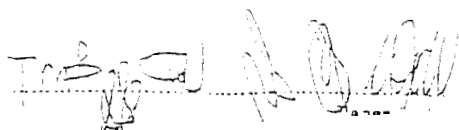
4.2 International Calls

4.2.1 International Calls originating on the PLMN

The parties hereby agree that the discount of 17% (seventeen percent) currently granted to MTN on Telkom's retail tariffs for International Calls shall be increased to 25% (twenty five percent) with effect from 1 November 2001. Thus, the factor of ".83" as provided for in the formula contained in Part C of Appendix 6 to the Interconnection Agreement shall be replaced with a factor of ".75".

4.2.2 International Calls destined for the PLMN

The parties hereby agree that the interconnect rates (the "applicable amount" as referred to in "K" of the formula set out in clause 5.3.2 of the Interconnection Agreement) payable to MTN by Telkom for the conveyance of International Calls shall be and remain equal to the interconnect rates payable to MTN by Telkom for National Calls originating on the PSTN (as provided for in clause 4.1.2.1.2).



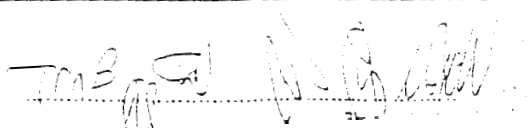
Review of Interconnect Fees and Retention Amounts

The interconnect rates provided for in clauses 4.1.1.1.1 and 4.1.2.1.2 as well as the retention amounts provided for in clause 4.1.2.1.3.1 shall remain unchanged until 31 December 2002, whereafter

- Telkom shall be entitled to increase the interconnect rates referred to in clause 4.1.1.1.1 and the retention amounts provided for in clause 4.1.2.1.3.1; and

- MTN shall be entitled to increase the interconnect rates referred to in clause 4.1.2.1.2,

once a year with effect from 1 January of each year, provided that notice of such increase is furnished by the party effecting the increase to all other parties no later than 30 September of the preceding year. Such increase shall further be limited to an amount not exceeding the higher of CPI or R0.02 (two cents) and no carry-over of increases from one year to another shall be permissible. The party effecting the increase shall be responsible for obtaining all approvals and authorizations as might be necessary to enable it to do so. For purposes hereof CPI shall mean the official Consumer Price Index as calculated for the twelve-month period ending on 31 August of the year preceding the increase.



5 EFFECTIVE DATE OF THIS AMENDMENT TO AGREEMENT

5.1 This Amendment to Agreement shall come into effect on
1 November 2001.

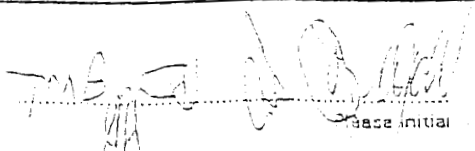
5.2 The provisions of this clause 5 are subject to the provisions
of clause 6 below.

6 SUSPENSIVE CONDITIONS

6.1 This Amendment to Agreement is subject, in its entirety, to
the fulfilment of the following suspensive conditions:

6.1.1 By 7 September 2001, Telkom and Vodacom signing
an identical agreement and, Telkom and Cell C (Pty)
Ltd signing an agreement, pertaining to
interconnection, on substantively the same terms and
conditions as contained in the Interconnection
Agreement as amended herein;

6.1.2 By 15 October 2001, ICASA determining that it does
not object to the amendments set forth in this
Amendment to Agreement.


Page Initial

7 WHOLE AMENDMENT

7.1 This Amendment to Agreement comprises the entire amendment to the Interconnection Agreement with regard to the matters set forth herein, and no further amendment or variation of the Interconnection Agreement with regard to the matters set forth herein shall be of any force or effect unless reduced to writing and signed by the parties hereto.

7.2 Insofar as this Amendment to Agreement does not effect amendments to the remaining provisions of the Interconnection Agreement such provisions shall remain of full force and effect. The parties do, however, record their intention to further amend such Interconnection Agreement *inter alia* to separate out interconnection and facilities leasing, to incorporate the terms of this Amendment to Agreement as well as previous amendments into one document and to further bring such Agreement in line with changed legislative, regulatory and other requirements.

SIGNED at PRETORIA on 22 AUGUST 2001

AS WITNESSES:

1. [Signature]

2. [Signature]

SUBJECT TO BOTH PARTIES
ON 7 SEPT. 2001

[Signature]
For and on behalf of
TELKOM SA LTD

SIGNED at SANDTON on 14 SEPTEMBER 2001

AS WITNESSES:

1. [Signature]

2. [Signature]

[Signature]
For and on behalf of
MTN (PTY) LTD