



Government Gazette Staatskoerant

REPUBLIC OF SOUTH AFRICA
REPUBLIEK VAN SUID-AFRIKA

Vol. 459

Pretoria, 8 September 2003

No. 25445



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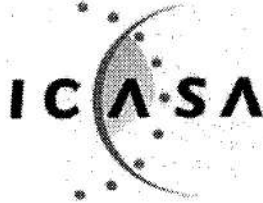
Independent Communications Authority of South Africa

General Notices

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GENERAL NOTICES

NOTICE 2346 OF 2003



INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

NOTICE OF INTENTION TO MAKE SUPPLEMENTARY REGULATIONS RELATING TO THE INTERCONNECTION GUIDELINES IN RESPECT OF PROVISIONING CHARGES AND QUALITY OF SERVICE BETWEEN TWO PSTS OPERATORS

The Independent Communications Authority of South Africa ("the Authority"), hereby gives notice that it intends making the following regulations in terms of section 96(1) read with sections 96(4), 96(6) and 43 of the Telecommunications Act, 1996 (Act No. 103 of 1996), as amended.

Interested persons are hereby invited to submit written comments or written representations with regard to the proposed regulations, to be received by **no later than 14h00 on 7 October 2003** by post, hand delivery or facsimile transmission for the attention of Ms Nomvuyiso Batyi, Independent Communications Authority of South Africa, Private Bag X10002, Marlboro, 2063; Block C, Pin Mill Farm, 164 Katherine Street, Sandton; Facsimile (011) 321 8536, telephone (011) 321 8415 or e-mail: nbatyi@icasa.org.za.

Persons making representations are further invited to indicate whether they are requesting an opportunity to make oral representations (and the estimated duration thereof, which duration shall not exceed one hour).

**MANDLA LANGA
CHAIRPERSON
ICASA**

SCHEDULE

These guidelines shall, unless the context indicates the contrary, be interpreted and applied in a manner consistent with the interconnection guidelines promulgated by the Minister under Government gazette number 20993, General Notice 1259 of 2000. For the avoidance of doubt except as amended or supplemented, the existing Interconnection Guidelines (General Notice 1259 of 2000) and the Supplementary Interconnection Guidelines (General Notice 3457 of 2002, GG 24203) shall continue in full force and effect.

1. Definitions and interpretation

In this Schedule any word or expression to which a meaning has been assigned by the Telecommunications Act, 1996 (Act No, 103 of 1996) (hereinafter referred to as "the Act"), shall have the meaning so assigned unless the context indicates otherwise.

- (i) **'Single tandem interconnection rate'** means the rate for the call termination from a point of interconnection to geographic number of a subscriber located in the region served by the point of interconnection.
- (ii) **'Double tandem interconnection rate'** means the rate for call termination from a point of interconnection to a geographic number of a subscriber located anywhere in South Africa except the region served by the point of interconnection.

2. Application of this supplement

This supplement applies only to interconnection between Public Switched Telecommunication Service ("PSTS") operators. PSTS operators are not obliged under the principle of non-discrimination to offer similar terms to other operators including Mobile Cellular Telecommunication Service operators.

3. Establishment of Points of Interconnection

- (1) The incumbent operator shall publish within 2 (two) months of the coming into force of these regulations a list of points at which they offer interconnection. The list shall include the following –
 - (i) the street address of each premise that serves a Point Of Interconnection;
 - (ii) the number ranges in the network for geographic numbers to which calls may be terminated from the Point Of Interconnection at Single Tandem Interconnection rate;

- (iii) the number ranges in the network and the corresponding termination rates for all numbers that can be reached from the Point Of Interconnection;
 - (iv) the technical specification with which compliance is necessary to achieve physical, transmission and signalling compatibility at the point of interconnection;
 - (v) the procedures for testing network compatibility and inter-working.
- (2) All PSTS operators other than the incumbent operator shall publish the number ranges in the network and the corresponding termination rates for all numbers that can be reached from the Points Of Interconnection that they establish with the incumbent operator.
- (3) Unless the Interconnection Provider and Interconnection Seeker agree on other arrangements, the Point of Interconnection shall be nominally at the mid point of the cable between the premises of each party that serves as a Point Of Interconnection.
- (4) Each party shall bear its own costs for establishing the cabling and transmission to a Point Of Interconnection referred to in sub clause 3(3). Each party shall bear its own costs for compatibility testing, interconnecting its network management system and for providing fault investigation facilities. Where other arrangements are agreed to, payments shall be made according to the extent to which the arrangements differ from those described in this clause.
- (5) When establishing a Point of Interconnection, the parties shall comply with relevant technical specification Points Of Interconnection that are listed in an annexure published by the Authority, unless they agree to use alternative specifications. In the absence of relevant specifications in such an annexure, the party who has held a licence for a shorter period of time shall be responsible for adapting its systems to be compatible with the party who has held a licence for a longer period.
- (6) Where a PSTS operator has not yet concluded an interconnection agreement with an Interconnection Seeker, it shall accept requests to use Points of Interconnection and such Points of Interconnection shall be established as provided for in the Interconnection Guidelines (General Notice 1259 of 2000). Such request shall be accompanied by a non-refundable payment of R 500 000 (five hundred thousand) for each Point of Interconnection requested and this payment shall be credited against future payments for traffic and capacity at the Point of Interconnection requested.

4. Capacity at the Point of Interconnection

- (1) Each operator who wishes to pass call termination traffic to the other operator at a given Point of Interconnection shall be responsible for ordering capacity at the Point of Interconnection for that traffic.
- (2) Each operator who wishes to receive call origination traffic from the other operator at a given point shall be responsible for ordering capacity at the Point of Interconnection for that traffic.
- (3) Once a Point of Interconnection has been established, each operator shall place advance orders for circuits for traffic for which it is responsible. During a period of 180 (one hundred and eighty) calendar days starting 28 (twenty-eight) calendar days after placing the advance order, an operator shall be entitled to place one or more orders that when aggregated do not exceed the capacity specified in the advance order. Each operator who receives such an order shall supply the capacity ordered within 28 (twenty-eight) calendar days.
- (4) Each operator shall pay a port rental charge for circuits that it orders.
 - (i) The port rental charge shall be based on the capital costs of providing capacity amortised over 7 (seven) years plus the costs of maintenance.
 - (ii) The minimum rental period for a port shall not be less than 4 (four) years.
 - (iii) Each advance order for a port shall be accompanied by a deposit equal to 50 per cent (fifty per cent) of the annual port rental for the capacity specified. This deposit shall be credited towards orders placed within the 180 (one hundred and eighty) calendar day period specified in sub-clause 4 (3).
- (5) Where an operator fails to supply capacity ordered in accordance with sub-clause 4 (3) within 28 (twenty-eight) calendar days, the operator shall pay the operator, who placed the order, for delays of up to 28 (twenty-eight) calendar days a penalty of 4 (four) times the port rental that it would have received for the period of the delay. For delays that exceed 28 (twenty-eight) calendar days, the penalty rate shall be increased to 10 (ten) times the port rental that it would have received for the period by which the delay exceeds 28 (twenty-eight) calendar days.

(6) Where one of the operators at a given Point of Interconnection has been in operation for less than two years, sub clause 4 (1) shall not apply for traffic terminating on that operator's network.

(iv) An operator who has been in operation for less than 2 years shall provide to the proposed Interconnection Provider two monthly forecasts of the traffic that it expects to receive and the number of circuits required.

(v) An operator who has been in operation for less than 2 years shall pay the proposed Interconnection Provider a port rental charge for the number of circuits needed to carry the level of traffic observed with a 1% (one per cent) grade of service.

(vi) The number of circuits shall be calculated on the basis of the traffic measured in the last week of each month and rounded up to the nearest unit of 2 Mbit/s. If in any month the traffic level observed is within the level forecast two earlier and the proportion of traffic observed at the Point of Interconnection in the busy hour is greater than can be carried with 1 % (one per cent) grade of service, then the operator who is sending the traffic shall pay a penalty of five day's port rental for 2 Mbit/s for each days when the traffic is greater than can be carried with 1 % (one per cent) grade of service. Peaks in traffic resulting from identified special events shall be excluded from these calculations.

(7) Operators may vary the provisions of sub clauses 4 (1) to 4 (6) by agreement.

(8) The obligation of sub -clause 4 (1) to 4 (7) shall apply in cases where the Interconnection Provider and Interconnection Seeker have not yet concluded an Interconnection Agreement.

(9) Where the operators agree to use circuits that may be used for either direction of traffic, they may agree to modify the arrangements of sub-clause 4 (1) to 4 (7) accordingly.

5. Calls at the Point of Interconnection

(1) Each operator shall offer to terminate direct dialled calls to any destination reachable on or via its network from each Point of Interconnection.

(2) Each operator who is required to provide carrier pre-selection shall offer to hand over direct dialled calls from any subscriber with a geographic

number on its network at each Point Of Interconnection but only in accordance with the provisions of the Carrier Pre-Select Regulations.

6. Charges

(1) The charges specified in the attached annexure shall apply to interconnection services provided by PSTS operators to each other until charges based on Long Run Incremental Cost (LRIC) have been established in a manner acceptable to the Authority.

(2) The Authority may specify—

- (i) interconnection charges for any operator and may amend any charges that it specifies in order to relate the charges more closely to the LRIC costs; and
- (ii) constraints to apply to charges set by the operators.

7. Quality of Service

Each PSTS operator shall report its performance with regard to interconnection to the Authority against quality of service parameters defined in such annexure at intervals specified in such annexure. The Authority shall publish a summary of the performance reported.

8. Repeal

Sub- clause 15 (4) of the Interconnection Guidelines published in Notice 1259 in Government Gazette Number 20993 dated 15 March 2000 is hereby repealed and replaced by sub-clauses 3 (3) and 3 (4) of this regulation.

A. Annexure of Charges

The following call termination rates shall apply for calls to Telkom:

Rand/min	Peak	Low
	0700-1800 weekdays	2000-0700 weekdays and other time weekends
Double tandem	0.184	0.092
Single tandem	0.079	0.040

B. Annexure for quality of service parameters

The following quality of service parameters shall be reported to the Authority by all the PSTS operators. Reports shall be made quarterly and shall reach the Authority within 28 calendar days of the end of the reporting period.

Parameter	Reference	Comments
Supply time for initial physical interconnection at a site	ETSI TR 101 949 Clause 5.1	Individual results
Supply time of E1 Interconnection circuits on an established interconnection link	ETSI TR 101 949 Clause 5.2	Times for fastest 90%. Separate reports for each requesting operator but aggregated across sites.
Availability of E1 interconnection circuits per interconnection link	ETSI TR 101 949 Clause 5.6	Aggregated across sites and operators
Fault rate per E1 interconnection circuit	ETSI TR 101 949 Clause 5.7	Aggregated across sites and operators
Fault repair time for the E1 interconnection circuits	ETSI TR 101 949 Clause 5.8	Time for fastest 95%. Aggregated across sites and operators
Unsuccessful call ratio with carrier selection	ETSI TR 101 949 Clause 6.2	Based on measurements at an agreed set of exchanges
Blocking at Busy Hour on the interconnection circuit groups	ETSI TR 101 949 Clause 6.3	Separately for each interconnection point
Response times for answering fault	ETSI TR 101 949	Mean time to answer

reporting line	Clause 7.1	
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EXPLANATORY MEMORANDUM ON THE PROPOSED SUPPLEMENT TO THE INTERCONNECTION GUIDELINES CONCERNING PROVISIONING, CHARGES AND QUALITY OF SERVICE¹

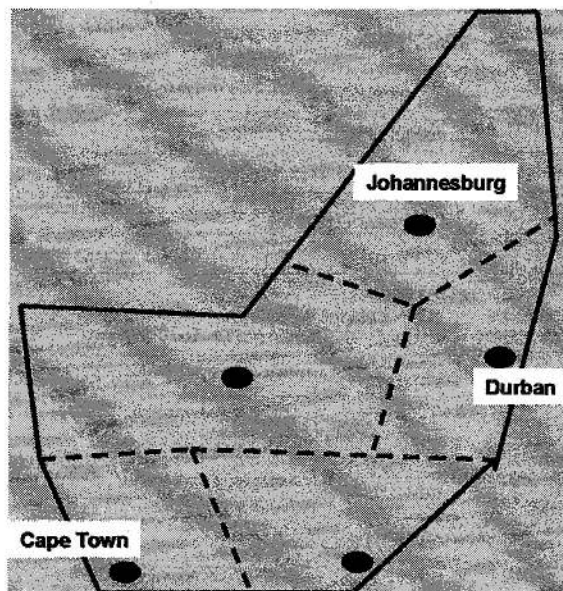
Background:

1. The text of this proposed regulation has been drafted to make it open to market entrants additional to the Second National Operator (SNO) so that it can be used for future liberalisation
2. The national interconnection arrangements need to be based to a large extent on the existing structure of the Telkom network, although the intention is that the regulations and agreements will be formulated to be as "network-independent" as possible.
3. The Telkom network is structured to have separate layers of local and transit exchanges. Initially interconnection will take place at the transit layer but when traffic levels justify it, interconnection may also be provided at the local exchanges. This Supplement only covers interconnection at the transit layer.
4. Each transit exchange serves local exchanges in a specific region of the country and all the transit exchanges are interconnected to each other and to the international exchanges. In each region there may be more than one switch in order to provide redundancy.
5. The arrangement proposed is Telkom should offer a point of interconnection at the transit level in each region. From each such point of interconnection, an interconnecting operator should be able to send calls to any point in the Telkom network or to other networks eg mobile networks, USALs or international destinations, via the Telkom network. Under CPS Phase 1 and CPS Phase 2 (refer to "Proposed Approach to Carrier Pre-selection" document), they should also be able to collect calls from any point in the Telkom network. They should also be able to receive calls from Telkom to their own subscribers.
6. The payments to Telkom for terminating national calls will depend on the distance that Telkom has to carry the call. Payments will be lower for calls that terminate in the region where the point of interconnection is located – this is known as single transit ("Single tandem") because only one transit

¹ This is an explanatory note prepared to help respondents assess and comment on the proposed interconnection regulations. This note does not have any legal status.

exchange is involved. Payments will be higher for calls that terminate in any other part of the country – this is known as double transit ("double tandem") because two transit exchanges are involved.

7. The situation for national call termination is shown in the following diagram:



8. Calls may be passed to Telkom, for example, at the Johannesburg point of interconnection for any destination in the country. But if the destination is in the Johannesburg region, then the interconnection operator will pay Telkom only a single transit fee ("single tandem rate"), but if the destination is anywhere else, eg in the Cape Town region or in the Durban region, then they will pay a double transit fee ("double tandem rate").
9. The SNO is most unlikely to use the same network structure, especially in the early days of operation. It will be free to organise its network differently but on the grounds of simplicity and reciprocity it will be required to charge Telkom for interconnection services on the same basis and at the same rates. The SNO will be free to offer other arrangements to other operators.
10. Interconnection agreements with mobile operators are negotiated commercially as a package and the interconnection rates imposed on the Public Switched Telecommunications Services (PSTS) operators are not suitable for application to the mobile operators without other substantial changes being made to those arrangements, otherwise the arrangements would be distorted against the reasonable interests of the PSTS operators.

Explanatory Notes on Specific Sections and Paragraphs

11. Ad paragraph 3 of the proposed supplement which paragraph deals with Establishment of Points of Interconnections, the purpose of this is to move towards a Reference Interconnection Offer because that will be needed later when full liberalisation starts.

12. Ad paragraph 3(3) and paragraph 8 (Repeal) it has been noted that Clause 15.4 of the Interconnection Guidelines (2000) is inconsistent with clause 10.1(b) on interconnection capacity. Charges for the type of interconnection need clarification, as do charges for testing. It is also necessary to establish the mid point for and In Span Interconnection as the reference point for each party bearing their own charges. However this clause allows other agreements such as customer sited interconnection and the clause is not intended to discourage such other arrangements.
 13. Ad paragraph 3(5) this clause describes a basic practical principle but it also gives the Authority powers to move the technology of interconnection forward.
 14. Ad paragraph 3(6) this clause seeks to kick start the interconnection with the SNO by avoiding the 3 months allowed for negotiating agreements after the issue of the licence.
 15. Ad section 4 (Capacity at the Point of Interconnection), this section sets out a basic set of responsibilities and an ordering procedure, but allows the operators to vary them by agreement. It is intended to accelerate initial progress.
 16. Ad paragraph 4(1), this is very important as the incumbent might try to make other operators such as the SNO responsible for all ordering. The interconnection guidelines use the term "interconnection seeker" but this term is inappropriate for any-to-any traffic where each party has responsibility for a different direction of traffic.
 17. Ad paragraph 4(3), this paragraph is based on the concept used in the United Kingdom (UK) but it is simplified. Operators may also want to exchange forecasts but that does not need regulation.
 18. Ad paragraph 4(4), a short amortisation period and a long minimum contract are necessary as there could be a peak in demand for interconnection and then a long reduction in capacity that creates stranded assets. This would be the result of a growth in broadband and migration of services to the Internet.
 19. Ad paragraph 4(5), penalties is needed because failure to provide capacity would have a serious impact on the business of the SNO. These penalties may look large but the effects on the Interconnection Seeker's business of quality problems arising from a lack of capacity are likely to be very large.
 20. Ad paragraph 4(6), this is to handle the start-up phase where the incumbent cannot predict traffic levels to the SNO adequately.
 21. Ad section 5 (Calls at the Point of Interconnection), these provisions are designed to ensure that national coverage is possible from each point of interconnection.
 22. Ad section 6 (Charges), the purpose here is to avoid a long negotiation initially. The charges apply to all operators under the principles of reciprocity and simplicity.
 23. Ad paragraph 6(2), the aim of this clause is to provide scope for specifying charges simply via a schedule rather than via additional supplements to the interconnection guidelines and so to make them easier and simpler to change.
- Ad section 7 (Quality of Service), reporting should apply to all operators.. It is better not to set rigid Quality of Service targets at this stage. Publication causes quite strong pressure for good performance and gives the Authority the information that it needs to monitor developments

NOTICE 2349 OF 2003**INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA****NOTICE OF INTENTION TO MAKE REGULATIONS FOR THE IMPLEMENTATION OF CARRIER PRE-SELECTION (hereinafter referred to as "CPS")**

The Independent Communications Authority of South Africa ("the Authority"), hereby gives notice that it intends making the following regulations in terms of section 96(1) read with sections 96(4), 96(6) and 89C of the Telecommunications Act, 1996 (Act No. 103 of 1996), as amended. These regulations are intended to repeal in whole the "Regulations for the Implementation of Carrier Pre-Selection and Carrier Selection" published in Notice No 1281 of Government Gazette No 23631 dated 15 July 2002.

Interested persons are hereby invited to submit written comments or written representations with regard to the proposed regulations, to be received **by no later than 14h00 on 7 October 2003** by post, hand delivery or facsimile transmission for the attention of Ms Rosanna Achterberg, Independent Communications Authority of South Africa, Private Bag X10002, Marlboro, 2063; Block C, Pin Mill Farm, 164 Katherine Street, Sandton; Facsimile (011) 321 8536, telephone (011) 321 8473 or e-mail: rachterberg@icasa.org.za

Persons making representations are further invited to indicate whether they are requesting an opportunity to make oral representations (and the estimated duration thereof, which duration shall not exceed one hour).

MANDLA LANGA
CHAIRPERSON
ICASA

SCHEDULE

1. Definitions

In these regulations any expression or word to which a meaning has been assigned by the Telecommunications Act, 1996 (Act No 103 of 1996), as amended, (hereinafter referred to as "the Act"), shall have the same meaning in these regulations, unless the context otherwise indicates –

- (i) **'Access Code'** means a short number prefix or code of not less than three digits that identifies the Operator selected by the Subscriber to carry the call.
- (ii) **'Call Origination'** means that segment of a call made under CPS Phase 1 or CPS Phase 2 from the Subscriber's end of the exchange line to the Point of Interconnection.
- (iii) **Call Termination** means that segment of a call from the point of interconnection to the called Subscriber's end of the called Subscriber's exchange line. Part of this segment may be provided by another operator.
- (iv) **'Carrier Pre-Selection Code'** means an Access Code added by the Providing Operator under CPS Phase 2.
- (v) **'Carrier Selection Code'** means an Access Code added by the Subscriber or their customer premises equipment under CPS Phase 1.
- (vi) **'CPS Phase 1'** means the process whereby a Subscriber may access an operator other than its Providing Operator or an operator that it has selected under CPS Phase 2 on a call-by-call basis by adding a short Access Code to the front of a dialled number. The Access Code may be added either manually by the Subscriber during the dialling process or automatically by customer premises equipment such as an auto-dialler.
- (vii) **'CPS Phase 2'** means the process whereby a Subscriber may designate its choices of Selected Operator(s) to provide its

telecommunication services, with the choice being effected by the network of the Providing Operator and not the Subscriber.

- (viii) **'Eligible Subscriber'** means a Subscriber who is eligible to use CPS Phase 1 and CPS Phase 2. It is any Subscriber whose account is not suspended and who is not in a category listed in an Annexure published by the Authority.
- (ix) **'Functional Specification'** means the minimum technical characteristics and other principles, which operators must adhere to and which are intended to effect the efficient implementation of CPS Phase 1 and CPS Phase 2.
- (x) **'Ordering System Specification'** means a detailed specification of the procedures for ordering CPS Phase 2 by a Subscriber, and the subsequent interactions between the operators including the procedures for handling errors and unauthorised orders.
- (xi) **'Providing Operator'** means an operator licensed or otherwise authorised who is required to provide CPS Phase 1 or CPS Phase 2 to one or more operators.
- (xii) **'Requesting Operator'** means an operator licensed or otherwise authorised to provide telecommunications services that may be accessed by CPS Phase 1 or CPS Phase 2 and who requests CPS Phase 1 or CPS Phase 2 from a providing operator.
- (xiii) **'Selected Operator'** means the telecommunications operator who is licensed to provide services that may be accessed by CPS Phase 1 or CPS Phase 2 and was selected by a subscriber for a given call.
- (xiv) **'Slamming'** means the practice of switching a Subscriber's long distance or international call operator without the Subscriber's knowledge or consent, or after obtaining consent but based upon a misrepresentation or deceptive practices by the operator, a third party verifier, or any other agents or representatives of the operator.
- (xv) **'subscriber'** means any person or entity that is a party to a contract or other similar arrangement that is in force with a Providing Operator for the supply of telecommunications services. The term includes in addition any caller who makes or clears calls that are the subject of such a contract or arrangement.
- (xvi) **'Winback'** means the offering by a Providing Operator to Subscribers of discounts, free services or other inducements in order to convince

those Subscribers not to change operators or to revert back to their original operator in the first 2 months after requesting CPS Phase 1 or CPS Phase 2.

2. Requirements to provide CPS Phase 1

2.1 All providing operators shall establish in respect of number ranges listed in a Schedule published by the Authority the facilities to enable all their Eligible Subscribers to access a Selected Operator by means of CPS Phase 1 within 2 (two) months of receiving a request in writing for the establishment of such a facility from an operator licensed or otherwise authorised to provide telecommunications by CPS Phase 1. The facilities include:

- (a) the establishment of interconnection for Call Origination;
- (b) the means to interpret access codes and route calls to the relevant interconnection points.

2.2 The obligations in terms of section 2.1 shall apply irrespective of whether the Providing and Requesting Operators have concluded an interconnection agreement.

2.3 The implementation of CPS Phase 1 shall conform to a Functional Specification to be developed and maintained by the Authority in consultation with the Providing Operators and prospective Requesting Operators. The Authority shall publish and enforce the functional specification.

3. Requirements to provide CPS Phase 2

3.1 All Providing Operators shall establish in respect of number ranges listed in an Annexure published by the Authority the facilities to enable all their Eligible Subscribers to access a Selected Operator by means of CPS Phase 2 within 10 (ten) months of receiving a request in writing for the establishment of such a facility from a requesting operator. The 10 month period shall include time for testing and validation.

3.2 A request contemplated in section 3.1 may be made only after the Functional Specification and Ordering System Specification have been approved and published by the Authority.

3.3 The facilities referred to in section 3.1 include, but are not limited to:

- (a) the inter-operator procedures for ordering CPS Phase 2 for individual subscribers in accordance with the functional specification and Ordering System Specification;
 - (b) the establishment of interconnection for call origination;
 - (c) the means to add Access Codes to the calls made by the Subscriber and to route such calls to the relevant interconnection points;
 - (d) the ability for Subscribers to pre-select the same or different operators for national and international calls and to change or cancel these selections, subject to the exclusions listed in an Annexure published by the Authority.
 - (e) the ability of Subscribers to over ride their pre-selections by adding a carrier selection code on a call-by-call basis. The carrier selection code may identify the Providing Operator or any operator who offers service by CPS Phase 1.
- 3.4 All Providing Operators shall upon request of a Requesting Operator inform all their Eligible Subscribers in writing that CPS Phase 2 access is available from the Requesting Operator. Such written notices may be sent in conjunction with a bill and shall be sent within 4 months of receiving the request for the notices to be sent. The Authority shall approve a pro-forma notice which shall indicate *inter alia*; where orders for the services of Requesting Operators for CPS Phase 2 services may be placed and where further information may be obtained. The text of these notices shall not include comments on the services offered by the Requesting Operator. Each Requesting Operator may request such letters to be sent no more than once.
- 3.5 The implementation of CPS Phase 2 shall conform to a Functional Specification to be developed and maintained by the Authority in consultation with all Providing Operators and all prospective Requesting Operators. The Authority shall publish and enforce the Functional Specification.
- 3.6 The ordering system for handling orders for CPS Phase 2 from a Subscriber of a Providing Operator shall conform to an Ordering System Specification to be prepared by all Providing Operators and all prospective Requesting Operators before the CPS Phase 2 may be formally requested. The ordering system shall provide for handling by additional Providing Operators and Requesting Operators.
- 3.7 Should the said operators be unable to agree by consensus on the terms of the Ordering System Specification, any of the said operators may refer the issue to the Authority.

- (a) The Authority shall convene an initial meeting between the said operators to prepare the Ordering System Specification and shall have the right to attend any subsequent related meetings.
- (b) The Authority shall have the right to appoint an independent chairperson for these meetings if the said operators fail to agree on the appointment of a chairperson.

3.8 The Ordering System Specification shall be lodged with the Authority for approval.

4 Payments between the operators

- 4.1 The Requesting Operator shall pay the Providing Operator a data amendment charge per exchange affected for the means to interpret Access Codes and route calls to the relevant interconnection points. The Authority shall publish an Annexure, which would specify the value of the data amendment charges.
- 4.2 The Requesting Operator shall pay the Providing Operator a CPS Phase 2 order charge and a per-operator order charge when placing an order for CPS Phase 2. The Authority shall publish an Annexure, which would specify the values of the CPS Phase 2 order charge and the per-operator order charge.
- 4.3 The Requesting Operator shall furthermore pay the Providing Operator an annual per-operator charge for CPS Phase 2. The Authority shall publish an Annexure, which would specify the value of the annual per-operator charge.
- 4.4 After completion of the Ordering System Specification, the Requesting Operator shall pay the Providing Operator the per-subscriber order charges or per-subscriber change charges for CPS Phase 2 as are specified in an Annexure to be published by the Authority.
- 4.5 The Requesting Operator shall pay the Providing Operator call charges for call origination under CPS Phase 1 and CPS Phase 2 at a rate that is higher than the corresponding call termination charges by a percentage to be specified in an Annexure.
- 4.6 The Authority shall have the right to amend the rates and charges published under subsections 4.1 to 4.5 at any time in order to relate the charges to the costs incurred by the Providing Operator.
- 4.7 No other charges shall be payable between the operators for CPS Phase 1 or CPS Phase 2 without the approval of the Authority.

5. Payments by subscribers

- 5.1 The Providing Operator shall not charge the Subscriber for calls that are handled by CPS Phase 1 or CPS Phase 2.
- 5.2 The Providing Operator shall not charge the Subscriber in relation to any request for CPS Phase 2 or any change to their pre-selection arrangements.
- 5.3 The Providing Operator may charge all Eligible Subscribers a call supplement in accordance with section 6.
- 5.4 Nothing in these regulations shall be interpreted to prohibit the Requesting Operator from offering a Subscriber an inducement to change service providers having due regard to fair competition principles.

6. Cost recovery for the initial set-up cost of CPS Phase 2

- 6.1 Each Providing Operator that provides CPS Phase 2 and whose retail prices are controlled by regulation for calls for which the Subscriber has the option to use CPS Phase 2 shall be entitled to charge a call supplement which are subject to approval by the Authority, to recover the initial set-up costs of CPS Phase 2.
- 6.2 The call supplement may be applied only to calls for which the Subscriber has the option to use CPS Phase 2. The call supplement may be applied irrespective of whether the subscriber invoked CPS Phase 1 or CPS Phase 2.
- 6.3 The call supplement may be applied to retail charges to Subscribers or to interconnection call origination charges.
- 6.4 The call supplement may be charged for a period of seven years from the date when the Providing Operator first introduced CPS Phase 2. The call supplement shall not exceed a maximum to be specified by the Authority, taking account of, but not constrained by the initial set-up costs incurred by the operator and the forecasts of traffic to numbers for which there is an option to use CPS Phase 2. After three years, the Authority shall review and adjust the maximum level of the call supplement on the basis of the call volumes experienced in the previous three years.
- 6.5 The Authority shall have the right to revise the call supplement provisions in sections 6.1 to 6.2 if the tariffing arrangements for a significant proportion of calls change from the current time based charges.

- 6.6 The Providing Operator(s) may propose and the Authority may approve an alternative method of cost recovery for CPS Phase 2.

7. Service requirements

- 7.1 The Requesting or Providing Operator shall not order CPS Phase 2 or change any CPS Phase 2 arrangements for any Subscriber unless it has received a request from the said Subscriber and shall not engage in Slamming or Winback.
- 7.2 All Providing Operators shall report to the Authority their performance against a list of quality of service parameters identified and published by the Authority in an Annexure. The Annexure shall specify the frequency of reporting.
- 7.3 All Providing Operators shall comply with a Code of Practice to be published and enforced by the Authority after consultation with the operators. This Code of Practice will *inter alia*, relate to marketing and sales practices and communications with subscribers who request CPS Phase 2.

Annexures

- Annexure A: Number ranges to which CPS Phase 1 and CPS Phase 2 applies
- Annexure B: Subscribers who are excluded from being Eligible Subscribers
- Annexure C: Charges for CPS Phase 1 and CPS Phase 2

A. Annexure of Number Ranges to which CPS Phase 1 and CPS Phase 2 applies

- (1) All direct dialled international calls;
- (2) All non-international direct dialled calls excluding:
 - (a) All calls to short code numbers including operator services

Note: All operator controlled calls are excluded from CPS Phase 1 and CPS Phase 2.

B. Annexure of Subscribers who are excluded from being Eligible Subscribers

- (1) Subscribers who receive a rental rebate from the Providing Operator as part of a public tariff scheme
- (2) Subscribers who are being provided with a temporary service (e.g. for special events).
- (3) Subscribers whose main tariff does not include rental.
- (4) Subscribers with payphone lines

C. Annexure of Charges for CPS Phase 1 and CPS Phase 2

- A(1) CPS Phase 1 and CPS Phase 2 Data amendment charge:**
- (a) R15 000 per order plus
 - a. R500 per digital exchange and per Access Code; and
 - b. R600 per analogue exchange and per Access Code:
 - (2) CPS Phase 2 order charge: R600 000
 - (3) CPS Phase 2 per-operator order charge: R400 000
 - (4) CPS Phase 2 annual per-operator charge: R200 000
 - (5) CPS Phase 2 per-Subscriber order charges or per-Subscriber change charges: To be determined later
- B Percentage by which interconnection call charges for Call Origination under CPS Phase 1 and CPS Phase 2 may exceed the corresponding Call Termination charges: 5%**
- C Call charge supplement for recovery of CPS Phase 2 set-up costs: To be determined later**

Proposed Approach to Carrier Pre-Selection¹

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1 Basic requirement and definitions

The requirement for carrier pre-selection is specified in the Act as follows:

“Carrier pre-selection

89C (1) *The Authority shall prescribe regulations-*

- (a) *establishing a framework for facilities in terms of which subscribers to a telecommunication service can access the services of an interconnected national*

¹ This is an explanatory note prepared by consultants working for ICASA to help respondents assess and comment on the proposed CPS regulations. This note does not have any legal status.

long distance telecommunication operator and an international telecommunication operator; and

(b) requiring all holders of public switched telecommunication services licences to phase in the facilities referred to in paragraph (a) by not later than 31 December 2003.

(2) The framework contemplated in subsection (1) shall ensure that the implementation and maintenance of the facilities referred to therein are non-discriminatory and give effect to section 2(j)."

In Section 1, Definitions, we find that:

"carrier pre-selection" means any facility by which subscribers to a telecommunication service can access the services of an interconnected national long-distance telecommunication operator and international telecommunication operator.

There appears to be some differences in use of the words "carrier pre-selection" probably related to the meaning assigned to "pre", which in this context appears to mean that the subscriber has already established an account with the indirect operator or service provider. The requirements elaborated in the Act and envisaged in the initial CPS Regulations would be satisfied by either carrier selection or carrier pre-selection if the European meanings of these terms are used, where carrier selection means call-by-call selection on the user side of the network termination point, and carrier pre-selection means a selection stored and implemented in the access network.

Using the European terminology, these differences are highly significant in terms of the costs, time needed for implementation and commercial effects. Therefore from this point onwards in this paper we will distinguish between:

Carrier Selection: the process whereby a subscriber may access an operator other than its pre-selected or providing operator on a call-by-call basis by adding a short Selection Code to the front of a dialled number. The Selection Code may be added either manually by the caller during the dialling process or automatically by a customer premises equipment such as an autodialler.

Carrier Pre-selection: the procedures by which a subscriber may designate its choices of Selected Operator(s) to provide its telecommunication services, with the choice being effected by the network of the providing operator without a prefix being added by the subscriber or an autodialler run by the subscriber.

In the proposed revised regulations, there are legal difficulties in using a definition of carrier pre-selection that is different from the one in the Act. In the regulations the following terms are therefore used:

CPS Phase 1 = Carrier selection

CPS Phase 2= Carrier pre-selection

Some explanation is needed about the terms used to refer to networks, especially in the proposed revised regulations.

The terms “requesting” and “providing” refer to the process of establishing CS or CPS. The providing operator is the operator of the access network. The requesting operator is the operator who offers services in competition with the providing operator and pays the providing operator for call origination. The requesting operator is also called an “indirect” operator because subscribers use its services indirectly via the providing or access operator. When the caller selects to have its calls handled by the indirect operator, that operator is called the “selected” operator.

2 Implementation

2.1 Network

Figure 1 shows four different implementation options for CS and CPS.

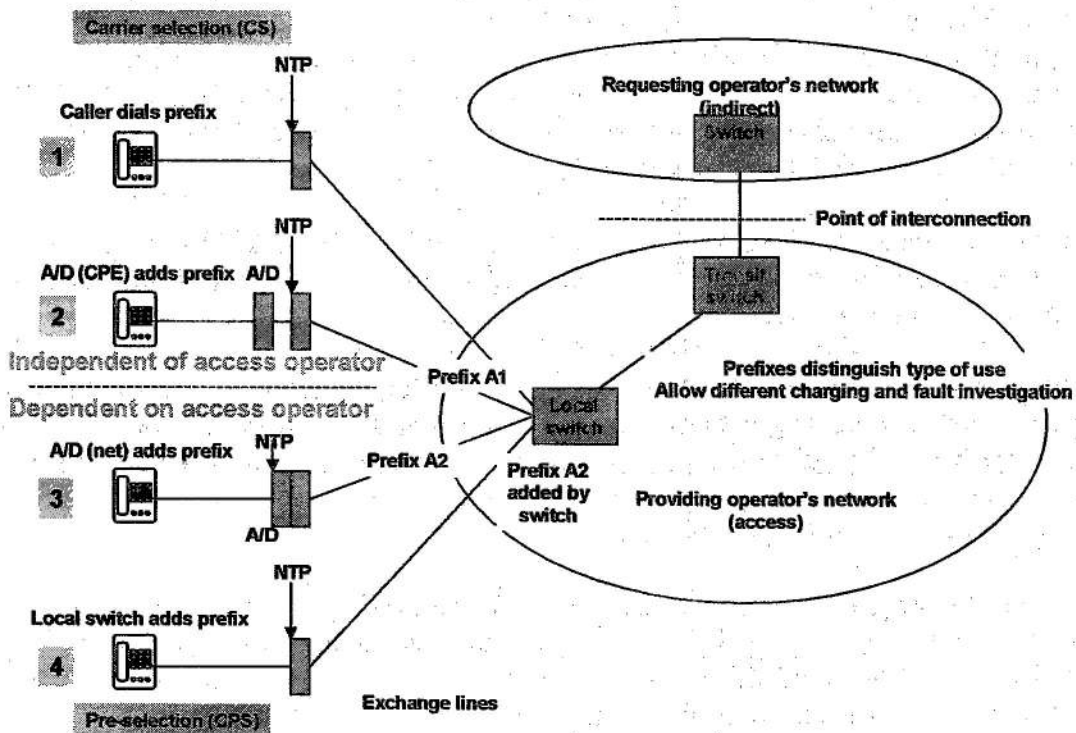


Figure 1: Carrier selection and carrier pre-selection implementation options

Option 1 shows the simplest form of CS where the caller dials the carrier selection code or prefix.

Option 2 shows the case where an autodialler is used to dial the carrier selection code. With this option the caller dials the called number as normal and experiences a slight delay while the autodialler analyses the called number and adds the carrier selection code. Autodiallers are commonly supplied by the new entrant networks to their subscribers. Some indirect operators charge for autodiallers and typical charges in Europe are £10 (R120) but in many cases they are supplied free of charge.

Option 3 is a form of CPS that is technically similar to CS except that the autodialler is supplied by the access operator. This means that the network termination point moves to the customer side of the autodialler. This solution was used in the UK for a short period but most access operators prefer Option 4.

Option 4 is the main form of CPS where the carrier selection code is added in the local switch as a result of information stored in relation to a specific exchange line. Subsequent reference to CPS refers to Option 4.

Both CS and CPS need interconnection for calls to pass from the access network operator to the selected operator, and for CS the establishment of interconnection will be the longest item. The issues concerning the basic establishment of interconnection will be discussed in another document.

In addition to interconnection and its billing, for CS, provided that the switches can already handle the number lengths, it will be necessary only for the access operator to load new routing data into its switches to route calls that are prefixed with the carrier selection code to the indirect operator. For CPS it will be necessary for the access operator to upgrade the software in the access network switches to provide carrier selection. Depending on the loading of the switch processor, some switches might require additional processor capacity to run CPS. The initial set-up costs of CPS are significant.

Figure 2 summarises the network related costs for CS and CPS. The figures are based on Oftel's work but adapted to the size of the Telkom network, however they should be regarded as very rough estimates only.

	CS	CPS
Initial set-up	Probably none	High Software: ~R70m IT systems: ~R90m Total: ~R160m
Per indirect operator set-up	R400,000	R400,000
Per customer	None	R60-100 per customer

Figure 2: Estimated costs for Telkom excluding interconnection

Annex A gives more information on the cost calculations.

2.2 Operations and Procedures

From an operational perspective CS and CPS are quite different. Figure 3 shows their differences. With CS the subscriber needs only to register with the indirect operator and can use CS immediately. With CPS there is an additional procedure where the indirect operator orders CPS to be applied by the access operator to the exchange line of the subscriber. In many cases the access operator will want to perform some procedure for verification of the order before changing the data in the local switch to apply the addition of the carrier selection code.

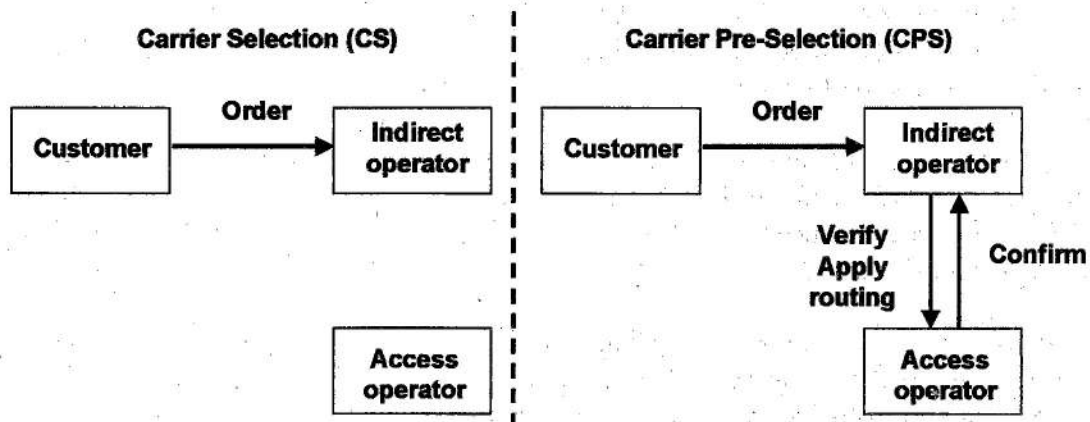


Figure 3: Comparison of procedures

Thus CPS involves a procedure to be conducted between the operators when each subscriber signs up for pre-selection, and this procedure is not needed for CS. The existence of the procedure means that the indirect operator is dependent on the access operator, and its reputation with the subscriber is at risk from errors made by the access operator. This means that the procedures need to be defined carefully and tested thoroughly before they are brought into operation.

The time to set-up CS and CPS are also quite different. For CPS, when it is first implemented, it is necessary to:

- Define and implement an ordering, fault handling and billing procedure between the operators for handling the subscriber orders
- Implement means by which orders received by the access network operator can be transferred to the subscribers local switch
- Define procedures to protect from or resolve incorrect or unauthorised orders.

These activities will involve considerable cost and it will be important that both the access operators and indirect operators participate in the development of the specification for the procedure.

2.3 Timescales

For the access operators, CS is simple and the data amendments can be implemented within the a few weeks.

CPS will take much longer. The first stage is for the operators to develop an agreed specification for the inter-operator ordering procedure to handle the subscribers' orders. The specification has to address complex issues such as validation of the subscriber's order, or the alternative of post order restoration if orders are subsequently found to be invalid, and procedures for handling all forms of errors. There are then three separate implementations for the access operator:

- Upgrading the switches
- Implementing the inter-operator order procedure
- Implementing changes to the internal network management system to implement the orders for pre-selection on the local switches

After implementation, the systems need thorough testing. To our knowledge the shortest time attempted is about 6 months. The shorter the time the more disruption to the on-going customer care work of the access operator and the greater the cost. A target implementation time of 10 months is probably the limit of what is reasonably achievable without excessive disruption. The 10 months will run from the placing of a formal order but such orders will not be able to be placed until both the Functional Specification and the Ordering System Specification have been finalised. Thus the 10 months will apply in a well defined situation.

2.4 Promotion of competition

Both CS and CPS will promote competition by allowing subscribers to have access to indirect operators. However CS and CPS each have different merits and roles.

CS is better suited to the early introduction of competition as it is quick and easy for the access operator to implement and it offers the subscribers the following advantages:

- They can try the services of the indirect operators immediately they sign for their account by dialling the prefixes themselves
- They can be sent autodiallers by the indirect operators so that they can revert to normal dialling
- Their existing services with the access operator are unchanged and therefore they are not taking any risks

CPS is better suited to the situation when the indirect operators have become established with a good reputation with their subscribers because:

- CPS takes longer to establish and is more expensive to establish

- The application of CPS takes at least several days (it takes up to 3 weeks in UK) and subscribers will want to try the new service as soon as they sign up. Therefore most subscribers try a service using CS and then change over to CPS
- CPS procedures can be problematical initially and need thorough testing.
- With CPS the indirect operator is dependent on the access operator for amending subscriber specific data in the switches. If these procedures go wrong the subscriber could have problems obtaining any service and the reputation of the indirect operator would suffer more than that of the access operator.
- Depending on the switch software, CPS may be incompatible with some service features such as call barring and call diversion and some subscribers may value these features highly such that they would not use CPS but would use CS.

However in the longer run CPS offers the following advantages to indirect operators:

- It does not rely on subscribers installing auto-diallers correctly nor on their operating correctly
- The subscriber retention is probably better as changing CPS provider takes time
- The indirect operator does not have to handle the re-programming of autodiallers due to number changes as all this is handled by the access operator

Nearly all countries have started first with CS and then subsequently introduced CPS.

2.5 Approach

We recommend that both CS and CPS should be made available in principle.

In view of the differences between CS and CPS, and the high costs of introducing CPS, we recommend that the indirect operators should be able to choose if and when they want to start using CPS. We think that is very important, especially in the early days of duopoly competition, to allow the SNO to make its own commercial decisions over the choice between CS, CPS or both. Consequently we recommend that the indirect operators should have freedom to choose when to implement CS and CPS, and that access operators should not be required to make investments to support CPS until it has been ordered by an indirect operator.

This approach would be open to abuse if an indirect operator could order CPS at no cost to itself. It could then place an order and cause the access operator to incur expenses but then fail to market the service. We therefore recommend that during the duopoly period, the SNO should be required to pay a token but significant amount for the establishment of CPS. This issue is discussed further below in the analysis of charging principles.

After the duopoly period ends, if full competition is introduced, several new operators are likely to enter the market. If CPS has already been implemented, these new operators will be able to benefit from the existing implementation. If CPS has not been implemented, we recommend that ICASA should consult with the new entrants to see if there is a general demand for CPS.

3 Costs and charges

This section covers two issues:

- Identifying the different cost categories for the access network operator
- Deciding how the costs should be recovered in charges

This section considers only those costs that relate to carrier selection and pre-selection. The issues concerning basic interconnection for call termination are addressed elsewhere.

3.1 Costs

There are three categories of costs for the providing operator that are normally considered for CS and CPS:

- Initial set-up costs
- Per-operator set-up costs
- The per-customer set up costs

In addition there is a very slight increase in processor load for each call under CPS but this is normally considered to be negligible.

3.1.1 Interconnection and call origination

The introduction of new fixed network operators will require arrangements for interconnection that are more extensive than those for the mobile networks and that introduce different levels of interconnection, eg local, regional (single transit) and nationwide (double transit). These issues will be addressed for call termination in a separate paper.

CS and CPS require interconnection for call origination. Technically this is the mirror image of call termination except that:

- There are slightly greater costs due to the processor loading in the originating switch being greater than that in the terminating switch
- There are additional costs for failed call attempts

3.1.2 Carrier selection (CS)

The initial set-up costs of CS will be negligible provided that the switches are already capable of handling the increased number length that results from the addition of the carrier selection code to the called party number.

The per-operator set-up costs are primarily the addition of entries in routing tables for switches.

The per-customer set up costs are zero.

3.1.3 Carrier pre-selection (CPS)

The initial set-up costs of CPS will include:

- Development of the specification for the procedures

- Upgrading of switch software
- Implementation of the inter-operator ordering system
- Implementation of the means to apply the orders to the subscriber's line at the local switch

The per-operator set-up costs include:

- Linking and testing the inter-operator ordering systems of the two operators
- The addition of entries in routing tables for switches

The per-customer set up costs include:

- Operation of the ordering system for both successful and failed applications of CPS
- Verification of the order
- Investigations of problems

The per call costs involve a small additional conveyance cost for extra processing in the originating local switch.

3.2 Charging principles

The charging principles are concerned with deciding which party should bear each category of costs.

Six principles have been applied commonly by regulators including Oftel and the study for the European Commission. They are:

- *cost causation* costs should be recovered from those whose actions cause the costs to be incurred at the margin;
- *distribution of benefits* costs should be recovered from the beneficiaries especially where there are externalities;
- *effective competition* the mechanism for cost recovery should not undermine or weaken the pressures for effective competition;
- *cost minimisation* the mechanism for cost recovery should ensure that there are strong incentives to minimise costs;
- *reciprocity* where services are provided reciprocally, charges should also be reciprocal;
- *practicability* the mechanism for cost recovery needs to be practicable and relatively easy to implement.

Oftel has commented that the application of these principles should normally start with cost causation and then the other principles should be used to moderate the results of applying cost causation².

We now consider the application of these principles to the different cost categories.

3.2.1 Interconnection and call origination

Interconnection including call termination will be covered in a separate paper.

Call origination is similar to call termination in that it is a "micro-monopoly" service because the user of the service (the indirect operator) does not have any choice over the supplier of the service but has to use the access operator already chosen by the subscriber. Furthermore the access operator has an incentive to price call origination as high as possible to make CS expensive and reduce the chance of losing traffic. We therefore consider that in principle call origination charges should be regulated.

Since call origination is a mirror image of call termination but with additional small costs, we recommend that call origination payable by the selected operator should be charged at 5% above the call termination rate.

3.2.2 Initial set-up charges

The initial set-up costs will be low or negligible for CS but large for CPS. The application of the charging principles to the CPS set-up costs is the most difficult issue to be decided.

The Study for the Commission recommends that each operator should bear its own costs, and this is the practice in most countries. Where the access operator is a regulated incumbent whose prices are controlled, this raises the question of how the operator will recover these costs. The options are:

- Increasing prices for specific services but the choice of services needs to be determined
- Charging the shareholders through reduced profits
- Charging the staff through accelerated staff reductions or pay cuts
- Degrading the quality of the existing services

Only those regulators who use detailed cost element models for the incumbent operators have seriously addressed these issues.

The application of cost causation indicates that the set-up costs should be borne by the operator who requests CPS, however this principle is not easy to apply because:

² Oftel: Implementation of Carrier Pre-Selection in the UK, February 1999.

- The costs will not be fully known until implementation has taken place because the costs of implementing the per customer ordering system and of the means to apply the orders to the local switches will not be easy to determine in advance.
- Although the SNO will be the first party to order CPS, other parties are also likely to use the facilities implemented for the SNO after further liberalisation has taken place. The number of parties to use them is difficult to predict and so there is a substantial problem of apportioning the costs between the parties who will eventually use CPS in accordance with the principle of distribution of benefits.

There was extensive debate on this issue in the UK, but the debate was influenced by the fact that the requirement to provide CPS was imposed by a European Directive and Oftel was obliged to require BT to implement it. In South Africa, the requirements of the Act are met by CS. A further difference was that the UK market for CS was already well developed and a number of operators who used CS indicated their wish also to use CPS. Oftel took the view that the principle of cost causation did not apply easily because the regulation, rather than the other operators, was causing BT to incur the costs. However the principles of the:

- distribution of benefits and
- effective competition, which implies competitive neutrality,

suggest that the costs should be borne ultimately by all subscribers in proportion to their use of those calls for which CPS could be used.

Oftel argued that both calls that use CPS and ones that do not should carry a supplement calculated to recover the initial set-up costs over 5 years. However the supplement should apply only to calls for which CPS could be used, since the existence of CPS would create downward price pressure on BT's tariffs that would benefit all callers to numbers for which CPS could be used, not just those that use CPS. The supplement would thus be applied to BT's retail tariffs and to BT's origination rates.

The call supplement eventually determined was calculated to run for 5 years, which was a proposal by BT that was not disputed. The figures for the combined interim autodialler solution and the final switch based solution were:

Average figure: 0.0105 pence per minute (R0.00137)

Which was apportioned into:

Day:	0.0153 pence per minute (R0.00199)
Evening :	0.0070 pence per minute (R0.00091)
Weekend:	0.0055 pence per minute (R0.00072)

These figures were based on forecasts of traffic. If we assume that the cost of switch based CPS accounts for 80% of the combined costs, then the switch based CPS supplement would be:

Average figure: 0.0084 pence per minute (R0.00109)

Day: 0.0122 pence per minute (R0.00159)

Evening : 0.0056 pence per minute (R0.00073)

Weekend: 0.0044 pence per minute (R0.00057)

Since the typical call charge is 1 pence per minute (excluding mobile and international), this represents about 0.8% (of 1 ppm).

In deciding how costs should be recovered in South Africa, the following factors need to be taken onto account:

- CPS is not required explicitly by regulation but could be requested by an operator
- The major cost is the initial set-up and once this cost has been incurred, the facility will be available for other operators when liberalisation is extended
- The only operator who can request CPS in the very near future will be the SNO but if and when there is further liberalisation other operators may also become able to request it

Reviewing the charging principles:

- *cost causation* implies that an operator who requests CPS should pay something towards the initial set-up costs. Without such a payment there is a risk that CPS will be requested but not adequately used;
- *distribution of benefits* implies that subscribers who make calls to numbers for which CPS could be used should bear the costs, as per the Oftel argument;
- *effective competition* implies that the treatment of costs should be competitively neutral and promote competition. This means that the formulation should be equally capable of application to access operators other than Telkom;
- *cost minimisation* implies that there should be some incentive to minimise costs;
- *reciprocity* implies that the cost recovery mechanisms for all operators that provide CPS should be the same and that the charges should be the same for similar services;
- *practicability* implies that the cost recovery mechanisms should be simple, low cost and easy to implement.

In general, we think that the size of the costs and the distribution of benefits makes the solution of a supplement on calls to numbers that can be reached with CPS the best way to recover most of the set-up costs. However, in view of the differences between the UK and South Africa, we think that operators who request CPS should be required to pay at least a token contribution towards the costs in line with the principle of cost causation.

We think that this is particularly necessary because there will also be CS, and the SNO needs to make a proper commercial judgement on whether CPS is sufficiently better than CS to justify the investment.

At this point there is a choice between making charges cost based and fixing charges by regulation. Oftel made the charges cost based and was able to make this at least reasonably meaningful because it has developed a highly detailed model of BT's costs. Indeed the existence of this model, combined with price capping, makes it difficult for Oftel to impose any additional costs on BT without giving BT some means of recovering them. The cost based approach, however, does not create incentives for cost minimisation. ICASA does not yet have a model of Telkom's costs at the same level of detail as Oftel does of BT's costs, therefore the cost based approach is vulnerable to the inclusion of costs that are not wholly attributable to CPS. The principle of practicability also applies. Pursuing detailed cost modelling is difficult and consumes resources, and at the end of the day the level of the supplement in the UK was relatively small at 0.8%.

These considerations make us reluctant to attempt to pursue a detailed cost based approach at least in the short term, as there is not the information to do it.

We therefore propose the following approach that balances the principles of cost causation and distribution of benefits:

- An operator who requests CPS should pay a nominal order charge as a contribution towards the initial set-up costs. This charge will be set well below costs but will be sufficient to give a cost causation indication that cannot be ignored commercially. We propose the figure of R600k. This figure will be reciprocal and will apply to all requests for CPS from a fixed network that is potentially nationwide. Because there may be many requests for CPS eventually there may be many such payments to Telkom. ICASA will therefore reserve the right to reduce these figures retrospectively.
- The majority of the cost of providing CPS should be recovered through a supplement added to the price of all calls to numbers that can be reached by CPS, irrespective of whether CPS is used by the caller. This supplement will apply to both retail and call-origination interconnection charges. The figure will be determined by ICASA when CPS is ordered. It will be based initially on an estimate of Telkom's costs and traffic forecasts amortised over a 7 year period, and will be adjustable after 3 years only in respect of traffic not of Telkom's actual costs (in order to create an incentive for cost minimisation). We recommend the 7 year period instead of Oftel's 5 year period because the market is less developed and there is a duopoly period.
- ICASA will reserve the right to revise these arrangements at any time to a more detailed cost basis.

- ICASA will reserve the right to revise and recalculate the supplements if the payment arrangements for calls migrates significantly towards including calls with monthly rental.

The initial set-up costs will be very different for Telkom and other operators and these proposals allow the call supplements to be different and so to reflect these differences. The order charges however will be reciprocal and the same for all operators of potentially nationwide networks.

3.2.3 Per-operator set-up charges

Per-operator set-up costs are normally paid by the requesting operator, and we think that this is appropriate on the grounds of cost causation. The same issues arise as to whether these charges should be cost based or should be set by the regulator.

As in the case of the initial set-up costs, we recommend that the charge is set by ICASA to create an incentive for cost minimisation, and we propose a figure of R400k and an annual charge of R200k, which have been set by reference to the charges determined by Ofitel for BT. These figures will apply reciprocally to all operators. Again ICASA will reserve the right to revise these figures.

3.2.4 Per-customer set-up charges

Per-customer set-up costs are normally paid by the requesting operator, and again we think that this is appropriate on the grounds of cost causation.

Ofitel has set the several different charges depending on the outcome of the inter-operator process. They include:

- Order rejection
- Order cancellation
- Order modification
- Successful orders

The items to be covered and the levels of these charges will depend very much on the details of the inter-operator procedure and it is not possible now to determine what they should be. In principle, however, we recommend that they should be reciprocal and that the same charge should apply to all operators.

4 Specifications for CPS

Two levels of specifications are needed for CPS:

- A short functional specification that sets the main technical parameters for CPS
- A detailed ordering system specification for the CPS ordering system

4.1 Functional specification

This short document would specify in slightly more detail the top level technical requirements for CS and CPS, including the obligations on call routing. OfTel has published such a specification and the functional specification for South Africa can be based on the OfTel document.

We propose that ICASA should prepare and publish the functional specification in consultation with the operators – a draft has already been prepared. The regulations should require conformance to this specification.

Because there are various issues concerning CPS that need some discussion between the new entrant and Telkom before the Functional Specification can be finalised, we propose to issue only a draft version when the Regulations are issued so that there will be opportunity to review it in conjunction with all affected operators before issuing the formal version.

4.2 Ordering System Specification

A detailed ordering system specification is needed for the inter-operator procedure to support CPS. We think that it is essential that the operators lead on the development of this specification because it involves interactions between their customer service systems.

We recommend that ICASA should convene an initial meeting between the operators concerned to start the development of this specification and should provide a “starter” input to the work that draws upon specifications that have been developed for other countries.

Although the primary intention is that the operators should develop this specification themselves, there is a risk that it may take time to establish the good technical cooperation that can be achieved even between competitors. Therefore although the hope is that the operators will appoint their own chairman for this work, we recommend that ICASA should have the powers to appoint a chairman if necessary and to determine any issues that the operators cannot agree on. We recommend that ICASA should attend the meetings of the operators as an observer at least for the early stages of the work. Its attendance will have a moderating influence and give the staff an opportunity to become more familiar with the detailed issues so that they will be ready to resolve disputes if they arise.

5 Relevant calls

The Act requires CS and CPS to be provided for access to the services of:

- A national long distance operator
- An international operator

This seems to have been interpreted as access to long distance calls and to international calls.

The Act however relates the access to unspecified services of operators that fall into the category of a national long distance operator or an international operator.

A practical consideration is that whilst it is simple for the Telkom's switches to determine which are international calls, it is not simple to distinguish between local and long distance calls as the distinction does not correlate with the early digits of the dialled number. In the UK the only distinction in category is between international and national calls.

Therefore on a combination of grounds of interpretation of the Act and on practicality, we propose to require CPS for the following categories:

- National calls
- International calls
- National and international calls

Calls made via the operator and reverse charge calls would be excluded, but calls to mobile operators and calls to specially tariffed numbers would be included. Calls to short code numbers are also excluded.

The new entrant may not be able to offer a discount to Telkom on all calls and this is a factor for commercial consideration.

There is also the possibility that the new entrant may not be able to terminate calls to some destinations in the early stages of its operations and this could cause problems for subscribers if they do not understand the use of carrier selection codes to over-ride the pre-selection settings. Therefore we propose to allow scope for the Authority to exclude particular ranges of numbers from CPS for national calls by listing them in a schedule.

Because the caller is in active control of CS calls, we do not propose to allow any additional exclusions for CS.

6 Eligible subscribers

In principle all subscribers will be eligible for CS and CPS regardless of their credit status but with the exception of:

- Subscribers whose accounts are suspended for non-payment
- Public or managed pay-telephones
- Subscribers who receive a rental rebate from the Providing Operator as part of a public tariff scheme (NB: rebates to employees do not count under this item)

- Subscribers who are being provided with a temporary service (e.g. for special events).
- Subscribers who use tariffs that do not include rental.

The categories of non-eligible subscribers will be listed in a schedule published by the Authority.

7 Quality of Service reporting

We think that it will be important for ICASA to monitor quality of service with respect to CS and CPS. The ETSI Technical Report TR 101 949 specifies a menu of parameters that can be used. We recommend that ICASA should maintain a schedule of relevant parameters against which the providing operators will be required to report on a regular basis. The choice of parameters for CPS will depend to some extent on the details of the ordering procedure, and so the schedule may not need to be prepared until close to the date when CPS is introduced. The schedule will specify the reporting period.

8 Marketing and Winback

Experience in other countries has shown that controls are needed on the potential activities of all parties in marketing and sales and the providers of CPS in trying to win back subscribers who have chosen CPS. We recommend that the regulations should require compliance with a Code of Practice on marketing and winback to be published by ICASA. The Code will be prepared after the inter-operator procedure has been specified because the Code will depend in part on the details of the procedure.

9 Interconnection agreements

Whilst the majority of the interconnection issues will be dealt with through the proposed supplements to the Interconnection Guidelines, one aspect needs to be mentioned here.

Operators normally establish interconnection contracts between each other, and this is to be encouraged. The preparation of the interconnection contracts, however, takes time and the interconnection guidelines allow 3 months for this process. Since establishing interconnection is likely to be on the critical path for the SNO, we recommend that a requirement is introduced through the CPS regulations and a supplement to the Interconnection Guidelines to enable the SNO to order interconnection before an interconnection contract has been finalised. This provision will prevent the lead time for establishing interconnection being added to the three months for developing the contract. Such an order would need to be accompanied with a non-refundable advance payment that would be credited against future payments under the contract.

10 Conclusions

1 We recommend that ICASA should facilitate the introduction of both CS and CPS, but that the operators concerned should decide on a commercial basis whether they want both solutions or only CS, since either solution will meet the requirements of the Act.

2 We note that CS is probably better suited to the early introduction of competition whereas CPS may be more suitable for established operators. We therefore recommend that the operators should be free to choose when they want to request CPS.

3 We recommend that ICASA should develop a short functional specification in consultation with the operators.

4 We recommend that the operator should take the lead in developing a detailed specification for inter-operator procedures ahead of any request for implementation. We recommend that ICASA should convene an initial meeting between the operators concerned to start the development of this specification and should provide a "starter" input to the work that draws upon specifications that have been developed for other countries. ICASA should have the powers to appoint a chairman and to determine any issues that the operators cannot agree on. We recommend that ICASA should attend the meetings of the operators as an observer at least for the early stages of the work.

5 We recommend that 10 months should be the target for implementation of CPS after the ordering system specification has been agreed.

6 We recommend that call origination rates should be set at 5% above call termination rates.

7 We recommend that the cost recovery for CPS should be as summarised in figure 4.

Item	Payment between operators	Cost recovery	Comments	Main principles applied
Initial set-up	Order payment of R600k (reciprocal)	Call supplement over 7 years on all calls for which CPS could be used. ICASA to determine rate for each operator. Revision based on real traffic after 3 years	ICASA able to revise at any time to a more cost based approach. ICASA able to revise if calls included in monthly rentals	Cost causation Distribution of benefits Cost minimisation
Per	R400k plus R200k	Approximately	ICASA able to	Cost causation

operator set-up	pa (reciprocal)	from operator payments	revise at any time.	Distribution of benefits Cost minimisation
Per customer set-up	To be determined by ICASA when procedures are finalised	Approximately from operator payments	ICASA able to revise at any time.	Cost causation Distribution of benefits Cost minimisation

Figure 4: Cost recovery summary

Where figures are proposed, they should be regarded as tentative proposals for discussion. In the figure, the term "reciprocal" means that if say Telkom orders CPS from the SNO it pay the same amounts to the SNO as the SNO would pay to Telkom.

Annex A: Cost Information

A1 CPS Initial set-up

There is very little public information about the initial set-up costs of new software for the switches. Since most regulators have required the operators to bear these costs themselves, data has not reached the public domain. A study for the European Commission estimates the costs to be R3m-R8m per switch.

BT's costs declared to Ofitel for set-up including both the software for the switches and the ordering systems (see below) were £52m (R676m). If we assume that 60% of this costs is attributable to software upgrades then the costs are:

- BT software upgrades: £31m (R405m)
- BT IT systems: £21m (R270m)

Assuming that the costs for the software upgrades would be scaled in proportion to the number of local exchanges (120 for Telkom vs 700 for BT), this gives:

- Telkom software upgrades: £5.3m (R70m)

If we then assume that the remainder of these costs for IT systems would be one third those of BT because the system costs would be lower because of the smaller size but not proportionally lower, then we calculate:

Telkom IT systems: £6.9m (R90m)

This gives the total initial set-up costs as R160m.

A2 Per operator set-up

Ofitel determined cost based charges for BT's per operator set-up and on-going costs as

- BT Per operator set-up: £22,730 (R295k)
- BT Per operator on-going: £16,800 (R218k) pa

Telkom's costs per operator are likely to be higher initially as there will be fewer operators but the systems may be simpler and so we estimate Telkom's costs very roughly as:

- Telkom per operator set-up: R400,000
- Telkom per operator on-going: R200,000 pa

A3 Per customer set-up

The per customer costs have been estimated for the Commission at R150/subscriber, and were determined by Ofitel as approximately R60.

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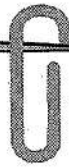
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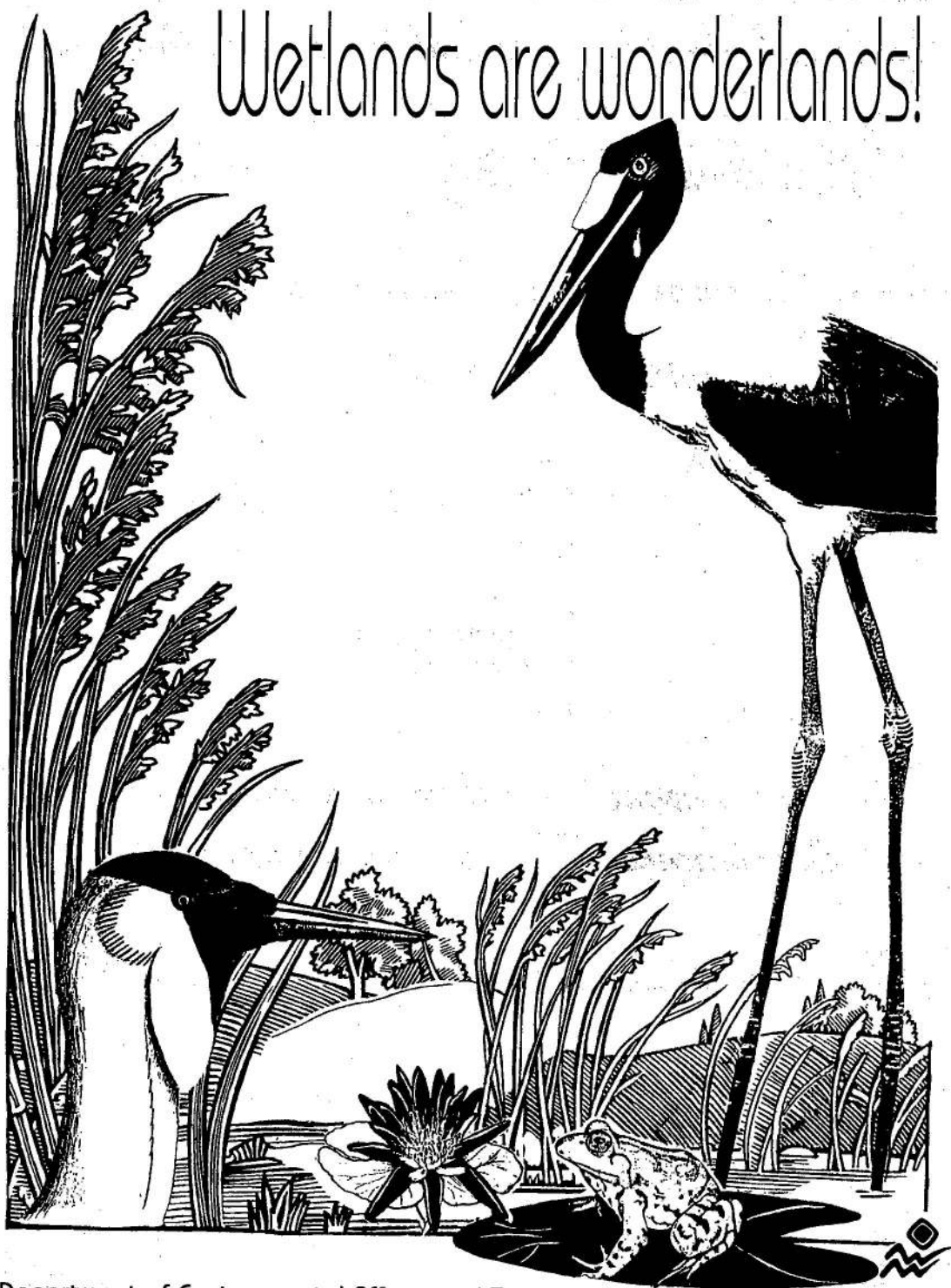
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