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INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

BLUE BOOK

VOLUME II – FASCICLE II.1

GENERAL TARIFF PRINCIPLES CHARGING AND ACCOUNTING IN INTERNATIONAL TELECOMMUNICATIONS SERVICES

SERIES D RECOMMENDATIONS



IXTH PLENARY ASSEMBLY
MELBOURNE, 14-25 NOVEMBER 1988

Geneva 1989



COVERING NOTE

GENERAL SECRETARIAT INTERNATIONAL TELECOMMUNICATION UNION

CORRIGENDUM No. 1

Geneva, June 1990

FASCICLE II.1

IXth PLENARY ASSEMBLY OF THE CCITT
MELBOURNE, 1988

Please insert the following corrections to the texts of Recommendations of D.43, D.90 and D.151 in Fascicle II.1 of Volume II of the CCITT Blue Book.

1. *Recommendation D.43*

In the *English version only*, the title of Recommendation D.43 should read as follows:

“Partial and total refund of charges in the international *public telegram* service”.

The same amendment should also be made in the Table of Contents on page VIII.

2. *Recommendation D.90*

Paragraphs L58 and L59 of Recommendation D.90 should read as follows:

“L58 3.10 All maritime accounts shall be paid by the accounting authority without delay and in any case within *four months* after dispatch of the account ...”.

The reasons for this amendment are given in Report COM III-R 4 of the meeting of Working Party III/5 held in Geneva on 19 October 1989.

“L59 3.11 If international maritime accounts remain unpaid after *four months* ...”.

In addition, the reference to footnote 1 at the end of §§ 3.10 and 3.11 and the footnote 1 at the bottom of page 113 should be deleted.

3. *Recommendation D.151*

In the *English version only*, the first paragraph of Section 4 should read as follows:

“The principles for the determination of the total accounting rate are *the same as in § 3, except that Administrations of continental countries operating a radiotelephone circuit may agree ...*”.



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IMPORTANT PRELIMINARY NOTES

1 The Questions entrusted to each Study Group for the Study Period 1989-1992 can be found in Contribution No. 1 to that Study Group.

2 In this Volume, the expression "Administration" is used for shortness to indicate both a telecommunication Administration and a recognized private operating agency.

3 In all the Recommendations¹⁾ where reference is made to the Telegraph and Telephone Regulations (Final Acts of the World Administrative Telegraph and Telephone Conference, Geneva, 1973) it is to be replaced by the following, as from the date of entry into force of the new International Telecommunication Regulations adopted by the WATTC-88 in Melbourne:

"Reference

[] Final Acts of the World Administrative Telegraph and Telephone Conference, International Telecommunication Regulations, ITU, Melbourne, 1988."

¹⁾ See in particular Recommendations D.30, D.40, D.42, D.70, D.90, D.93, D.98, D.170, D.193, D.195, D.220, D.302 R and D.390 R.

PART I

Recommendation D.000

TERMS AND DEFINITIONS

Recommendations D.1 to D.251

GENERAL TARIFF PRINCIPLES, CHARGING AND ACCOUNTING IN INTERNATIONAL TELECOMMUNICATIONS SERVICES

RECOMMENDATIONS FOR GENERAL APPLICATION

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TERMS AND DEFINITIONS FOR THE SERIES D RECOMMENDATIONS

(Malaga-Torremolinos, 1984; amended at Melbourne, 1988)

Preamble

This Recommendation sets out the general principles for developing and using terms and definitions in the Series D Recommendations. The Recommendation also contains a list of definitions applicable to all Series D Recommendations.

1 Requirements

1.1 There is a need for a structured approach to developing and using terms and definitions in Series D Recommendations. Such an approach will enhance the clarity of Recommendations and the effectiveness of communications related to the development and application of Recommendations.

1.2 There are many existing terms originally defined in technical/operational contexts which are being used with tariff connotations. There is a need for the qualification and/or definition of such terms for tariffification purposes.

2 General Principles

2.1 It is desirable that, to the greatest extent possible, terms used in Series D Recommendations be applied with the same and unique definition in these Recommendations (§ 3).

2.2 It is recognized that for certain reasons (e.g. increased precision) in certain cases, the general definition given as per § 3 might not be appropriate in a specific Recommendation. In such instances the qualification of the term for use in that specific Recommendation should be indicated by a footnote.

2.3 In the absence of a general definition as per § 3, terms that may give rise to misinterpretation should be defined within the specific Recommendation.

2.4 In cases of non-tariff terms used in Series D Recommendations, their use should generally be consistent with Fascicle X.1 of the CCITT Book dealing with Terms and Definitions.

3 List of Definitions

A list of terms with definitions applicable to Series D Recommendations is provided in Annex A.

ANNEX A

(to Recommendation D.000)

Definitions

A.1 accounting rate

F: taxe de répartition

S: tasa de distribución

The rate agreed between Administrations in a given relation that is used for the establishment of international accounts.¹⁾

¹⁾ Definition adopted by the World Administration Telegraph and Telephone Conference, Melbourne, 1988.

A.2 collection charge

F: taxe de perception

S: tasa de percepción

The charge established and collected by an Administration from its customers for the use of an international telecommunication service.

A.3 customer

F: client

S: cliente

The individual or entity who, or which, obtains an international service/facility from an Administration and is responsible for payment of all charges and rentals due to that Administration.

A.4 user

F: utilisateur

S: usuario

The individual or entity designated by the customer, individually or by class, as having access to the service/facility and having such authorization, individually or by class, as may be required by the Administrations concerned.

A.5 lease

F: location

S: arriendo

An agreement whereby a certain facility is made available by an Administration or Administrations to a customer or customers for his or their exclusive use.

A.6 rental

F: redevance

S: tarifa de arriendo (alquiler)

Payment(s) due to Administrations for the provision of certain facilities or access to certain facilities/services for designated periods.

A.7 full refund

F: remboursement complet

S: reembolso total

Reimbursement to the customer of the total charges paid to the Administration for the service/facility in question.

A.8 partial refund

F: remboursement partiel

S: reembolso parcial

Reimbursement to the customer of only part of the total charges paid to the Administration for the service/facility in question.

A.9 relation

F: relation

S: relación

Exchange of traffic between two terminal countries, always referring to a specific service if there is between their Administrations:

- a) a means for the exchange of traffic in that specific service either over direct circuits (direct relation), or via a point of transit in a third country (indirect relation), and
- b) normally, the settlement of accounts.

A.10 origin country (or Administration)

F: pays (ou Administration) d'origine

S: país (o Administración) de origen

The country in which the call is originating or in which a message is deposited.

A.11 destination country (or Administration)

F: pays (ou Administration) de destination

S: país (o Administración) de destino

The country in which the called subscriber is located or in which a message is to be delivered.

A.12 terminal country (or Administration)

F: pays (ou Administration) terminal(e)

S: país (o Administración) terminal

An origin country and a destination country in a given relation.

A.13 transit country (or Administration)

F: pays (ou Administration) de transit

S: país (o Administración) de tránsito

A country through which traffic is routed between two terminal countries.

A.13.1 direct-transit country

F: pays de transit direct

S: país de tránsito directo

A transit country through which traffic is routed on direct circuits, i.e. on circuits provided for the exclusive use of other countries.

A.13.2 switched-transit country

F: pays de transit en commutation

S: país de tránsito con conmutación

A transit country through which traffic is routed by switching in an international transit exchange.

A.14 international circuit

F: circuit international

S: circuito internacional

A circuit between two international exchanges situated in different countries.

A.14.1 continental circuit

F: circuit continental

S: circuito continental

An international circuit between two international exchanges situated in two different countries in the same continent.

A.14.2 intercontinental circuit

F: circuit intercontinental

S: circuito intercontinental

An international circuit between two international exchanges in different continents.

A.15 national extension

F: prolongement national

S: prolongación nacional

The part of the connection which extends from the national side of the international exchange to the subscribers.

A.16 Remuneration for shared use and exclusive use

A.16.1 remuneration for shared use of circuits and equipment

F: rémunération pour utilisation en commun des circuit et des installations

S: remuneración por utilización compartida de los circuitos y de las instalaciones

The expression "remuneration for shared use" refers to the remuneration paid to the Administration of a country **P** which makes its facilities available to a number of Administrations of other countries L_1, L_2, \dots, L_n for the routing of different international traffic streams. It may apply either to circuits or to switching equipment. Under the control of the owner Administration, the use of such facilities may be shared in any appropriate manner with other Administrations (including the Administration which owns them). The latter sets the price for the shared use of its facilities:

- a) either according to the number of traffic units,
- b) or by a fixed amount covering a certain period of time and based on the estimated volume of traffic and its time characteristics.

A.16.2 remuneration for exclusive use of circuits

F: rémunération pour utilisation exclusive des circuits

S: remuneración por utilización exclusiva de los circuitos

A.16.2.1 The *remuneration for exclusive use* is the remuneration paid to the Administration of a country which makes its circuits available for direct transit, each circuit being assigned on an exclusive basis. The volume of traffic, its origin and its fluctuations in time are not the concern of the owner Administration and have no effect on the amount of the remuneration, which is paid circuit by circuit. The owner does not control the traffic routed over the circuit. This is the conventional lease arrangement between Administrations.

A.16.2.2 For further clarification, it should be mentioned that:

- a) the general term "*leáse*" (in French: *location*) used until now applies only to the case cited in § A.16.2.1 above where exclusive use is granted;
- b) the term "*owner*" in these definitions refers to an Administration which receives the remuneration and which grants the rights to another Administration. The owner may have real ownership or the indefeasible right of use of the facilities.

A.17 flat-rate price per circuit procedure

F: méthode de rémunération forfaitaire par circuit

S: procedimiento de remuneración a tanto alzado por circuito

The procedure which consists of remunerating an Administration on the basis of a flat-rate price per circuit.

A.18 traffic-unit price procedure

F: méthode de rémunération par unité de trafic

S: procedimiento de remuneración por unidad de tráfico

The procedure whereby remuneration of an Administration is based on traffic units.

A.19 accounting revenue division procedure

F: méthode de division des recettes de répartition

S: procedimiento de división de los ingresos de distribución

The procedure whereby accounting revenue is shared between terminal Administrations, and, as appropriate, between the Administrations of transit countries.

A.20 accounting rate share

F: quote-part de répartition

S: parte alicuota de distribución

The part of the accounting rate corresponding to the facilities made available in each country; this share is fixed by agreement among the Administrations.

A.21 terminal share

F: quote-part terminale

S: parte alicuota terminal

The part of the accounting rate which is due to a terminal Administration.

A.22 transit share

F: quote-part de transit

S: parte alicuota de tránsito

The part of the accounting rate which is due to an intermediate Administration whose territory, installations or circuits are used to route traffic between two terminal countries.

A.23 per word tariff system

F: système de tarification par mot

S: sistema de tarificación por palabra

In the per word tariff system, rates are established per word purely and simply, the word-counting provisions of the relevant CCITT Recommendations being applied. A minimum rate per telegram corresponding to the rate for a certain number of words is applied.

In the per word tariff system, the accounting rate is the rate per word purely and simply of an ordinary private telegram without any special system.

A.24 binary tariff system

F: système de tarification binaire

S: sistema binario de tarificación

The binary tariff system has two components:

- a) a fixed component representing the costs involved in the acceptance and delivery of a telegram (fixed charge), and
- b) a component proportional to the length of the telegram representing the costs involved in transmitting and receiving the telegram and the cost of using the telegraph network (charge per word).

In this binary tariff system, the accounting rate has the two components described in a) and b) above. No minimum rate for a certain number of words is applied.

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SECTION 1

PRIVATE LEASED TELECOMMUNICATIONS FACILITIES

Recommendation D.1

GENERAL PRINCIPLES FOR THE LEASE OF INTERNATIONAL (CONTINENTAL AND INTERCONTINENTAL) PRIVATE TELECOMMUNICATION CIRCUITS

Preamble

This Recommendation sets out the general principles and conditions applicable to all international (continental and intercontinental) private leased telecommunication circuits. The charging in the terminal countries for the national extensions of an international private leased circuit is subject to any regulations that may be applied by the Administrations of those countries. The diagram included as Annex A to this Recommendation, extracted from Recommendation M.1010 [1] relating to the constitution and nomenclature of international private leased circuits and supplemented for tariff requirements, indicates what is to be understood by the terms international private leased circuit and national extension.

1 General principles

1.1 The international telecommunication private leased circuit service consists of making one or more international telecommunication circuits available to a customer¹⁾ for his dedicated use on the terms and conditions which may be set out in a lease agreement between the customer and the Administration of the country at each terminal of the circuit.

In providing this service, account should be taken of:

- a) the provisions of this Recommendation,
- b) such other terms and conditions as may be mutually agreed upon between the Administrations participating in the provision of the particular service arrangement,
- c) the desirability of facilitating the advance of technology and the use of modern methods of operation and management,
- d) the need to meet the specific requirements of customers.

1.2 An international private leased circuit transiting one or more countries shall be charged for as if it were one circuit if no intermediate station exists in any transit country to which a customer or user²⁾ may have access.

¹⁾ The **customer** is the individual or entity who, or which, leases an international circuit from an Administration and is responsible for payment of all charges or rentals due to that Administration.

²⁾ The **user** is the individual or entity designated by the customer, individually or by class, as having access to the leased circuit and having such authorization, individually or by class, as may be required by the Administrations concerned.

If, however, a customer or user station is connected to the circuit in any transit country, normally the circuit shall be divided into separate sections for charging purposes, each station being charged for as a separate circuit. Exceptionally, Administrations may agree among themselves to apply a different basis of charging taking into account the provisions of § 3.3 below.

1.3 When a private leased circuit has been established, the connection between the terminal stations is set up for the period of the lease in such a way that the international centres at the extremities of the leased circuit do not need to intervene. However, arrangements must be such as to enable the appropriate staff at these centres to perform necessary supervision and maintenance.

1.4 Administrations may temporarily withdraw a private leased circuit from operation in order to perform such tests, adjustments and routine maintenance as is necessary to ensure that the circuit is kept in proper working condition. Administrations shall endeavour to make such a withdrawal only after consultation with the customer and at a time mutually agreeable to all parties.

1.5 The leased circuit service is normally authorized in international relations where telecommunication circuits remain available after the needs of the public telecommunication services have been satisfied. However, Administrations should recognize the requirements for leased circuits in their planning.

1.6 Administrations reserve the right to withdraw a private leased telecommunication circuit if, in their opinion, this is required in the public interest (for example, because of force majeure or threat of imminent technical harm from the continued operation of the circuit involved). If necessary, because of such conditions, withdrawal may be made at very short notice, without Administrations having to observe the period of notice prescribed in § 2.2 below.

1.7 With the limits fixed by Administrations in each case, private leased circuits may be used only to exchange communications relating to the business of the customer. When the circuit is used to route communications from (to) one or more users other than the customer, these communications must be concerned exclusively with the activity for which the circuit is leased.

1.8 Within the limits fixed by Administrations, the customer may derive telecommunication channels from a private leased telephone-type circuit. These channels, or some of them, may be extended by means of other circuits leased by the same customer. The channels so derived must not be sub-leased. The equipment for such sub-division shall be provided, installed and maintained by or at the expense of the customer.

1.9 Equipment connected to a private leased circuit must meet the technical conditions laid down by each Administration concerned. Where consultation would assist in expediting type-approval of equipment, Administrations should consult with each other. Moreover, the equipment in customer or user premises should not allow the circuits to be used in conditions other than those authorized.

1.10 Administrations shall refuse to provide an international private leased circuit when the customer's proposed activity would be regarded as an infringement of the functions of an Administration in providing telecommunication services to others.

1.11 Administrations shall be entitled to take all steps, appropriate in the circumstances, to ensure that the provisions governing the lease of international circuits are respected.

1.12 In the event of a violation of these provisions, Administrations reserve the right to cancel the lease of the telecommunication circuit concerned; they must, however, give the customer immediate and adequate notice of their intention to take such action and sufficient opportunity to respond thereto.

2 Duration of the lease, charging, cancellation

2.1 Except as provided in § 2.5 below for temporary services, the lease shall last for a minimum of one month.

2.2 The lease shall be continued thereafter by tacit agreement until cancelled by either party. Notice of cancellation must normally be given seven days in advance of the effective date of cancellation. However, an Administration may require a different period of notice. The charges for fractional parts of a month beyond the first month shall be in accordance with §§ 2.4.1 and 2.4.2 below.

2.3 The lease should normally be payable one month in advance.

2.4 In calculating the duration of the lease, one month shall mean one calendar month. Moreover, the day on which the circuit is made available ready for service to the customer, shall not be reckoned. The day on which the circuit is withdrawn shall be reckoned as a full day. However, in cases where customer-provided equipment is necessary for operation of the circuit and the customer equipment is not ready for use, Administrations should take into consideration particular circumstances in determining the date of start of service. Thus, a period of lease covering one month or more is calculated as follows:

- a) count the number of days beginning on the day following the day on which the circuit was made available until the end of the month;
- b) thereafter count the number of full calendar months, if any; and
- c) count the number of service days in the last month, including the day on which the circuit was withdrawn.

2.4.1 As regards charging:

- full calendar months are subject to the monthly rental;
- fractions of a month shall be subject to a daily charge equal to 1/30th of the monthly rental.

2.4.2 *Examples:* see Table 1/D.1

TABLEAU 1/D.1

Life of a lease from the day of availability until the day of withdrawal	Chargeable time	Charge
30 October - 15 December 30 October not counted 31 October = 1 day November = 1 month 1 - 15 December = 15 days	1 month 16 days	1 monthly rental + 16/30th of this rental
30 November - 15 January 30 November not counted December = 1 month 1 - 15 January = 15 days	1 month 15 days	1 monthly rental + 15/30th of this rental
4 January - 10 February 4 January not counted 5 January - 31 January = 27 days 1 February - 10 February = 10 days	37 days	37/30th of monthly rental

2.5 By agreement between the Administrations concerned, a temporary lease service may be granted for a period of less than one month.

2.5.1 In calculating the life of a temporary lease, one day shall mean a period of 24 consecutive hours.

The life of a lease should be calculated in multiples of 24 hours, the period starting from the time at which the circuit is made available until the time at which it is withdrawn. If the number of days thus obtained contains a fraction of 24 hours, it should be rounded up to the next whole number.

Examples:

Circuit made available on 1 June, at 09.00 hours, cleared on 5 June at 09.00 hours:

4 × 24 hours, i.e. 4 chargeable days.

Circuit made available on 1 June at 09.00 hours, cleared on 5 June at 11.00 hours:

(4 days + 2/24 day) i.e. 5 chargeable days.

2.5.2 In this case (temporary lease), the charges shall be calculated as follows:

- a) for the first day of lease: 20% of the monthly rental;
- b) for each subsequent day from the second day: 3.33% (1/30) of the monthly rental, the total amount per month paid by the customer in no case being more than the monthly rental.

2.6 The leases considered in §§ 2.1 and 2.5 above are full-time leases, i.e. for 24 hours per day.

2.6.1 However the Administrations concerned may in some cases permit part-time leases.

2.6.2 The conditions of lease and the charges shall then be fixed by agreement between the Administrations.

3 Collection of charges; accounting

3.1 When the private leased circuit does not pass through a transit country, two methods are generally recognized:

3.1.1 Each Administration of the two terminal countries collects its own share of the international private leased circuit rental from the customer resident in its own country.

3.1.2 Subject to mutual agreement by Administrations concerned, either terminal Administration may collect the rental for the private leased circuit; in this case, the collecting Administration credits the other terminal Administration through the international accounts with the share due to it.

3.2 If the private leased circuit passes through one or more transit countries, the terminal Administrations shall agree with the transit Administration(s) on the method to be adopted for collecting and international accounting of the charges due to it (them).

3.3 When leasing a series of circuits forming a private leased circuit network, the terminal and transit Administrations involved may agree upon an equitable division of revenues for the private leased circuits and should endeavour to grant the best possible charging conditions to the customer.

4 Additional charge for special routings

If a customer requests the Administrations to provide a circuit by means of a specific routing other than that planned by them, these Administrations shall have the right to levy an additional charge³⁾ which takes into consideration the additional costs involved. An additional charge would be applicable where the request was made for diversity or security reasons, but not where an existing circuit fails to meet specifications according to relevant CCITT Recommendations.

5 Allowances for interruptions

5.1 In the event of an interruption of a private leased circuit for which a customer or user is not responsible, an allowance shall normally be made to the customer if there has been an initial period of interruption of:

- a continental circuit for not less than 180 consecutive minutes,⁴⁾

³⁾ In continental relations, Administrations may consider that an additional charge in the range of 20-25% of the normal rental might be appropriate.

⁴⁾ In cases where the rental charges for continental circuits are roughly at the same level as charges for intercontinental circuits, Administrations may apply the initial time limit of 60 minutes in determining the interruption periods on continental circuits for which an allowance should be made.

- an intercontinental circuit for not less than 60 consecutive minutes.
- a) Any interruption or operating trouble shall be promptly reported by the customer or user. However, in cases of facility failures known to the Administration such report may not be required.
- b) Any requirement that customers specifically request allowances should be in accordance with the practices of each Administration concerned.
- c) For the calculation of the allowance, the reporting time shall normally be the starting time for the duration of the interruption. If, however, a report is not required because the facility failure is known to the Administration, the time of the failure is taken as starting time for calculating the allowance.

5.2 For each hour of the initial period of interruption mentioned in § 5.1 above and for each subsequent consecutive hourly period or fraction of at least 30 minutes, the amount of the allowance should be equivalent to 1/24th of a day's rental for a full-time circuit.

In the case of circuits leased on a part-time basis as described in § 2.6 above, the allowance for interruption shall be *pro rata* to the number of hours of the lease per day.

5.3 For the purpose of computing allowances for interruptions, a month is considered to be 30 days. When the lease is for less than one month, the charge for a day's lease shall be calculated by dividing the total rental by the number of days reckoned in the lease.

5.4 Administrations need not consider requests for allowances for interruptions resulting from unfavourable propagation conditions on HF radio circuits.

5.5 In principle, an allowance should be given for all components of the through circuit between the customers' operating terminals regardless of where the interruption occurs, except as provided for in § 5.7 below. Where the interrupted circuit forms part of a private leased circuit network, the allowance would apply only to the affected circuit.

Note – It is recognized that some Administrations are in a position to make allowances only in respect of failures in the intercontinental portion of private leased circuits.

5.6 Requests for refund of charges for the use of public telecommunication services during the period when the private leased circuit is not available shall not be considered.

5.7 No allowance shall be granted when an interruption (regardless of its duration) or the non-operation of the private leased circuit, is due to the negligence of the customer or to a fault of equipment provided by the customer or user for which the Administration is not responsible.

5.8 Normally, no allowance shall be granted when a private leased circuit is withdrawn in order for Administrations to perform tests, adjustments and routine maintenance as provided in § 1.4 above.

6 Private leased circuit network

6.1 Recognizing the principle that (circuits and message) switching and transmission are the exclusive function of Administrations, the establishment of a private leased circuit network may be authorized to meet the specific technical and operational requirements of certain customers, if requirements cannot be met by the public network or by specialized networks set up by Administrations as in § 6.2 below.

6.2 In this connection, Administrations reserve the right to provide specialized networks to meet specific requirements of customers.

6.3 The authorization in § 6.1 above is subject to prior consultation and agreement between the Administrations concerned as to conformity of the proposed network with the provisions in this Recommendation.

6.4 The establishment of a private leased circuit network is subject upon demand to provision of the following information to all Administrations concerned (in this connection one Administration may, after consulting with other Administrations concerned, act as a coordinator for the supply of this information to those Administrations):

- a) technical equipment to be installed for the operation of the network and the mode of operation of the network, with all the necessary details in order to ensure its proper technical operation;
- b) the list of international circuits forming the network to be leased by the customer;
- c) the scope of usage for which the circuits are required.

Note — For example, information required by Administrations may include details on the following points:

- i) intended usage and mode of operation:
 - telephony, telegraphy, data transmission, facsimile or combined usage;
 - duplex or semi-duplex operation; any subdivision of the circuit into several channels;
 - transmission speed or data signalling rates;
- ii) intended scope of usage:
 - exclusive use by the customer or use in conjunction with other users, possibility of access⁵⁾ to the public networks.

6.5 No substantive change may be made to the basic communications facilities or to the mode of operation or to the scope of usage of a private leased circuit network without the prior concurrence of Administrations leasing the circuits on which such changes are to be made. A substantive change is one which results:

- in the reconfiguration of a private leased circuit network involving an alteration in the scope of usage of its circuits, or
- in an increase in the transmission speed relative to the information originally provided by the customer to the Administrations concerned.

6.6 The interconnection of two or more private leased circuit networks shall not be permitted without the prior agreement of the Administrations concerned.

6.7 In certain circumstances Administrations may, after consultation with the customer, require that some of the equipment (e.g.: switching, concentration or multiplexing) to be used as part of the international private leased circuit network concerned:

- a) be located on the premises of the Administration, and/or
- b) be provided by it.

In such cases, the customer shall have a terminal station located on his own premises in the country in which this equipment is installed.

6.8 Administrations are not obliged to accept any responsibility for the end-to-end quality of transmissions over connected circuits which comprise a private leased circuit network.

Note — Administrations which otherwise accept responsibility for the quality of transmission over connected circuits which comprise a private leased circuit network need not do so for portions of the network which they do not provide or which are not operated within the applicable technical requirements for such connected use.

6.9 In addition to the provision in the present § 6, all of the general principles in § 1 above apply in the case of a private leased circuit network.

⁵⁾ The term *access* covers the cases of direct physical interconnection (e.g., via private switching equipment) and of transfer of information by means of data processing or transmitting devices (computers, multiplexers, concentrators, message switching equipment and possibly manual transfer of torn tape or other types of transfer).

7 Use of public networks in conjunction with international private leased circuits

7.1 General principles

7.1.1 Use of public networks (telex, telephone, data) for transmitting or receiving information from or to international private leased circuits may be authorized subject to the condition that the Administrations concerned shall consult and agree on the extent to which such use may be permitted.

7.1.2 If the national law or established practices of an Administration participating in the establishment of the service do not allow access, the relevant Administration has the right to refuse such access on its side.

7.1.3 An international private leased circuit may be allowed access to the public network, provided that:

- a) this access shall be made on the customer's premises except in the cases listed in § 6.7 above;
- b) all information exchanged over a private leased circuit relates solely to the activities for which the circuit has been leased;
- c) such information is exchanged only with public network subscribers nominated by the customer and approved by the Administrations concerned. Upon demand of any individual Administration, a complete list of nominated subscribers will be made available, taking into account national law or established practices including those with respect to right of privacy.

7.1.4 In addition to the private leased circuit charges, the customer (or subscriber) must pay the normal rate for the use of the public network service.

7.1.5 Administrations reserve the right to levy special charges for allowing the customer access to the public networks.

7.1.6 Administrations will not consider requests for interruption allowances for non-operation of a private leased circuit resulting from failures in public network facilities to which the private leased circuit has access.

7.1.7 Administrations are not obliged to guarantee the quality of the transmission of calls to or from users on the public network over a leased circuit.

7.2 Additional principles applicable to access of an international private leased circuit to the public telex network

7.2.1 In principle, access to the public telex network is allowed at only one terminal of the international private leased circuit. Nevertheless, by agreement among the Administrations concerned, access to the public telex network may be extended to both terminals of such a circuit.

7.2.2 Moreover, in principle, access to the public telex network is limited to communications exchanged with subscribers in the country in which the international private leased circuit terminates. By agreement among the Administrations concerned, in providing the leased service as well as the public service, an international private leased circuit may have access to subscribers of the telex networks outside the national territory in which such a circuit terminates.

7.3 Additional principles applicable to access of an international private leased circuit to the public telephone network

7.3.1 Access to the public telephone network may be allowed at one or the other terminals of the circuit, but not simultaneously at both terminals, and is strictly limited to the subscribers of the national public network in the country where the circuit terminates.

8 Use of private leased circuits in conjunction with computers (data processing centres) operated by customers and providing data processing services to others

8.1 Private leased circuits may be used in conjunction with computers (data processing centres) operated by customers and providing data processing services to others, provided that the conditions set out in §§ 8.2, 8.3 and 8.4 below are fulfilled.

8.2 The function of a computer used for data processing may depend upon the receipt of information partly from one user and partly from another. Moreover, the computer at a data processing centre might be used to transmit to one user intelligence which had been derived from the processing of basic data received from the same or from another user. Data processing involves the use of the computer for a combination of operations such as calculating data, merging, sorting, and so on, in accordance with programmed instructions, as distinguished from circuit, message or packet switching.

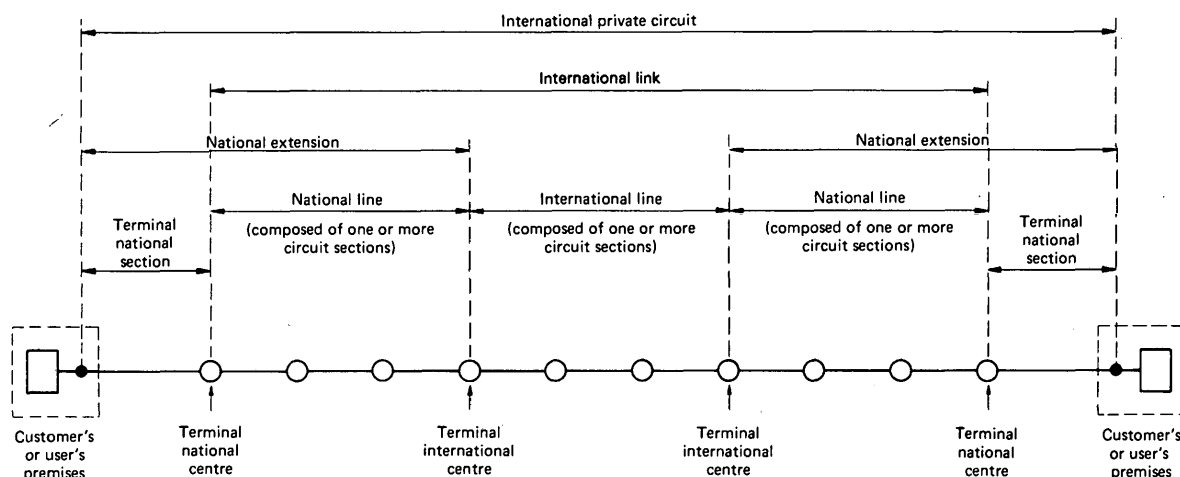
8.3 If a private leased circuit terminates at one end in a data processing centre, the other end may be allowed access to the public networks or to other private leased circuits, subject to the following reservations:

- leased circuits connecting users with a data processing centre may not be used for the exchange of information between user terminals either directly or on a *store and forward* basis (see also § 8.2 above);
- the transmission of messages between users having access to a data processing centre shall not be permitted through that data processing centre;
- the list of users thus connected or having access through the public networks must, upon demand, be communicated for agreement to the Administrations of the countries of residence of these users. Such information shall be held in strict confidence, taking into account national law or established practices including those with respect to right of privacy;
- the customer shall not be permitted to operate in the manner of an Administration by providing telecommunication services to others.

8.4 In addition to the provisions of the present § 8, all of the provisions in § 7 above apply in the case of a private leased circuit which terminates at one end in a data processing centre and has access at the other end to the public network.

ANNEX A

(to Recommendation D.1)



CCITT - 37002

- Circuit test points
- Customer's or user's installation
- Junction point of the international leased circuit and the customer's or user's installation

Note - Figure taken from Recommendation M.1010 [1], with the addition of the term *national extension* for purposes of charging.

FIGURE A-1/D.1
Constitution of international private telecommunication circuits

Reference

- [1] CCITT Recommendation *Constitution and nomenclature of international leased circuits*, Rec. M.1010.

Recommendation D.2

SPECIAL CONDITIONS FOR THE LEASE OF CONTINENTAL TELECOMMUNICATION CIRCUITS FOR PRIVATE SERVICE

Preamble

This Recommendation, which should be applied in conjunction with the provisions of Recommendation D.1, sets out the special conditions intended for application to telecommunication circuits leased for private service between terminal countries located *in the same continent*. The conditions stated here are the results of studies carried out on the European network and can serve as a guide to other Administrations with comparable networks. However, when the telecommunication structure or transmission characteristics within a continent are similar to those in intercontinental relations, Administrations may apply the arrangements set out in Recommendation D.3 to continental circuits.

1 General conditions

1.1 The rental for monthly leasing of a telephone-type circuit for all uses¹⁾, together with the facilities permitted within the limits of §§ 7 and 8 in Recommendation D.1, is taken as reference for the fixing of charges for leased circuits.

For certain types of use defined under § 2.1 below, special tariff conditions are permitted.

1.2 This rental is fixed on the basis of 9500 minutes per month and according to the rules defined for the calculation of accounting rates²⁾ in the automatic incoming³⁾ telephone service, the terminal accounting rate share being multiplied by a variable coefficient to adapt the international tariffs to the national level of tariffs if necessary, the maximum value of this coefficient being established, as necessary, at the regional level by the different Regional Tariff Groups⁴⁾.

1.3 To determine the rental for different types of circuits, the following multiplication coefficients are applied:

2 Rates for the lease of telephone-type circuits of ordinary quality (CCITT Recommendation M.1040 [1])

	<i>Multiplication coefficient</i>	<i>Equivalent number of minutes</i>
2.1 Lease of an ordinary quality telephone-type circuit reserved exclusively for conversation or for analogue facsimile telegraphy (one single telephone channel)	0.75	7125
2.2 Lease of an ordinary quality telephone-type circuit in cases not specified in § 2.1	1.00	9500

2.3 No reduction is made for the lease of more than one telephone-type circuit.

3 Charging for the lease of telephone-type circuits of special quality

For the leasing of a telephone-type circuit of special quality in accordance with the specifications in Recommendation M.1020 [2] and M.1025 [3], each terminal Administration should apply an additional monthly charge in the range of 125 to 250 gold francs, or in the range of 40 to 80 special drawing rights (SDR).

¹⁾ A *telephone-type circuit for all uses* is a circuit used alternately or simultaneously for various telecommunication purposes (telephone calls, telegraph and phototelegraph transmissions, data transmission) including data processing. Such a circuit may also be divided by the customer into several telecommunication channels, on the understanding that the channels thus obtained may not be sub-leased.

²⁾ Definition of the accounting rate: see Recommendation D.000.

³⁾ Where, in automatic service, different rules are applied to the incoming and outgoing directions, for the purposes of § 1.2 the rules for the incoming direction should be used.

⁴⁾ For information, this maximum value at present lies between 1.5 and 1.8.

4 Charging for leased 48 kHz wideband circuits

The monthly charge for the lease of 48 kHz wideband circuits is equal to 10 times the charge made in the same relation and for the same period for a telephone-type circuit used under the conditions set out in § 2.1 above, i.e.:

	<i>Multiplication coefficient</i>	<i>Equivalent number of minutes</i>
48-kHz wideband circuit	7.5	71 250

5 Charging for leased telegraph-type circuits

	<i>Multiplication coefficient</i>	<i>Equivalent number of minutes</i>
5.1 Lease of a 50-baud telegraph-type circuit	0.25	2375
5.2 Lease of a 100-baud telegraph-type circuit	0.30	2850
5.3 Lease of a 200-baud telegraph-type circuit	0.40	3800
5.4 No reduction is made for the lease of more than one telegraph-type circuit.		

References

[1] CCITT Recommendation *Characteristics of ordinary quality international leased circuits*, Rec. M.1040.
[2] CCITT Recommendation *Characteristics of special quality international leased circuits with special bandwidth conditioning*, Rec. M.1020.
[3] CCITT Recommendation *Characteristics of special quality international leased circuits with basic bandwidth conditioning*, Rec. M.1025.

Recommendation D.3

**SPECIAL CONDITIONS FOR THE LEASE OF INTERCONTINENTAL
TELECOMMUNICATION CIRCUITS FOR PRIVATE SERVICE**

Preamble

This Recommendation, which should be applied in conjunction with the provisions of Recommendation D.1, sets out the special conditions intended for application to telecommunication circuits leased for private service between terminal countries located *in different continents*. However, in some intercontinental relations, the Administrations may agree to apply the provisions of Recommendation D.2.

1 General conditions

- 1.1 The general principles and conditions contained in Recommendation D.1 apply to the lease of intercontinental telecommunication circuits.
- 1.2 Each terminal Administration shall establish its share of the monthly rental to be charged for the lease of telecommunication circuits.

1.3 When fixing rentals for intercontinental circuits, Administrations should take into account not only the cost of providing such services but also, among other factors, the need to harmonize the charges generally applied for leased circuit services with the rates for the corresponding public service.

1.4 A discount is not normally made for the lease of two or more such circuits to the same customer.

2 Lease of telephone-type circuits of a standard bandwidth and of 48-kHz wideband analogue circuits

2.1 Monthly rentals shall be established by Administrations for the lease of such circuits used for the transmission of:

- a) speech,
- b) record communications, including telegraphy, facsimile telegraphy, VF telegraphy and data,
- c) alternate or simultaneous voice/record or record/record communications, in so far as combinations thereof are technically feasible.

2.2 The monthly rental for 48-kHz wideband circuits should in principle be based on the application of a coefficient to the rental for a telephone-type circuit of standard bandwidth. The application of such a coefficient should normally result in a rental for these circuits between 8 and 12 times the telephone-type rental, although it is recognized that in particular instances coefficients not falling within this range may be appropriate. In establishing the specific coefficient, Administrations should take into consideration the principles set forth in § 1.3 above, as well as the value of the service to the customer, economies resulting from new or advanced technology, and other rate-making factors.

The rentals contemplated herein are for the circuit only, and may be supplemented, as appropriate, for special terminal arrangements and/or for special conditioning.

3 Lease of telegraph-type circuits

3.1 The lease of a standard 50-baud telegraph circuit is considered as the basis for establishing the charges for the lease of other types of telegraph circuits.

3.2 The lease of telegraph-type circuits with a transmission speed less than the 50-baud full character rate may be permitted, allowing:

- a) half the standard character rate (*half-speed* circuit),
- b) a quarter of the standard character rate (*quarter-speed* circuit).

The monthly rental established for half-speed and quarter-speed telegraph circuits should be approximately 67% and 40%, respectively, of the monthly rental for a standard 50-baud telegraph circuit.

In view of the structure of the costs incurred in providing fractional-speed telegraph circuits, Administrations may apply supplementary charging provisions. These provisions are given in Annex A.

3.3 When technical characteristics permit and subject to the agreement of Administrations, a standard 50-baud telegraph circuit may be operated at a modulation rate above 50 bauds, but not exceeding 75 bauds, for an additional charge of 10%.

3.4 The lease of telegraph-type circuits with the following modulation rates above 50 bauds may be permitted:

- a) 100 bauds,
- b) 200 bauds,
- c) 300 bauds.

3.5 Possible guidelines to be taken into account in the establishment of tariffs for telegraph-type leased circuits in intercontinental relations are given in Annex A.

4 Lease of digitized channels

4.1 A digitized leased channel is one which is set up on a circuit equipped to transmit digital signals. This circuit may consist of both analogue and digital sections.

Circuits having the following standard classes of basic bit rates may be provided by Administrations:

1200 bit/s

2400 bit/s

4800 bit/s

9600 bit/s¹⁾.

By agreement between Administrations concerned, circuits at bit rates not mentioned above may be offered on an optional basis.

4.2 Tariffs for leased digitized channels should be based on the following general principles:

- establishment of a rational relationship between the tariffs applicable to the different classes of bit rates, with special attention to the structure of the costs involved;
- establishment of the tariff of the 9600 bit/s channel at a level comparable with that of the telephone-type special quality analogue leased circuit (Recommendation M.1020 [1]) in the same relation;
- establishment of the tariff of the 1200 bit/s channel at a higher level than that of a 300-baud telegraph-type circuit in the same relation.

5 Leased circuits provided by high-frequency radio

Administrations may elect to make exceptions to the principles prescribed in §§ 2, 3 and 4 in the case of leased circuits which are provided by high-frequency radio facilities.

6 Leased circuits having special qualities

For the lease of a circuit having special qualities (for example, circuits meeting the technical specifications set out in Recommendations M.1020 [1]) and M.1025 [2] a monthly flat-rate charge, fixed without relation to the circuit rental and added to it, may be applied by terminal Administrations to take into account the cost of providing and maintaining the circuit with the special qualities required.

ANNEX A

(to Recommendation D.3)

Possible guidelines to be taken into account in the establishment of tariffs for telegraph-type leased circuits in intercontinental relations

When establishing tariffs for private leased telegraph-type circuits in intercontinental relations, Administrations may take into account the following provisions supplementing those already contained in Recommendation D.3.

The rental charges may be established according to the structure of the costs incurred in supplying the service as well as other factors such as the tariffs applied to the corresponding public services in conformity with § 1.3.

¹⁾ Standardization of bit rates above 9600 bit/s is for further study. See also Recommendation D.8.

A.1 *Telegraph circuits with modulation rates of 50 bauds and above*

In determining these charges, multiplying coefficients are applied in order to establish a ratio between the tariffs applicable to the different types of circuit.

A telephone-type circuit of ordinary quality is taken as reference for establishing these tariffs.

As an exemple, the scale of coefficients may be as follows:

	<i>Coefficient</i>
Lease of a telephone-type circuit of ordinary quality	1.00
Lease of a 200-baud telegraph-type circuit	0.40
Lease of a 100-baud telegraph-type circuit	0.30
Lease of a 50-baud telegraph-type circuit	0.25

Note — It should be noted that, in accordance with § 3.1, the standard 50-baud telegraph circuit is taken as the basis for establishing the charges for other types of telegraph circuits. In this annex, coefficients based on the rental for telephone-type circuits have been used.

A.2 *Telegraph circuits with a transmission speed less than a 50-baud full character rate (fractional-speed circuits)*

In order to encourage greater utilization by users of 50-baud circuits rather than fractional-speed circuits, Administrations may adapt their charging system according to the following principle: progressive reduction of the tariff for 50-baud circuits, thereby reducing the difference between the tariff for a full-speed 50-baud circuit and the tariffs for fractional-speed circuits.

References

- [1] CCITT Recommendation *Characteristics of special quality international leased circuits with special bandwidth conditioning*, Rec. M.1020.
- [2] CCITT Recommendation *Characteristics of special quality international leased circuits with basic bandwidth conditioning*, Rec. M.1025.

Recommendation D.4

SPECIAL CONDITIONS FOR THE LEASE OF INTERNATIONAL (CONTINENTAL AND INTERCONTINENTAL) SOUND- AND TELEVISION-PROGRAMME CIRCUITS FOR PRIVATE SERVICE

Preamble

This Recommendation details the provisions applicable to leased international (continental and intercontinental) sound- and television-programme circuits and associated control circuits for private service. The provisions of this Recommendation should be applied in conjunction with Recommendation D.1 except where specifically stated otherwise.

Sound- and television-programme circuits provided on an occasional basis are subject to the provisions of Recommendation D.180. Provisions governing the technical aspects and maintenance of sound- and television-programme circuits are contained in the J, M, and N Series Recommendations.

1 General principles

1.1 The general principles as stated in § 1 of Recommendations D.1 and D.180, where applicable for leased international sound- and television-programme circuits, shall serve as the general principles for this Recommendation. The Administrations concerned may agree upon additional principles, if desired.

1.2 This Recommendation is intended to cover the use of circuits for sound- and television-programme transmission purposes only, unless otherwise agreed upon by the Administrations providing the circuits.

2 Definitions

The definitions applicable to the lease of sound- and television-programme circuits are contained in § 2 of Recommendation D.180. Illustrative diagrams of such circuits are included herewith as examples for reference purposes. It should be noted that these diagrams, which are extracts from Recommendation D.180, do not cover all situations (e.g. leased sound- and television-programme circuits are not always routed by the international sound programme centres (ISPCs)/international television programme centres (ITPCs)).

2.1 Constitution of sound- and television-programme connections

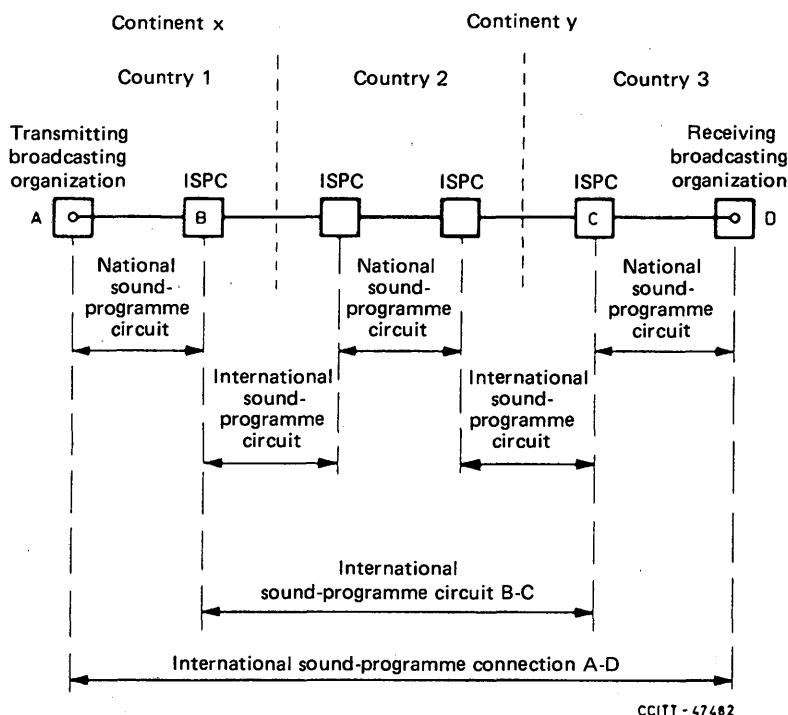


FIGURE 1/D.4

Example of an international sound-programme connection

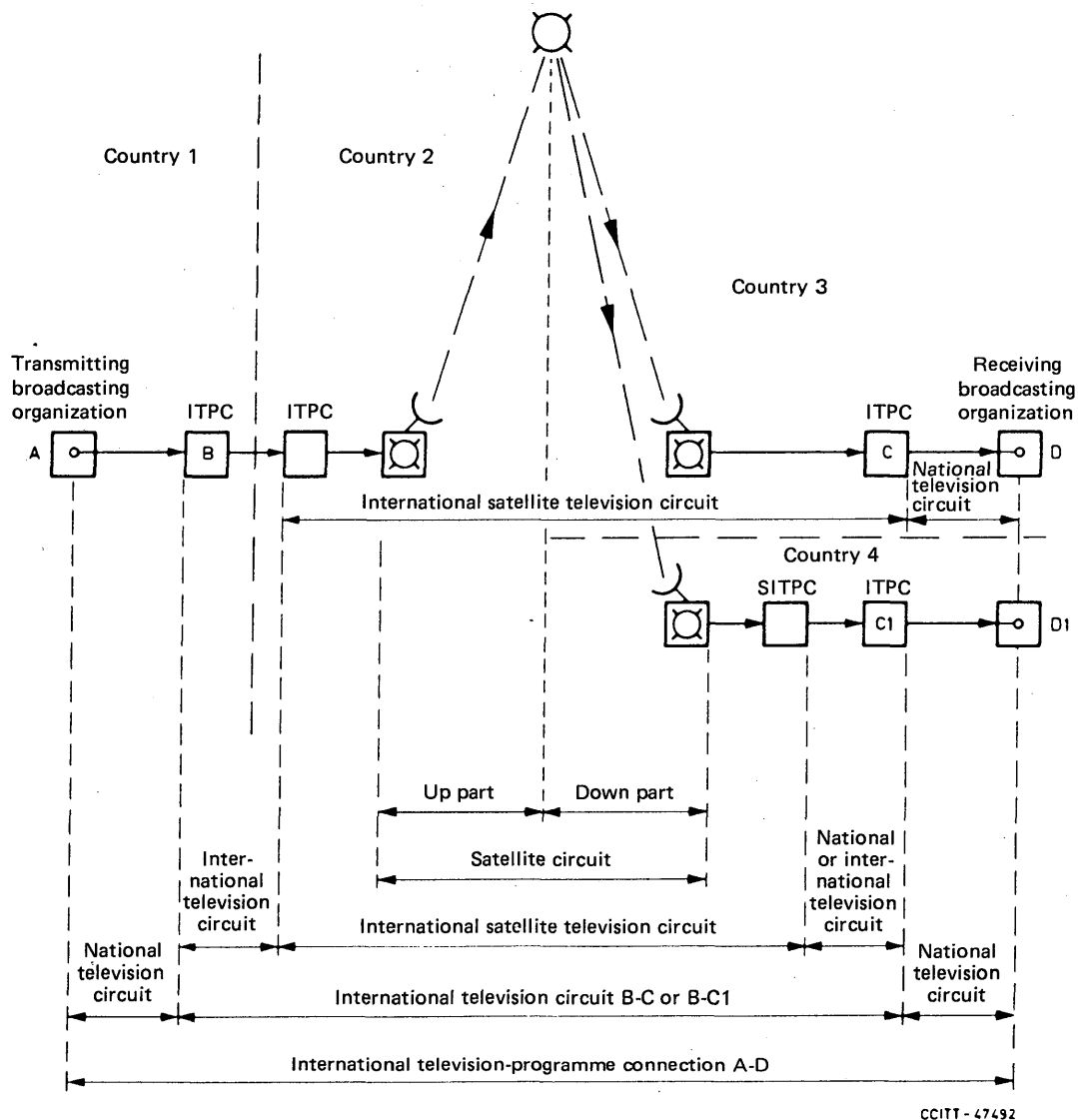


FIGURE 2/D.4

Example of an international television-programme connection involving a satellite circuit

3 Duration of the lease, charging and cancellation

3.1 This Recommendation applies to sound- and television-programme circuit leases for minimum periods as established by Administrations. The Recommendation shall apply to leases lasting normally not less than 24 hours taking into account the availability of the communications facilities used in the provision of these circuits (e.g. facilities may not be available in all cases for short-term use). If a circuit is cancelled at the request of a customer prior to the end of either the ordered or the minimum lease period, special charges may be applied as a result of early termination.

3.2 In the provision of leased sound- and television-programme circuits, Administrations should take into account the provisions of Recommendation D.1, § 2, where applicable.

3.3 In establishing the charges for leased sound- and television-programme circuits, Administrations may take into account the provisions of Recommendation D.5, particularly with respect to the cost of providing the circuits and the need to avoid harmful competition among the different types of services provided by the Administrations concerned.

3.4 Administrations shall specify the period of notice required for cancellation prior to the initiation of service.

3.5 In the case of leased television-programme circuits, chargeable periods may commence on the day a circuit is activated and continue through the last day a circuit is furnished.

3.6 In calculating the chargeable terrestrial circuit lengths, Administrations shall apply the arrangements in Recommendation D.180, § 5.5. In special cases, Administrations may agree among themselves upon the chargeable circuit lengths (e.g. for submarine cables, radio-relay links with difficult terrain conditions, transit circuits, etc.).

3.7 Administrations may establish additional charges for special services rendered at the request of customers. Examples of these special services are:

- the provision of leased programme circuits which are adapted for multiple use by means of equipment provided by Administrations;
- the provision of switching units at the ends of leased programme circuits to allow their connection with other circuits, e.g. with occasionally provided programme circuits;
- reversals in the direction of transmission;
- the establishment of special categories of circuits.

4 Collection of charges – accounting

4.1 Each Administration involved in providing leased sound- and television-programme circuits shall establish its share of the monthly rental. Charges are normally payable in advance.

4.2 In principle, such charges shall be collected by Administrations from their respective customers. In certain cases, the provisions in §§ 3.1.2 and 3.2 of Recommendation D.1 may apply.

5 Allowances for interruption

5.1 In addition to the conditions specified herein, conditions for granting allowances for interruptions on leased sound- and television-programme circuits, with the exception of duration, shall follow the applicable provisions contained in § 5 of Recommendation D.1 and § 5.4 of Recommendation D.180.

5.2 The duration of interruption on leased sound-programme circuits before an allowance is initiated shall be equal to the periods stated in § 5.1 of Recommendation D.1.

5.3 The duration of interruption on leased television-programme circuits before an allowance is initiated shall be determined by the Administration concerned before service is started. In no case should this period be greater than the period indicated in § 5.1 of Recommendation D.1; generally, the period should be of a lesser duration than that stated in § 5.1 of Recommendation D.1.

6 Special conditions applicable to both leased sound- and television-programme circuits

6.1 Generally, leased sound- and television-programme circuits are unidirectional. In certain cases alternate two-way circuits are ordered by the customer.

6.2 As the use of circuits for routing programmes requires close collaboration on the part of the broadcasting organizations concerned, interconnected circuits may be made available by a customer to a coordinating body which acts as a user and operates the circuits in the form of a network. In establishing a network, Administrations should take account of the relevant parts of § 6 of Recommendation D.1 and §§ 5.1.5, 5.1.6 and 5.1.7 of Recommendation D.180.

6.3 Leased circuits established for the transmission of programmes may in turn be interconnected with circuits made available on an occasional basis by Administrations at the request of the broadcasting organizations.

6.4 The interconnection of two or more networks may be authorized by the Administrations concerned.

6.5 Generally, Administrations will not levy any construction charges for terrestrial circuits with a minimum lease period of one year or more. In the case of terrestrial circuits with a lease period of less than one year, Administrations may claim reimbursement for any construction costs incurred, as well as a reasonable compensation for the procurement of special equipment requested by the customer.

6.6 For satellite circuits, Administrations should take into account the terms and conditions of the provider of the international satellite system being utilized.

7 Special conditions applicable to leased sound circuits

7.1 Types of sound circuits

7.1.1 The types of sound circuits that may be provided for the transmission of a sound programme, or a sound component of a television program, are referred to as shown in Table 1/D.4 for ordering and charging purposes.

TABLE 1/D.4

Type of circuit	Approximate bandwidth
Narrow-band	3 kHz
Medium-band	5 kHz
Wideband	10 kHz
Very wideband	15 kHz
Stereophonic pair	2 at 15 kHz each

Detailed technical parameters of some types are given in the Series J and N Recommendations.

A stereophonic pair consists normally of two very-wide-band circuits, which must be carefully matched. Each circuit of a stereophonic pair may also be used separately for monophonic transmissions.

8 Special conditions applicable to leased television circuits

When the vertical blanking interval is used to transmit special signals specified by the CCIR (such as VITS, VIRS, DIS and captions for the deaf) no additional charge shall be levied provided that only information directly related to the switching, quality control or content of the television signal is transmitted.

Recommendation D.5

COSTS AND VALUE OF SERVICES RENDERED AS FACTORS IN THE FIXING OF RATES

1 The income from the totality of services provided by a telecommunication organization should cover all the costs incurred by that organization, namely:

- operating expenses;
- interest on capital involved;
- fiscal charges;
- depreciation of equipment;
- cost of research and development;
- capital investment (as required).

For political or social reasons the rates for certain services may be so arranged that they do not cover all the costs involved. In addition, the rates applied should not create harmful competition among the various telecommunication services.

2 The CCITT therefore considers that the rates for the various telecommunication services should be such that they cover the items of expenditure listed above.

However, in view of the difficulty of applying rates based on these criteria, in certain cases, for the political or social reasons mentioned above, the CCITT considers that the overall balance in the telecommunication services required should be achieved by applying an increase factor to the rates of other telecommunication services in the same telecommunication organization which will compensate for the deficit incurred by services run at a loss.

In determining this increase factor, the value of the service rendered to the user should be taken into consideration.

In any case the rates adopted should be such as to avoid harmful competition among the different types of service provided by the organization concerned.

Recognizing that a telecommunication service is of the greatest importance for the economic and social life of every country, the CCITT recommends that the surplus income from the telecommunication services considered as a whole should not be greater than the amount required for the efficient running of these services.

Recommendation D.6

GENERAL PRINCIPLES FOR THE PROVISION OF INTERNATIONAL TELECOMMUNICATIONS FACILITIES TO ORGANIZATIONS FORMED TO MEET THE SPECIALIZED INTERNATIONAL COMMUNICATION NEEDS OF THEIR MEMBERS

(Geneva, 1980)

Preamble

This Recommendation sets out the general principles and conditions applicable in exceptional circumstances where Administrations may provide international telecommunications facilities to organizations formed to meet the specialized international communication needs of their members.

Recognizing that the conditions stated here are set out for exceptional circumstances, when applying this Recommendation, Administrations should always keep in mind their inherent responsibility for providing telecommunication services and make their best effort to meet specific requirements as promptly as possible by their own public services or specialized networks.

The provisions of this Recommendation do not apply in the case of international leased circuits made available to customers under the provisions of Recommendations D.1, D.2 and D.3.

1 General principles

1.1 Considering that (circuit, message, packet, etc.) switching and transmission are the exclusive function of Administrations, they must continue to endeavour to meet the specific requirements of customers by providing a wide range of international public services or by setting-up specialized networks for customers.

1.2 However, Administrations may, exceptionally and subject to national legislation, make available international telecommunications facilities for a use which cannot be authorized under the provisions of Recommendations D.1, D.2 and D.3 and which cannot be met by existing public services. These facilities may be provided for a period until new public services or specialized networks which meet the reasonable requirements involved become available, as further specified in § 2.4.

1.3 Such facilities can be made available only by special arrangements between the Administrations concerned and the customer. These arrangements must specify in particular the facilities to be provided by the Administrations concerned. These facilities need not be limited to the provision of circuits, but may also include the supplying of multiplexing, concentration and switching facilities.

2 Conditions governing the provision of such facilities

2.1 Administrations may authorize the exceptional use of such facilities made available to those organizations formed to meet the specialized international communication needs of their members only if such members have common interests and exercise the same activities in areas other than telecommunications.

2.2 Such authorization should not lead to the setting-up of private networks for the benefit of separate entities which do not meet the requirements set out in § 2.1 above.

2.3 The Administrations concerned may establish by common or individual agreement the terms and conditions of use of the international telecommunication facilities provided to the above-mentioned organizations.

2.4 The authorization may be limited to a fixed period of time. Administrations reserve the right to substitute for the facilities made available under this Recommendation services provided by them when such services have evolved to accommodate the customer requirements. For the purpose of ensuring that both technical and operational requirements are met and of establishing a suitable transition period, consultation with the customer would take place before the substitution¹⁾.

2.5 If national legislation prohibits placing at the disposal of such organizations international telecommunication facilities, the Administration concerned has the right to refuse to grant the authorization to these organizations.

2.6 The provision of the international telecommunications facilities referred to in §§ 1.2 and 1.3 above is dependent on information being supplied on request to all the Administrations which would include:

- a) technical equipment to be installed,
- b) list of international circuits which should be made available,
- c) detailed description of the planned utilization of these circuits,
- d) a list of member users.

2.7 In certain cases the Administrations may, after consultation with the organization in question, require that certain equipment intended for the operation of the circuits concerned (for example, switching, concentration or multiplexing equipment):

- a) be installed on the Administration's premises and/or
- b) be provided by the Administration.

2.8 The Administrations are in no way held responsible for the quality of end-to-end transmission of the circuits made available when these circuits are interconnected and when the Administrations do not themselves operate the different parts of the network.

3 Charging principles

3.1 The provision of international telecommunication facilities is subject to tariffs which take account of the volume of information transmitted, the unit of traffic measurement chosen and the origin and destination of information transmitted. The charge may also include a fixed component, which takes into account the nature of the traffic and the facilities provided by the Administration.

The Administrations concerned reserve the right to apply a minimum charge for the facilities provided.

¹⁾ Italy has expressed reservations with regard to the application of the provisions in this section.

3.2 The Administrations determine by agreement the methods by which the traffic routed over these facilities must be measured, i.e.:

- unit of measurement chosen (for example, bit, character, segment, message),
- method of measuring the traffic carried (continuous records, samples).

3.3 Normally, the collection of information relating to the utilization component (i.e., time, character, packets, etc.) should be performed by the Administrations involved in provision of the facilities. However, the Administrations may require the customer to provide such data for charging purposes.

3.4 The level of charges is determined by the Administrations concerned, taking into account the provisions of Recommendation D.5 and certain factors such as the nature of the facilities provided to the customer and the tariffs which may be determined for international public services.

Recommendation D.8

SPECIAL CONDITIONS FOR THE LEASE OF INTERNATIONAL END-TO-END DIGITAL CIRCUITS FOR PRIVATE SERVICE

(Melbourne, 1988)

1 Preamble

This Recommendation, which should be applied in conjunction with the provisions of Recommendation D.1, sets out the special conditions applicable to the leasing of international end-to-end digital circuits for private service.

2 Definition

An end-to-end digital leased circuit is one which uses exclusively digital transmission technology for the routing of information in the form of bit streams. The circuit may be established by conventional physical transmission media (coaxial cables or radio-relay links), by optical fibre cables, or by satellite links.

It may also consist of sections combining the different media indicated above.

3 Bit-rates offered

Circuits having the following standard classes of basic bit rates may be provided by Administrations for their customers:

- 2400 bit/s
- 4800 bit/s
- 9600 bit/s
- 32 kbit/s
- 56/64 kbit/s
- 1544/2048 kbit/s.

By agreement between Administrations, circuits at bit rates other than those mentioned above may be offered to meet specific customer requirements.

4 Tariff principles

Tariffs for end-to-end digital leased circuits should, in principle, be based on the following general principles:

- a) when establishing tariffs, the 56/64 kbit/s leased circuit should be taken as the reference service;

- b) a rational relationship should be established between the tariffs applicable to different classes of bit rates, with special attention to:
 - the structure of the costs incurred,
 - the capacity placed at the customer's disposal,
 - service quality parameters;
- c) Administrations may adopt different tariff structures to take into account both the different media and/or facilities used, and the varying costs of national and/or local extensions which may be needed to provide the service.

Recommendation D.9¹⁾

PRIVATE LEASING OF TRANSMITTERS OR RECEIVERS

1 There are no objections in principle to the lease of transmitters or receivers to users interested only in sending or receiving spoken messages or pictures, provided of course that such arrangements are compatible with the responsibilities which Administrations have accepted by their adherence to the International Telecommunication Convention and associated Regulations.

2 Charges for the lease of such equipment should be determined by the Administration concerned and they would not appear in international accounts.

3 Conditions to be met by lessees of transmitters or receivers should in principle be as follows:

- a) the radiocommunications in question must not contain any advertisement or message of a private character;
- b) names and addresses of senders and intended recipients must be made known to all Administrations, each one of which shall decide, in respect of recipients in its own territory, whether or not to permit participation. Any alterations should also be notified promptly;
- c) the Administrations concerned shall take all practicable steps to ensure that communications shall only be used by authorized recipients and that the provisions of the Convention as regards secrecy of telecommunications are observed;
- d) transmissions shall be at fixed times and, in the case of spoken messages, in pre-arranged languages;
- e) such other conditions as may be required by national law.

4 Where the lease of a transmitter in one country and a receiver in another country is required to provide a unidirectional circuit, or even where a multi-destination service is envisaged, Administrations concerned, although retaining the right to determine the charges for equipment leased in their own country may nevertheless, if they think it desirable, consult with each other in order to ensure that overall charges do not prejudice public service tariff scales.

Reference

- [1] CCITT Recommendation *Operation of intercontinental telephone services (initial system)*, White Book, Vol. II-A, Rec. E.142, Section H, ITU, Geneva, 1969.

¹⁾ Formerly a part of the Recommendation cited in [1].

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SECTION 2

TARIFF PRINCIPLES APPLYING TO DATA COMMUNICATION SERVICES OVER DEDICATED PUBLIC DATA NETWORKS

Recommendation D.10

GENERAL TARIFF PRINCIPLES FOR INTERNATIONAL PUBLIC DATA COMMUNICATION SERVICES

Preamble

This Recommendation sets out the general principles and conditions applicable by Administrations to data communication services over international public networks dedicated to this type of communication. It is recognized that this is a rapidly developing field at the present time in terms of the diversity of application and flexibility is therefore essential.

The tariff principles contained in this Recommendation do not apply to leased circuits for private use (see Recommendation D.1).

1 General

1.1 A public data communication service is a data communication service established and operated by an Administration by means of a public data network dedicated to this type of communication.

2 Charging

2.1 *General principles*

2.1.1 Tariffs developed for public data communication service should:

- take into account the provisions of Recommendation D.5;
- take into account tariff relationships with other services provided by the Administrations;
- be flexible enough to enable new needs to be accommodated as the service develops;
- be as administratively simple as possible;
- take into account the geographical configuration of countries;
- not impart undue advantage or disadvantage to any category of user;
- encourage customer choice depending upon his needs as to the use of circuit or packet-switched services where the alternative exists;
- be such as to encourage the use of public data network, meet the needs of as many users as possible, and promote optimum growth and utilization of the network;
- be easily understood by subscribers;
- sustain the service on a long-term basis.

2.1.2 For public data communication services, each Administration should, subject to the applicable national law, establish the charges to be collected from its customers; in so doing, Administrations should make every effort to avoid too great a dissymmetry between the charges applicable in each direction of the same relation.

2.2 Tariff components

2.2.1 The tariff should normally consist of two components: the network access component and the network utilization component.

2.2.2 The network access component, normally intended to cover the cost of making the service available, represents the cost of the service which is not dependent on network utilization.

2.2.3 The network utilization component normally covers the costs which are dependent on network utilization.

2.2.4 Some factors which may be taken into account in developing tariffs include, for example:

- user class of service (see Recommendation X.1 [1]);
- optional user facilities (see Recommendation X.2 [2]);
- type of switching;
- volume of data and/or duration of call;
- distance;
- time (peak and off-peak periods);
- route;
- other functions.

While certain of the above factors may be more closely associated with one component or another, some may be associated with both. The particular application of some factors will depend on the type of switching employed.

3 Accounting

3.1 Administrations should, by agreement, establish the overall accounting rate applicable in a given relation and divide that rate into terminal shares payable to the Administrations of the terminal countries and, where appropriate, into transit shares payable to the transit Administration(s). The same accounting rate should apply in both directions of a given relation. The overall accounting rate between two terminal countries should be the same irrespective of the route used.

3.2 Normally only the network utilization component should be considered for international accounts.

3.3 The gathering of information required for charging and accounting should normally be the responsibility of the calling Administration. Additionally, if the interconnection of dissimilar networks occurs at the called Administration, then the latter should be responsible for providing the calling Administration with the necessary data for charging and accounting.

4 Interworking of public data communication services

4.1 Normally, the interconnection of dissimilar data networks (such as packet-to-circuit) should take place at the originating or terminating country Administration. However, conversion at a transit point may be provided if the originating, terminating and transit country Administrations agree.

4.2 In the cases where interworking is permitted, it is recommended that preference be given to the interworking alternatives which provide for the use of data circuits between international data communication centres (gateways).

4.3 Interconnection of a public data network with a public telephone/telex network in a transit country should be avoided.

4.4 Tariff principles in the case of interworking between dissimilar data networks shall be as follows:

4.4.1 *Collection charges*

4.4.1.1 The charge shall be, according to the policy of the origin Administration, either:

- a) the international charge applicable to the originating network, or
- b) the charge for the international network used.

4.4.1.2 Where appropriate, charges may also be levied for additional facilities used in the country of origin, e.g. for the access network to, and/or the use of, a network interworking facility.

4.4.2 *Accounting*

International accounting should be based on the accounting rate for the international network used, irrespective of the collection charges applied.

Note — The desirability and possibility of adjusting the accounting rates to include the cost of providing interworking facilities used for international data traffic needs further study in consultation with Study Group I and other relevant Study Groups.

References

- [1] CCITT Recommendation *International user classes of service in public data networks and integrated services digital networks (ISDNs)*, Rec. X.1.
- [2] CCITT Recommendation *International data transmission services and optional user facilities in public data networks*, Rec. X.2.

Recommendation D.11

SPECIAL TARIFF PRINCIPLES FOR INTERNATIONAL PACKET-SWITCHED PUBLIC DATA COMMUNICATION SERVICES BY MEANS OF THE VIRTUAL CALL FACILITY

(Geneva, 1980)

Preamble

This Recommendation, which should be applied in conjunction with the provisions of Recommendation D.10, sets out the special tariff principles intended for application to the international packet-switched public data communication service by means of the virtual call facility.

It is recommended that this is a rapidly developing field at the present time in terms of the diversity of application and flexibility is therefore essential.

1 Definition

Definition of **virtual call (switched virtual connection)**.

One service of the packet switched data transmission services in which a call set-up procedure and a call clearing procedure will determine a period of communication between two DTEs in which users' data will be transferred in the network in the packet mode of operation. All the users' data are delivered from the network in the same order in which they are received by the network.

2 Principles for the application of charges

2.1 Chargeable calls

The following virtual calls are chargeable:

- i) a call request for which the outgoing data switching exchange (DSE) sends to the calling DTE the call-connected packet after it receives the call-accepted packet from the called DTE (see the diagram in Figure 1/D.11);
- ii) a call request which is cut off before the call-connected packet from the remote DSE is received by the local DSE, owing to one of the following reasons:
 - a) one of the DTEs sends a clear request packet;
 - b) remote procedure error of the DTE;
 - c) local procedure error of the DTE.

2.2 Administrations reserve the right to apply a charge to all call attempts. This charge should not apply if an unsuccessful call attempt is due to congestion or a fault in the Administration's equipment.

3 Tariff components

3.1 The tariff for the service should consist of the following components:

- the network access component;
- the network utilization component.

3.2 Network access component

3.2.1 Access charges should be levied for each subscription and should normally be independent of network utilization. They may consist of:

- a) an initial fee (non-recurring);
- b) a subscription rental (payable at certain intervals, e.g. monthly, or quarterly, until the subscription is terminated).

3.2.2 Different access charges may apply for access from other public-switched networks, e.g. from the public telephone network to the packet-switched data network.

3.2.3 The access charges shall not be included in international accounts between Administrations and their establishment is strictly a national matter.

3.3 Network utilization component

3.3.1 The charges relating to the network utilization component should be proportional to the volume of information transmitted and to the duration of communication and should be calculated in accordance with the methods prescribed in §§ 3.3.2 and 3.3.3 below.

3.3.2 The volume of information transmitted should be measured and expressed in conformity with Recommendation D.12.

3.3.2.1 Any chargeable packet other than the data packet should be considered as a packet for which a charge corresponding to a segment is levied.

3.3.2.2 The following packets are chargeable¹⁾:

- data packet;
- interrupt packet;
- call request/call incoming packet;
- reset request/reset indication packet, provided the cause of call reset is either DTE originated, local procedure error or remote procedure error;
- clear request (when the fast select facility is signalled in the call request packet without restrictions).

¹⁾ Further study for the completion of the list of chargeable calls and chargeable packets for international services may be required.

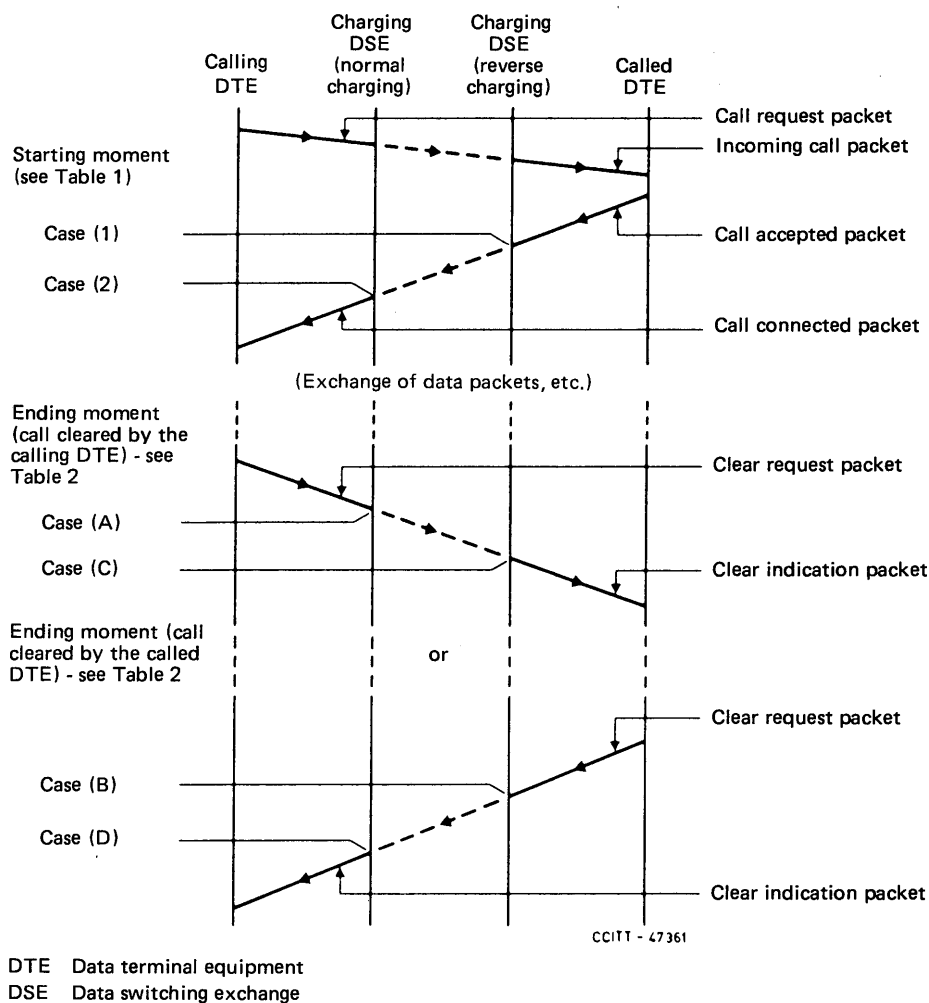


TABLE 1
Starting moment

Charging facility	Normal charging	Reverse charging
	Case (2)	Case (1)

TABLE 2
Ending moment

Charging facility	Normal charging	Reverse charging
The call is cleared by the calling DTE	Case (A)	Case (C)
The call is cleared by the called DTE	Case (D)	Case (B)

FIGURE 1/D.11

Diagrams illustrating the starting and ending moments of the chargeable duration

3.3.3 The chargeable duration of a communication should be calculated on the basis of the information below.

3.3.3.1 The duration of communication (see the diagram in Figure 1/D.11) should be measured and expressed in terms of a unit being equal to one minute.

3.3.3.2 The duration of the communication should be the interval between:

- the moment when the call-connected packet or the call-accepted packet is sent or received by the charging DSE²⁾ where the recording of the duration takes place,
and
- the moment when the clear request packet or the clear indication packet is received or sent by the charging DSE.

3.3.3.3 If the duration of communication thus obtained contains a fraction of a minute, it should be rounded up to the next whole minute.

3.3.3.4 For a chargeable call as provided in § 2.1 ii) above, Administrations may apply a duration charge equal to one unit in addition to the charge in accordance with § 3.3.2.1.

Recommendation D.12

MEASUREMENT UNIT FOR CHARGING BY VOLUME IN THE INTERNATIONAL PACKET-SWITCHED DATA COMMUNICATION SERVICE

(Geneva, 1980)

The CCITT,

considering

the need to define a unit measuring the volume of information transmitted in an international packet-switched data communication service;

taking into account

the characteristics of packet-switched data communication services, including particularly those defined in Recommendations X.1 [1], X.2 [2], X.3 [3] and X.25 [4]; and

the definition of data transmission messages, also called “complete packet sequences” [5];

unanimously declares the following:

(1) *definition of segment*: the measurement unit used for charging for the volume of information transmitted in a packet-switched service is independent of the maximum packet length. It is called a segment and its length is 64 octets¹⁾;

(2) *operating rule*: the quantity of chargeable data contained in each message is expressed as a number of segments and is rounded off to the next higher unit.

²⁾ The charging Administration should, in principle, obtain the information required for charging purposes. Therefore, in the case of a call using the reverse charging facility, it is the called Administration which is responsible for obtaining charging information.

¹⁾ This number is subject to further study.

References

- [1] CCITT Recommendation *International user classes of service in public data networks and ISDNs*, Rec. X.1.
- [2] CCITT Recommendation *International data transmission services and optional user facilities in public data networks*, Rec. X.2.
- [3] CCITT Recommendation *Packet assembly/disassembly facility (PAD) in a public data network*, Rec. X.3.
- [4] CCITT Recommendation *Interface between data terminal equipment (DTE) and data circuit terminating equipment (DCE) for terminals operating in the packet mode on public data networks*, Rec. X.25.
- [5] *Ibid.*, § 4.3.5.

Recommendation D.13

GUIDING PRINCIPLES TO GOVERN THE APPORTIONMENT OF ACCOUNTING RATES IN INTERNATIONAL PACKET-SWITCHED PUBLIC DATA COMMUNICATION RELATIONS

(Malaga-Torremolinos, 1984)

The CCITT,

considering

(a) that it would be desirable to establish certain guiding principles to govern the apportionment of accounting rates in international relations;

(b) that, for reasons of equity, it would be desirable for the accounting rate to be shared by the participating Administrations (terminal or transit) in proportions which take account of the service provided by each of these Administrations;

(c) that the commercial policy and the operating costs can be significantly different for Administrations and, therefore, it is necessary that different sharing arrangements be permitted,

recommends

General principles

In an international packet-switched public data communication relation, the bilateral or multilateral agreement between the Administrations concerned should normally establish the same accounting rate for both directions of the relation regardless of the route utilized.

1 Direct relations

1.1 A direct relation is one between two terminal Administrations where traffic is routed over direct circuits, that is, over circuits provided for the exclusive use of the terminal Administrations.

1.2 For the routing of traffic over direct circuits, the accounting rate is in principle divided between the Administrations of the terminal countries on a 50/50 basis for both directions of traffic. Proportions other than 50/50 may be used when the intercontinental facilities made available by each of the Administrations of the terminal countries are not approximately equivalent.

2 Transit relations

2.1 A transit relation is a relation between two terminal Administrations where traffic is routed by switching in an international transit exchange (or exchanges) located in a country (or countries) other than the country of origin or the country of destination.

2.2 In a transit relation, the accounting rate should normally be divided into two terminal shares and one or more transit shares depending upon the circumstances.

In negotiations concerning the division of the accounting rate, it is recommended that the balance of the accounting rate, after deduction of the transit shares, be divided equitably between the terminal Administrations concerned.

For example, a division of 50/50 may be used when the facilities provided by the terminal Administrations are approximately equivalent. Proportions other than 50/50 may be used when the facilities made available by each of the Administrations of the terminal countries are not approximately equivalent, or where a 50/50 division would not otherwise be equitable.

2.3 It is recommended that for international public data communication services by means of public data networks, the following revenue division guidelines be adopted by Administrations:

- single transit relation: 40%, 20%, 40% (terminal country, transit country, terminal country)
or 1/3, 1/3, 1/3 (terminal country, transit country, terminal country)
- double transit relation: 40%, 10%, 10%, 40% (terminal country, transit country, transit country, terminal country)
or 1/3, 1/6, 1/6, 1/3 (terminal country, transit country, transit country, terminal country)

2.4 More than two international transit points may result in degradation of the network operation and lead to the division of the accounting rate into many transit shares which would have a detrimental financial effect. An agreement requiring more than two transit points should be avoided when selecting transit routes and negotiating the division of the accounting rate. However, in order to ensure flexibility of the network operation, more than two transit points may be permitted, on an exceptional basis. In this case, the division of the accounting rate shall be agreed upon among the Administrations concerned.

Recommendation D.15

GENERAL CHARGING AND ACCOUNTING PRINCIPLES FOR NON-VOICE SERVICES PROVIDED BY INTERWORKING BETWEEN PUBLIC DATA NETWORKS

(Melbourne, 1988)

The CCITT,

considering

(a) that, in order to support certain non-voice services, interworking between public data networks may be required;

(b) that, it is desirable to adopt general charging and accounting principles for these services when their provisioning requires interworking;

(c) that, in principle the interworking between these data networks takes place in the country of origin;

(d) the relevant Series D Recommendations,

1 Charging principles

1.1 The charge(s) shall be, according to the policy of the origin Administration, either:

- a) the international charge(s) applicable to the originating data network, or
- b) the charge(s) for the international data network used.

1.2 Where appropriate, (an) additional charge(s) may be applied for additional facilities, e.g., for the access network and/or the use of a network interworking unit in the origin, transit or destination country.

2 International accounting

2.1 The level and division of the accounting rate(s) should be based on those normally applied to the international data network used, in accordance with the appropriate Series D Recommendations.

2.2 If an interworking unit in a destination country is used, the Administrations concerned should be entitled to remunerations which covers the costs of these facilities¹⁾.

2.2.1 Such a remuneration should be included in the international accounting by an additional amount to be added to the usual accounting rate(s) (for further study).

2.2.2 By bilateral agreement Administrations may establish an additional remuneration to cover the routing cost of the traffic within the destination country which is carried by using a different type of network in this country.

2.3 If an interworking unit is located in a transit country, different international networks will be involved. The determination of the appropriate accounting arrangement (including the remuneration for the interworking unit) is for further study.

Recommendation D.20

SPECIAL TARIFF PRINCIPLES FOR THE INTERNATIONAL CIRCUIT-SWITCHED PUBLIC DATA COMMUNICATION SERVICES

(Geneva, 1980)

Preamble

This Recommendation, which should be applied in conjunction with the provisions of Recommendation D.10, sets out the special tariff principles intended for application to the international circuit-switched public data communication service by means of public data networks.

Definition

The **circuit-switched data communication service** is defined as follows:

A service requiring the establishment of a circuit-switched data connection before data can be transferred between data terminal equipments.

¹⁾ Subject to bilateral agreement.

1 Tariff structure

1.1 Tariff components

1.1.1 The tariff for the service should normally consist of two components:

- a network access component;
- a network utilization component.

1.1.2 The network access component, normally intended to cover the cost of making the service available, represents the cost of the service which is not dependent on network utilization.

It corresponds to what is generally known as the “network connection charges”.

1.1.3 The network utilization component normally covers the costs which are dependent on network utilization.

1.2 Network access component

1.2.1 Access charges should be levied for each subscription and should normally be independent of network utilization. They may consist of:

- a) an initial fee (non-recurring);
- b) a subscription rental (payable at certain intervals, e.g. monthly or quarterly, until the subscription is terminated).

1.2.2 Different access charges may apply for access from other public-switched networks, e.g. from the public telephone network to the circuit-switched data network.

1.2.3 The access charges may vary according to the user class of service and/or the geographical position of the connection in each country and/or the means of access to the service, or there may be single flat-rate charges irrespective of the user class of service, geographical position or means of access.

1.2.4 The access charges shall not be included in international accounts between Administrations and their establishment is strictly a national matter.

1.3 Network utilization component

1.3.1 Composition

Charges for network utilization may consist of:

- a) *for successful calls*
 - a call set-up charge,
 - a minimum charge,
 - a communication charge;
- b) *for unsuccessful calls*
 - a call attempt charge.

1.3.2 Call set-up and call attempt charges

1.3.2.1 These charges may vary according to:

- user class of service;
- geographical distance between the data terminal equipments (DTEs);
- day of the week/time of the day;
- other factors.

1.3.2.2 These charges may be either fixed amount or amounts set in relation to the communication charge (see § 1.3.4); for example, they may correspond to the charge for a communication of a certain duration.

1.3.2.3 The call attempt charge should not apply if an unsuccessful call attempt is due to congestion or a fault in the Administration's equipment.

1.3.3 *Minimum charge*

Normally, the amount of the minimum charge is equal to the charge for a communication of a certain duration (see § 1.3.4).

1.3.4 *Communication charge*

1.3.4.1 The communication charge depends on the duration of the communication and may vary according to:

- user class of service;
- geographical distance between the DTEs;
- day of the week/time of the day;
- other factors.

1.3.4.2 The duration of a communication is determined according to the time during which two DTEs are connected to each other. The duration should be *measured* in seconds or fractions of a second.

1.3.4.3 The communication charge is *expressed* as a charge per minute.

2 **Collection charges**

2.1 The establishment of the collection charge is a national matter. Whilst in general, Administrations correlate collection charges and accounting rates, it is recognized that the two may not necessarily be the same.

2.2 As a general principle, Administrations should make every effort to avoid too large a dissymmetry between the collection charges applicable in each direction of the same relation.

3 **International accounting**

3.1 Accounting rate shares corresponding only to the communication charges (§ 1.3.4 of this Recommendation) should be established. No international accounting should take place as regards other possible charges for network utilization.

3.2 The accounting rates should be expressed as a rate per minute.

3.3 For international accounting purposes, the duration of communications should be established in accordance with the provisions of § 1.3.4.2.

3.4 Normally, the accumulated sum of communication duration between the Administrations concerned during one month should be used for calculating the remuneration due to each Administration.

4 **Determination of accounting rates**

4.1 The accounting rates agreed between Administrations should normally be based on costs obtained through cost studies carried out by the Administrations.

4.2 When, for different reasons, Administrations are not able to make cost studies, the accounting rates for circuit-switched public data traffic could be related to the accounting rate applied for telephone traffic in the same relation. Thus the accounting rate (including possible transit shares) for data traffic could be achieved by multiplying the accounting rate for telephone traffic by suitable coefficients.

The coefficients indicated below have been used in the European Region and could serve as guidance for Administrations:

<i>Signalling rate</i>	<i>Coefficient ^{a)}</i>
2400 bit/s	0.70
4800 bit/s	1.00
9600 bit/s	1.50

a) The values of the coefficients are subject to further study.

4.3 For the remuneration of the costs of transit facilities Administrations may agree to apply fixed transit rates.

Recommendation D.21

SPECIAL TARIFF PRINCIPLES FOR SHORT TRANSACTION TRANSMISSIONS ON THE INTERNATIONAL PACKET SWITCHED PUBLIC DATA NETWORKS USING THE FAST SELECT FACILITY WITH RESTRICTION

(Melbourne, 1988)

Preamble

This Recommendation, sets out special tariff principles to be applied by Administration to short transaction transmissions carried over packet switched public data networks in international relations.

It is recognized that this is a rapidly changing environment, and that the principles developed to attract different types of data transmission traffic to packet switched public data networks should be pursued in the most flexible way possible in order to secure the interests of both users and Administrations.

1 Definitions

1.1 **Short transaction transmissions** — short duration virtual calls for which the information to be exchanged is low in volume and which must be quickly transmitted through the network. Normally there are less than 100 characters of user data and less than 30 s in connect time per call.

1.2 A technical alternative to establishing a normal virtual call for short transaction transmission is the use of the fast select facility, with restriction on response, as defined in Recommendation X.25. This facility allows the user the ability to take advantage of up to 128 characters in the user data field of both the call request and clear request packets and to set up and clear down the call in the minimum amount of time feasible.

2 Charging

2.1 A unit charge should be established for charging for short transaction transmissions using the fast select facility with restriction. Under this method of charging, volume and duration are not charged separately.

3 Accounting

3.1 Calls using the fast select facility with restriction may be accounted for on the basis of an agreed unit rate, or included in the accountable traffic on the basis of volume and duration.

Recommendation D.30

IMPLEMENTATION OF REVERSE CHARGING ON INTERNATIONAL PUBLIC DATA COMMUNICATION SERVICES¹⁾

(Malaga-Torremolinos, 1984)

1 Preamble

This Recommendation sets out some preliminary guidelines for Administrations wishing to offer the optional reverse charging facility over international public data networks. It is recognized that this is a rapidly developing field at the present time and that the principle of offering such a facility should be pursued in the most flexible way possible in order to secure the interests of both users and Administrations. For this reason, this Recommendation outlines alternatives for accommodating reverse charging. The choice and application of a reverse charging facility is subject to bilateral agreement.

2 General

2.1 Reverse charging on international data networks is an optional facility that allows Administrations offering international data transmission on the public data networks to bill a party other than the calling party.

In order to provide guidelines to Administrations wishing to offer this facility, the following options are offered. The first two options apply to packet-switched data networks, while the other two options are applicable to both packet- and circuit-switched networks.

2.2 These alternatives are:

- charges to be billed to the destination station by the destination Administration at the tariff charged by the destination Administration;
- charges to be billed to an account number which is different from the calling number and is assigned to a guarantor;
- charges to be billed to the called party by the Administration of the country of origin, by means of a guarantor arrangement made by the called party;
- charges to be billed to the destination station by the originating Administration at the tariff charged by the originating Administration by means of the transferred account arrangement.

3 ALTERNATIVE No. 1 – Technical procedure to accommodate reverse charging using Recommendation X.75 [1]

3.1 Preamble

3.1.1 This alternative sets out a procedure whereby the variable component charge associated with a virtual call may be billed by the destination Administration to the called party at the rate charged by the destination Administration.

3.1.2 This procedure uses the reverse charging request facility and the reverse charging acceptance facility as specified in Recommendations X.25 [2] and X.75 [1].

3.1.3 All the details relative to this variable components which affect charging, consistent with the requirements of this solution, shall be transmitted from the Administration of origin to the Administration of destination by such methods and formats as may be agreed bilaterally. Such information shall include as a minimum the following elements:

- a) date of establishment of successful call;
- b) time at which call was established (hour, minute, second);

¹⁾ Spain, France and Iran (Islamic Republic of) have expressed reservations concerning the application of this Recommendation.

- c) chargeable duration;
- d) volume of chargeable information transmitted;
- e) address of calling data terminal equipment;
- f) address of called data terminal equipment;
- g) identity of Administrations which have set up the call.

3.1.4 There will normally be no requirement for the destination country to record or to receive information regarding the fixed component charge of the country of origin.

3.1.5 Accounting will be performed in accordance with the provisions of Recommendation D.10.

4 ALTERNATIVE No. 2 – Technical procedure to accommodate reverse charging through the assignment of a number identifying the user to be billed

4.1 Preamble

It would be necessary to define a technical procedure whereby the network usage charges associated with an international public packet-switched data service are billed to a user other than the calling party by the Administration of origin at the rate charged by that Administration.

4.2 Characteristics of this procedure

This procedure should:

- 4.2.1 ensure optional implementation on a per call basis,
- 4.2.2 assume an agreement with the called subscriber for a given period of time,
- 4.2.3 allow billing at the rate charged by the Administration of origin,
- 4.2.4 ensure a precise identification by appropriate technical means of the guarantor (or account) representing the called subscriber in the country of origin and to whom the charges are to be billed.

On the other hand, this procedure should not complicate the call data processing for billing purposes.

The implementation of this alternative may require an extension of network utilities or the specification of other fields of optional user facilities, e.g. "tariffs".

4.3 Principle of realization

The realization may rely on the optional network user identification (NUI) facility as defined in the Series X Recommendations for billing purposes, among others.

The called subscriber's guarantor (or account) to whom the charges of the country of origin are to be applied is designated by this optional network user identification (NUI) facility.

The NUI is used by the calling party, on a per call basis.

5 ALTERNATIVE No. 3 – Administrative procedures to accommodate reverse charging facility using the guarantor service

5.1 Preamble

5.1.1 This alternative sets out the procedure whereby the variable component charge and a relevant part of the fixed component charge (if applicable), associated with public data communication services, may be billed to the called party by the Administration of origin, at the rate charged by that Administration, by means of a guarantor arrangement made by the called party.

5.1.2 The **guarantor service** is one in which all variable charges for calls are charged to a guarantor residing in the country of origin and not the called subscribers in the destination country. The subscriber in the destination country indicates the network address to which the procedure is to be applied. Moreover, the customer names the guarantor in the country of origin. This guarantor settles accounts with the subscriber in the destination country on a private basis.

5.2 *Application procedure*

- a) The subscriber in the destination country who wishes to pay the charges for calls made to him from the country of origin notifies the Administration in the country of origin.
- b) The notification is made either via the Administration of the destination country or via a branch of the subscriber or other authorized agent of the subscriber, in the country of origin.
- c) The notification must contain:
 - the call number (or call numbers) in the destination country to which the reverse charging is to be applied (full indication of the international data number according to Recommendation X.121) [3];
 - the desired period for which the procedure is to be applied;
 - the name of a guarantor residing in the country of origin to whom the charges are to be charged (e.g. a branch, a bank or a similar institution).
- d) The guarantor mentioned under § 5.2 c) must make a legally binding statement to the Administration in the country of origin indicating that he is willing to pay the accruing telecommunications charges.
- e) The Administration in the country of origin is entitled to reject a named guarantor without giving reasons. But in that case it should name guarantors that would be acceptable.

5.3 *Recovery of the collection charges*

The Administration in the country of origin identifies all calls made by subscribers in its own service area to the agreed call numbers of the customer in the destination country. The variable collection charges payable for these calls are not billed to the calling subscribers in the country of origin but to the guarantor in the country of origin. The details of the telecommunication bill and the interval between the bills depend on the regulations in force in the country of origin.

5.4 *International accounting*

As the collection charges are collected in the country of origin, the Administration of the country of origin is responsible for international accounting.

5.5 *Termination of the agreement*

The termination of the agreement occurs:

- when the agreed period expires; or
- after notice has been given by the subscriber in the destination country; or
- after notice has been given by the guarantor; or
- after notice has been given by the Administration in the country of origin.

5.6 *Time limits*

- a) A notice given by the subscriber or the guarantor must be received by the Administration of the country of origin at least five working days before the planned termination of the procedure;
- b) a notice given by the Administration of the country of origin must be received by the subscriber in the country of destination at least five working days before the planned termination of the procedure;
- c) if the procedure is to be continued beyond the period originally agreed upon, the guarantee concerning payment, which is required according to § 5.2 d), must be received by the Administration of the country of origin at least five working days before the beginning of the new period;
- d) Administrations reserve the right to fix time limits other than those specified under §§ 5.6 a) to 5.6 c).

6 ALTERNATIVE No. 4 — An administrative procedure to accommodate reverse charging using the transferred account service

6.1 *Preamble*

6.1.1 The **international transferred account (TA) service** is a service in which the Administrations concerned agree that the charges for calls set up via the international packet-switched data communication service may be paid by a third party that has accepted responsibility for payment rather than being charged to the caller. It is an optional facility and depends on mutual agreement between Administrations.

6.1.2 The term “Guarantor Administration” as used herein refers to the Administration responsible for the collection of transferred account (TA) charges and for the payment of such charges to the Administration of origin.

6.2 *Requests for the TA service*

6.2.1 Upon receipt of a request from the customer which agrees to pay the charges, that customer’s Administration (Guarantor Administration) shall send a message to the Administration of origin, supplying the following information:

- 1) name and address of the customer that has undertaken to pay the charges;
- 2) name and address of the customer in the origin country authorized to use the TA service;
- 3) date of entry into force and expiry of the authorization;
- 4) destination country of the calls and, if necessary, name, address and national number of the destination TA service user;
- 5) any other information considered necessary.

6.2.2 The Guarantor Administration may request the customer responsible for payment of the charges to put down a deposit as a guarantee, the amount being fixed by the Administration.

6.3 *Treatment of TA traffic*

6.3.1 Except for surcharges and special charges (see § 6.4 below), TA traffic shall be accepted, routed and delivered under the same conditions as normal traffic.

6.4 *Surcharges and special charges*

6.4.1 The origin Administration and the Guarantor Administration may levy a surcharge for each TA call. This surcharge shall accrue to the Administration which levies it.

6.5 *Accounting*

Traffic of the TA service shall not be treated differently from other traffic in the international accounts exchanged between Administrations. In particular, the TA indication shall not be mentioned in the monthly traffic accounts.

6.6 *Establishment and exchange of TA accounts*

6.6.1 The origin Administration shall prepare a monthly-transferred account for each customer responsible for the payment of charges. Such statements shall include the following information:

- 1) name and address of origin Administration;
- 2) month of acceptance of TA service;
- 3) name and address of the Administration responsible for collecting the charges;
- 4) name and address of the customer who has undertaken to pay the charges;

- 5) date and reference number of the Guarantor Administration authorization;
- 6) called national number;
- 7) a call-by-call breakdown, with the total corresponding durations and traffic volume units agreed between the Administrations involved and the respective amounts;
- 8) fixed costs, if applicable;
- 9) any other charge or surcharge levied by the origin Administration;
- 10) total charges, including surcharges (if applicable);
- 11) all charges should be presented in the currency of the origin country;
- 12) total charges expressed in SDR or gold-franc (or other agreed currency), together with the relevant exchange rate.

6.6.2 Any TA accounts failing to give these details may be returned to the origin Administration and the credit due shall be reduced by the total of the rejected accounts.

6.6.3 A monthly recapitulatory statement of TA accounts shall be prepared by the origin Administration for the Guarantor Administration. This statement shall recapitulate the individual accounts of the customers responsible for the payment of TA data charges.

6.6.4 The recapitulatory statement and the individual accounts may be mailed or sent by data transmission to the Guarantor Administration, according to the procedure agreed between Administrations. When sending the statement and the accounts by post, the origin Administration shall furnish at least two copies of these accounting documents.

6.6.5 A period of up to two months following the acceptance of the traffic may be allowed for the preparation and dispatch of these accounting documents to the Administration concerned.

6.6.6 Any additional information required regarding monthly TA statements shall be requested by the Guarantor Administration from the Administration that has prepared the TA accounts within one month of their receipt. When this period expires, the amount concerned shall be included in the quarterly TA service accounts for settlement.

6.6.7 Any adjustments arising from discrepancies still not resolved on expiry of the month referred to in § 6.6.6 shall be settled in subsequent accounts, as agreed between the Administrations concerned.

6.7 *Settlement of accounts*

6.7.1 Unless any alternative settlement procedures are adopted by the Administrations concerned, quarterly TA balances shall be settled in accordance with the settlement provisions set out in the International Telecommunication Convention and the Telegraph and Telephone Regulations [4].

6.8 *Liability for collection of charges*

The Administration that has accepted responsibility for the collection of charges guarantees payment of the TA charges to the other Administrations.

References

- [1] CCITT Recommendation *Terminal and transit call control procedures and data transfer system on international circuits between packet-switched data networks*, Rec. X.75.
- [2] CCITT Recommendation *Interface between data terminal equipment (DTE) and data circuit terminating equipment (DCE) for terminals operating in the packet mode on public data networks*, Rec. X.25.
- [3] CCITT Recommendation *International numbering plan for public data networks*, Rec. X.121.
- [4] *Final Acts of the World Administrative Telegraph and Telephone Conference, Telegraph Regulations, Telephone Regulations*, ITU, Geneva, 1973 (see also the Preliminary Note No. 3, page XIV).

GENERAL CHARGING AND ACCOUNTING PRINCIPLES IN THE
INTERNATIONAL PUBLIC INTERPERSONAL MESSAGING (IPM) SERVICE

(Melbourne, 1988)

Preamble

This Recommendation, sets out the general principles for charging and accounting to be applied by Administration for the provision of an international Interpersonal Messaging (IPM) service. Recognizing that requirements may vary among Administrations, it provides for some flexibility in the application of the tariffs.

The CCITT,

considering

- (a) that given the early stage of implementation of this service, tariff principles must be flexible enough to accommodate new developments of the service;
- (b) that it would be desirable to establish certain guiding principles in respect of collection charges and accounting rates in the international IPM service;
- c) that collection charges are a national matter,

taking into account

the characteristics of the IPM service, as defined in the F.400 series Recommendations,

recommends

1 Collection charges

1.1 Basic IPM service (as defined in Recommendation F.400)

The collection charges may consist of elements such as:

- a) a service access component. This may comprise:
 - an initial fee (non recurring);
 - a subscription rental (payable at certain intervals).
- b) a service utilization component,
- c) a charge to cover the use of the international network used (i.e., in principle, the PSPDN).

1.2 IPM service optional user facilities (as defined in Recommendation F.400)

These elements of service may be selected by the user on a per message basis or for an agreed contractual period of time. An additional collection charge may be applied for the use of these facilities to compensate for the additional resources used.

2 International accounting

2.1 Basic IPM service

2.1.1 The normal accounting arrangement for the international network used should apply (i.e., in principle, the PSPDN).

2.1.2 Subject to bilateral agreement, an additional accounting component for the international IPM service usage may apply. The component may be based on message size.

2.2 IPM service optional user facilities

In addition to the components detailed in § 2.1 above, accounting components for optional user facilities may apply. Details are for further study.

SECTION 3

CHARGING AND ACCOUNTING IN THE INTERNATIONAL PUBLIC TELEGRAM SERVICE

Recommendation D.40

GENERAL TARIFF PRINCIPLES APPLICABLE TO TELEGRAMS EXCHANGED IN THE INTERNATIONAL PUBLIC TELEGRAM SERVICE

(Geneva, 1980, amended at Melbourne, 1988)

1 Introduction

1.1 *Basic features of the per word and binary tariff systems*

Every telegram gives rise, at acceptance and on delivery, to fixed costs which are practically the same for all telegrams, except for the telegrams bearing the service indication "urgent", and, at transmission, to costs which vary with the number of words. The per word tariff system, under which each telegram is charged for exclusively according to the number of words, makes no clear distinction between these two types of cost. On the other hand, both tariff components are taken into account in the binary telegraph tariff system which consists of:

- a) a rate per telegram, and
- b) a rate per word,

as indicated in § A.24 of Recommendation D.000.

This Recommendation describes the two tariff systems, leaving to Administrations the choice of the system they wish to apply.

1.2 *Other tariff systems for telegrams*

This Recommendation does not apply to telegrams for which accounting rates and/or collection charges are established on a basis other than that described in § 1.1 above, and for which the appropriate provisions are being drawn up separately.

2 Explanation of some of the terms and expressions used in this Recommendation

An explanation of some of the terms or of some of the expressions used in this Recommendation is given in Recommendation D.000.

3 Accounting rates^{1) 2)}

3.1 *Determination by mutual agreement*

3.1.1 Accounting rates may be determined:

- by the per word tariff system, or
- by applying a binary tariff system.

3.1.2 If the terminal Administrations cannot reach an agreement on the tariff system to be used, the system currently in force shall continue to apply.

3.1.3 Accounting rates are exclusive of any tax or fiscal levy.

3.2 *Special characteristics of the per word tariff system*

In the per word tariff system, accounting rates are determined per word purely and simply. A minimum rate is applied to each telegram as follows:

- 7 words for ordinary or urgent telegrams;
- 22 words for letter telegrams.

3.3 *Special characteristics of the binary tariff system*

In the binary tariff system, accounting rates are composed of a rate per telegram and of a rate per word.

Application of a binary tariff system should normally entail, in the relation concerned:

- discontinuance of a minimum rate for a certain number of words per telegram;
- discontinuance of letter telegrams, subject to the provisions in § 5, d) below;
- discontinuance of reduced charges for all telegrams except those concerning persons protected in time of war by the Geneva Conventions of 12 August 1949 (RCT).

3.4 *Terminal share*

The terminal share fixed by an Administration for a particular relation with another country shall be the same irrespective of the route used (except in the case of determination of the terminal share in accordance with § 3.6.2 below).

3.4.1 *Terminal shares determined by the per word tariff system*

The Administrations or, at the discretion of the Administrations, the recognized private operating agencies, shall fix their terminal shares taking into account the actual cost.

3.4.2 *Terminal shares determined by the binary tariff system*

3.4.2.1 The terminal share has two components as defined in § A.24 of Recommendation D.000.

3.4.2.2 In establishing the two terminal share components, the average numbers of words per telegram should be taken into account and the actual costs.

3.4.2.3 Since the fixed costs involved in the acceptance and delivery of telegrams represent the largest proportion of total costs, a fairly high rate per telegram is recommended, whereas the rate per word might be set at a lower level.

3.4.2.4 The rate per telegram should be the same for all classes of telegram except for telegrams bearing the service indication "Urgent" [see § 5 b) below], whereas the rate per word might vary according to the telegraph relation and class of telegram.

¹⁾ Canada and the United States of America retain the right to maintain an additional rate for terminal traffic routed beyond the international centre.

²⁾ In relations with countries maintaining an additional rate for terminal traffic routed beyond the international centre, the Federal Republic of Germany reserves the right to maintain an additional rate for delivery of telegrams by special messenger.

3.5 *Transit shares*

3.5.1 In both the per word and binary tariff systems, the transit shares are determined on the basis of the per word rate only.

3.5.2 The Administrations or, at the discretion of the Administrations concerned, the recognized private operating agencies, whose territory, installations or circuits are used for the transmission of telegrams between two terminal countries, shall fix their transit shares taking into account the actual cost.

3.5.3 In determining transit shares, it is recommended that a distinction should be made between different types of transit facility, such as:

- direct transit³⁾;
- manual transit;
- automatic transit (via the Gentex network or an automatic retransmission centre).

3.5.4 In relations where transit facilities are made available to Administrations of terminal countries in accordance with a flat-rate price procedure, the transit Administration is no longer credited with a transit share.

3.6 *Accounting rate*

3.6.1 The accounting rate is the sum of the terminal shares of the Administrations of the countries of origin and of destination and, where applicable, the transit shares of intermediate Administrations.

3.6.2 Administrations may, by agreement, fix the accounting rate applicable in a given relation and may divide that rate into terminal shares payable to the Administrations of the terminal countries and, where appropriate, into transit shares payable to the transit Administrations. The same accounting rate should apply in both directions of a given relation.

3.7 *Notification to the ITU General Secretariat*

3.7.1 Administrations shall notify their terminal and transit shares to the General Secretariat of the ITU.

3.7.2 Each Administration should fix and publish at least one (minimum) terminal rate expressed in special drawing rights or gold francs. Footnotes to the effect that the terminal rate of one country corresponds to that fixed by the other country for a certain traffic relation, if the terminal rate of the latter country is higher than that of the former one, should be permissible.

3.8 *Interval before application of new accounting rates*

No new rate and no modification, either general or of detail, relative to the accounting rates shall be effective for countries other than those that establish the new rate or rate modification until fifteen days after it has been notified by the General Secretariat in the *Operational Bulletin* or, if necessary, in a circular telegram, excluding the dates of these communications, and it shall not be applied until the first of the month following the expiration of this period.

4 *Collection charges*

4.1 Each Administration shall, subject to the applicable provisions of national law, fix the charges to be collected from its public. In fixing these charges Administrations should try to avoid too large a difference between the charges applicable in each direction of the same relation. Although, in general, Administrations establish their collection charges according to the accounting rates, the two will not necessarily be the same because, for example:

- a) in most countries, collection charges and accounting rates will be expressed in different currencies;
- b) the value of national currencies can fluctuate relative to the monetary unit used for the establishment of international accounts;

³⁾ "Direct transit" refers to the routing of traffic between two terminal countries through another country by a direct telegraph link, without occasioning either manual transit or automatic retransmission (by means of a retransmission centre) in the transit country.

- c) the collection charges may be based on the binary tariff system and the accounting rate on the per word system or vice versa;
- d) collection charges may be influenced by government policies;
- e) Administrations frequently establish common collection charges for geographical zones or groups of countries.

4.2 The charge to the public in the origin country should in principle be the same, in a given relation, regardless of the route used for transmission of telegrams.

5 Provisions common to accounting rates and collection charges

Having regard to the provisions of the Telegraph Regulations [1] and the CCITT Recommendations, the following rules shall be taken into consideration when fixing accounting rates and collection charges:

- a) for the following classes of telegram, the accounting rate and collection charge are equal to those for an ordinary private telegram in the same relation, by the same route and having the same number of chargeable words:
 - telegrams relating to the safety of life (SVH),
 - ETATPRIORITE and ETAT telegrams,
 - URGENT RCT telegrams,
 - meteorological telegrams (OBS),
 unless Administrations have agreed among themselves not to apply those rates and charges or to apply reduced rates and charges to the telegrams in question;
- b) for telegrams bearing the service indication "Urgent", the accounting rate and the collection charge are equal to twice the rate and charge for an ordinary private telegram transmitted in the same relation, by the same route and having the same number of chargeable words;
- c) for telegrams concerning persons protected in time of war by the Geneva Conventions of 12 August 1949 (RCT), the accounting rate and the collection charge are reduced by 75%;
- d) when the binary tariff system is applied by Administrations that are not in a position to discontinue letter telegrams, only the accounting rates and collection charges per word are reduced by 50% for letter telegrams, the rates per telegram remaining unchanged. In the per word tariff system, the accounting rates and collection charges are reduced by 50% for letter telegrams, taking account, however, of the minimum number of words set for this class of telegram.

6 Special provisions

6.1 *Telegrams in transit*

Administrations which do not admit, in acceptance or in delivery, optional telegrams and certain special services (see Recommendation F.1, §§ A8 to A11), must accept them in transit. The transit shares due to these Administrations are those applicable to the optional telegrams or special services.

6.2 *Telegraph service correspondence and franking privilege telegrams*

6.2.1 The following shall be free of charge and shall not be entered in the international accounts:

- service telegrams relating to public international telecommunication and exchanged between those entitled to do so (see Recommendation F.1, §§ D2 to D5);
- service advices relating to details of service or to the working of circuits and telegraph offices and to transmission of traffic;
- official (ITU) franking privilege telegrams exchanged between the beneficiaries of franking privileges (see Recommendation F.1, §§ A249 and A250).

6.2.2 In the case of service advices initiated by the sender or the addressee, the Administration of origin may apply the charge corresponding to a telegram of the same length. This charge shall not be entered in the international accounts.

References

- [1] *Final Acts of the World Administrative Telephone and Telegraph Conference – Telegraph Regulations – Telephone Regulations*, ITU, Geneva, 1973. (See also the Preliminary Note No. 3, page XIV.)

Recommendation D.41

INTRODUCTION OF ACCOUNTING RATES BY ZONES IN THE INTERNATIONAL PUBLIC TELEGRAM SERVICE

(Geneva, 1980)

The CCITT,

considering

(a) that a considerable number of accounting rates at present exist in the international public telegram service;

(b) that this complicates:

- 1) the procedures for determining collection charges,
- 2) the billing of customers for telegrams filed,
- 3) the establishment of monthly accounts between Administrations,
- 4) tariff studies,
- 5) the publication of rates in the ITU Table of Telegraph Rates, and
- 6) the writing of computer programs when these are used for service operation and accounting;

(c) that during the last few years operational methods in the international public telegram service have undergone simplification and that the same should apply to accounting rates;

(d) that the public has difficulty in understanding the differences that may exist between the collection charges applicable to telegrams addressed to two neighbouring countries on the same continent, which may result from the fact that collection charges may be influenced by accounting rates;

(e) that, for reasons of equity, it would be desirable for the accounting rate to be shared by the participating Administrations (terminal and, possibly, transit) in proportions which take account of the service provided by each of these Administrations;

(f) that, as a result of the survey conducted in 1978/1979 by the CCITT Secretariat on accounting rates and outpayments by a country of origin in its relations with countries in continents other than its own, it has been possible to arrive at average values for the accounting rates and outpayments;

(g) that these average values have been affected by special arrangements between certain countries in different continents and by the failure of certain Administrations to supply information;

(h) that, with a view to obtaining more realistic average values, it may be necessary, in the relevant calculations, to recognize that some traffic data or lack of traffic data evidently distorted the results;

(i) that the survey indicates that the average accounting rates vary considerably in certain intercontinental relations;

(j) that, in the interest of senders, in principle, there should not be more than a single charge for a telegram handed in in any country in one continent and addressed to any country in another continent;

recognizing

(1) that, in principle, uniformity of accounting rates, and thereby possibly collection charges, on a zonal basis is desirable;

(2) that the introduction of such zonal accounting could in certain relations result in a reduction in the accounting rate with a consequential effect on collection charges;

(3) that for economic or political reasons a zonal accounting system is not immediately attainable by certain Administrations and, in the interim, Administrations may need to make other bilateral agreements until they are able to attain this objective,

unanimously recommends

that, in their negotiations for the establishment of accounting rates between two continents in the international public telegram service, Administrations should be guided by the average values given in the tables annexed to this Recommendation. A long-term objective is for those rates exceeding 1.5 gold francs per ordinary word to be reduced to this level. This figure of 1.5 gold francs may need to be reviewed periodically to reflect changes in the costs of providing the international public telegram service.

ANNEX A

(to Recommendation D.41)

Results of the 1978/1979 survey on the accounting-rate shares and accounting rates applied in the international public telegram service

A.1 On the initiative of Working Party III/3 (Tariffs and accounting in the international telegram service), the CCITT Secretariat carried out in 1978/1979 an inquiry into the accounting-rate shares and accounting rates applied in the international public telegram service. The essential purpose of this enquiry was to determine the mean total amount per ordinary word paid by each country in its traffic to each of the continents other than that to which it belongs.

A.2 By 19 March 1979, replies had been received from:

- 28 countries¹⁾ in Africa;
- 19 countries¹⁾ in North America;
- 9 countries¹⁾ in South America;
- 20 countries¹⁾ in Asia;
- 4 countries¹⁾ in Australia (Oceania); and
- 28 countries¹⁾ in Europe.

In all, therefore, replies were received from 108 countries¹⁾, which can be regarded as extremely satisfactory.

A.3 The results of the survey are summarized in Tables A-3/D.41 to A-8/D.41, which show for each of the countries replying to the questionnaire:

- a) in column 1, the *total number of words* (in thousands), expressed as ordinary words, originating in the country and addressed to all the countries in all the continents other than that to which the country belongs;
- b) in column 2, the *mean accounting rate per word* (in gold francs) originating in the country in relations with all the countries in all the continents other than that to which the country belongs;
- c) in column 3, the *mean outpayment per ordinary word* in (gold francs) *made by the country* for traffic to each of the continents other than that to which it belongs.

At the base of columns 2 and 3, are also indicated the respective *weighted averages*

- a) of the *mean accounting rate per ordinary word* originating in *each continent* in its relations with each of the other continents, and
- b) of the *mean outpayment per ordinary word* originating in *each continent* in its relations with each of the other continents.

These weighted averages, *expressed in gold francs*, are summarized in the two tables A-1/D.41 and A-2/D.41.

Note – The names of countries or territories given in Tables A-3/D.41 to A-8/D.41 have been used in column 3 of the “List of telegraph offices open for international service” [1].

¹⁾ In this annex, the word “country” means “country or territory”.

TABLE A-1/D.41

Weighted averages of the mean accounting rate per word

<i>Continents:</i> Destination→ Origin↓	Africa	North America	South America	Asia	Australia and Oceania	Europe
Africa		0.936	1.859	1.476	1.043	1.030
North America	1.962		0.990	1.620	2.432	1.183
South America	3.102	1.352		3.281	3.451	2.091
Asia	1.929	1.679	2.421		1.716	1.573
Australia and Oceania	1.161	0.594	1.402	1.130		1.022
Europe	1.176	1.006	1.861	1.160	0.832	

TABLE A-2/D.41

Weighted averages of the mean outpayment per word

<i>Continents:</i> Destination→ Origin↓	Africa	North America	South America	Asia	Australia and Oceania	Europe
Africa		0.493	0.950	0.742	0.425	0.507
North America	0.747		0.499	0.628	0.774	0.499
South America	0.947	0.551		0.895	1.100	0.756
Asia	0.858	0.614	0.852		0.721	0.772
Australia and Oceania	0.627	0.303	0.913	0.617		0.532
Europe	0.580	0.510	0.801	0.595	0.460	

TABLE A-3/D.41

**Results of the survey on tariffs in the international public telegraph service
(telegram service)**

Country or territory of origin belonging to the continent of AFRICA	Year	Continent : North America			Continent : South America			Continent : Asia			Continent : Australia and Oceania			Continent : Europe		
		Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Algérie		541	1.20	0.66	61	2.10	0.94	497	1.38	0.83	12	2.02	1.38	–	–	–
Angola		45	1.66	0.66	21	1.71	0.71	42	2.02	1.02	1	2.00	1.00	871	1.05	0.50
Ascension		3	3.90	1.04	–	–	–	–	–	–	–	–	–	49	2.09	0.60
Bénin																
Botswana																
Burundi																
Cameroun		106	1.417	0.762	3	2.81	1.649	72	2.585	1.096	2	2.166	1.297	842	1.013	0.497
Cap-Vert		37.1	1.842	0.5	9.1	1.751	0.5	6	2.221	0.7	0.244	3.187	0.7	466.9	0.899	0.248
Centrafic.		36.730	1.390	0.749	0.940	1.362	0.863	24.928	2.842	1.422	0.892	1.516	0.876	353.364	1.023	0.501
Comores																
Congo Braz.		113.85	1.40	1.10	2.82	2.48	2.20	74.47	2.85	2.54	0.83	2.51	2.24	1078.26	1.18	0.98
Cte Ivoire		171.818	1.294	0.653	20.990	2.247	1.194	116.211	2.51	1.143	5.804	1.71	0.922	1985.45	0.978	0.474
Djibouti																
Egypte																
Ethiopie		179	1.535	0.76	5	2.87	0.95	451	1.95	0.83	7.5	2.84	1.77	785.4	1.46	0.634
Gabon		71.619	1.43	0.78	27.087	2.56	1.75	64.373	2.99	1.60	2.153	1.70	0.92	678.348	0.99	0.49
Gambie		46	4.07	0.97	–	–	–	38	4.10	0.77	1	3.795	0.80	230	1.835	0.79
Ghana																
Guinea Ecu.																
Guinée Bis.																
Guinée Rép.																
Burkina Faso																
Kenya		558.121	0.75	0.19	33.936	2.56	0.70	443.630	1.98	0.57	2.981	0.83	0.30	948.449	1.89	0.63
Lesotho																
Libéria																
Libye																
Madagascar		82	1.415	0.764	4	2.462	1.554	97	2.493	1.327	4	1.853	1.288	797	0.986	0.482
Malawi																
Mali																
Maroc		393.208	1.07	0.53	28.362	2.41	0.99	497.672	1.15	0.56	13.828	1.71	1.00	5148.62	0.63	0.32
Maurice		103	2.83	0.693	2	3.58	0.99	504	4.22	0.94	107	3.66	0.80	770	2.17	0.76

TABLE A-3/D.41 (cont.)

Results of the survey on tariffs in the international public telegraph service
(telegram service)

Country or territory of origin belonging to the continent of AFRICA	Year	Continent: North America			Continent: South America			Continent: Asia			Continent: Australia and Oceania			Continent: Europe		
		Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Mauritanie																
Mozambique		97	1.97	1.42	28.29	1.91	1.36	263.7	2.41	1.86	5.97	2.58	2.03	1991.9	1.41	0.86
Namibia																
Niger																
Nigeria		2104	0.35	0.30	83	3.04	1.78	1735	1.67	1.05	46	0.59	0.30	9251	0.98	0.50
Ouganda		86.547	0.449	0.137	1.178	0.422	0.211	195.901	0.737	0.248	8.587	0.393	0.192	380.185	0.803	0.222
Réunion																
Rodriguez		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rwanda		38	1.84	1.05	1.6	3.87	2.00	23	3.69	2.73	-	-	-	157	1.828	0.751
S. Africa		723	0.773	0.397	328	1.254	0.658	2297	1.217	0.650	766	0.663	0.312	6998	0.89	0.464
St-Hélène		2	2.83	0.993	-	-	-	-	-	-	-	-	-	56	2.50	0.89
S. Tomé PCP																
Sénégal																
Seychelles		35	2.83	0.693	-	-	-	104	3.94	0.80	17	3.14	0.60	303	2.14	0.76
Somalie																
Soudan		132	2.32	1.76	4	3.05	2.55	1911	0.90	0.70	12	2.51	2.07	1233	1.36	0.77
Srra Leone																
Swaziland		35.67	0.61	0.61	1.149	0.93	0.93	10.67	1.02	1.02	4.28	0.68	0.68	64.15	0.71	0.71
Tanzanie		353	0.954	0.408	7	2.142	0.615	863	0.564	0.208	56	0.357	0.178	1267	1.072	0.317
Tchad																
Togo		54	1.399	0.748	4	2.079	1.080	27	2.344	1.274	0.6	2.120	1.439	383	1.032	0.51
Tristcunha																
Tunisie		303.60	1.14	0.54	22.25	2.07	0.82	456.11	1.07	0.57	5.60	2.01	1.36			
Zaire																
Zambie		448.788	1.063	0.510	10.396	1.329	0.529	784.566	0.810	0.370	95.093	0.611	0.306	1534.346	0.802	0.354
		Weighted average	0.936	0.493	Weighted average	1.859	0.950	Weighted average	1.476	0.742	Weighted average	1.043	0.425	Weighted average	1.030	0.507

Results of the survey on tariffs in the international public telegraph service (telegram service)

[illegible]

TABLE A-4/D.41 (cont.)

**Results of the survey on tariffs in the international public telegraph service
(telegram service)**

Country or territory of origin belonging to the continent of NORTH AMERICA	Year	Continent : Africa			Continent : South America			Continent : Asia			Continent : Australia			Continent : Europe		
		Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word
S. Ch-Ne-An :		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
S. Christopher																
Nevis																
Anguilla																
S. Kitts		-	-	-	3	0.67	0.50	-	-	-	-	-	-	3	1.67	0.83
S. Lucia		-	-	-	5	1.00	0.60	1	2.00	1.00	-	-	-	14	2.50	0.86
S. Pierre Mql																
S. Vincent		-	-	-	5	1.20	0.70	-	-	-	-	-	-	8	2.50	0.875
Trin. Tobago		3.016	2.61	0.64	295.030	1.40	0.50	75.902	4.42	0.59	0.783	2.31	1.55	317.484	2.84	0.57
Turks Isl.																
USA New York City																
Alaska																
Others exc. Hawaii ^{a)}																
Vierges Br																
Vierges US		-	-	-	-	-	-	-	-	-	-	-	-	3	2.33	1.00
		Weighted average	1.962	0.747	Weighted average	0.990	0.499	Weighted average	1.620	0.628	Weighted average	2.432	0.774	Weighted average	1.18	0.499

^{a)} For Hawaii, see under AUSTRALIA.

TABLE A-5/D.41

**Results of the survey on tariffs in the international public telegraph service
(telegram service)**

Country or territory of origin belonging to the continent of SOUTH AMERICA	Year	Continent: Africa			Continent: North America			Continent: Asia			Continent: Australia			Continent: Europe		
		Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word
Argentina		(1) 74.70	(2) 3.268	(3) 0.856	(1) 1932.63	(2) 1.379	(3) 0.607	(1) 276.31	(2) 3.290	(3) 0.795	(1) 33.57	(2) 3.368	(3) 0.883	(1) 1679.17	(2) 2.112	(3) 0.745
Bolivia		3	3.33	1.00	313	1.69	0.61	21	3.81	0.90	–	–	–	142	1.95	0.80
Brasil		398	3.03	0.88	1474	1.34	0.55	583	3.11	0.78	71	3.31	0.88	2810	1.88	0.77
Chile		4.81	3.018	1.819	267.46	1.793	0.718	31.691	3.568	1.501	9.621	3.437	1.989	94.226	2.33	0.70
Colombia		24.05	3.31	0.73	2369.65	1.31	0.43	114.31	3.80	0.59	9.4	3.72	0.89	786.87	2.67	0.53
Ecuador																
Falkland		–	–	–	6	0.50	0.17	1	4.00	1.00	–	–	–	–	–	–
Guyana																
Guyane Fr.																
Paraguay		6.9	3.36	1.21	157.7	1.326	0.803	20.3	3.58	1.27	0.9	3.62	2.47	134.5	2.435	0.66
Perú		22	3.73	2.50	759	1.23	0.70	66	3.65	2.52	17	3.12	2.06	361	2.58	1.37
Suriname																
Uruguay		1.576	0.354	0.117	55.635	0.348	0.061	4.718	0.511	0.115	1.288	0.362	0.180	76.66	0.489	0.071
Venezuela																
		Weighted average	3.102	0.947	Weighted average	1.352	0.551	Weighted average	3.281	0.895	Weighted average	3.451	1.100	Weighted average	2.091	0.756

TABLE A-6/D.41

**Results of the survey on tariffs in the international public telegraph service
(telegram service)**

Country or territory of origin belonging to the continent of ASIA	Year	Continent: Africa			Continent: North America			Continent: South America			Continent: Australia			Continent: Europe		
		Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Afghanistan		32.604	1.756	0.582	24.347	2.139	0.659	513	3.345	1.010	4.664	2.603	1.596	355.909	1.306	0.557
Arabie Saoudite																
Bahrain		129	2.13	0.52	326	1.95	0.52	13	3.50	0.99	39	0.64	0.32	892	1.20	0.496
Bangladesh																
Birmanie																
Bhutan																
Brunei																
Chine		579	2.400	1.413	634	2.030	1.10	46	2.50	1.41	231	2.00	1.237	2471	1.572	0.794
Hadramaut																
Hongkong		1219	3.15	0.78	3615	4.28	0.74	145	2.45	0.82	1461	2.78	0.72	3009	2.18	0.94
Inde		2503	2.012	0.894	1667	0.739	0.322	275	2.142	0.86	20	0.7745	0.431	13749	1.509	0.681
Indonésie		20.660	1.602	0.506	747.340	1.084	0.395	8.741	3.242	0.687	327.349	0.900	0.198	826.738	1.706	0.556
Iran																
Iraq		328	2.37	1.23	48	1.72	0.94	28	2.37	1.14	31	2.77	1.84	1806	1.49	0.61
Israël																
Japon		4064.7	2.27	1.23	12076.1	1.15	0.61	1845.7	2.00	0.74	3273.5	1.28	0.70	10898.4	2.05	0.99
Jordanie		1220.77	0.33	0.17	28.820	0.90	0.64	14.73	1.57	1.15	18.40	0.68	0.48	1338.74	0.83	0.43
Kamaran																
Kampuchea																
Koweït		681.407	1.466	0.956	902.592	2.231	1.383	32.918	3.683	1.960	64.203	2.888	1.545	2705.396	1.754	1.038
Laos		5.43	3.10	0.65	23.24	2.24	0.65	0.46	3.24	0.65	7.12	2.79	0.65	33.61	2.61	0.65
Liban																
Macau																
Malaisie		125.218	2.269	0.465	332.668	0.715	0.371	8.764	2.652	1.065	21.620	0.773	0.443	750.241	1.690	0.533
Sabah																
Sarawak																
Maldives		3	1.28	0.78	6	1.66	0.61	-	-	-	2	0.90	0.45	20	1.42	0.88
Mongolie																

TABLE A-6/D.41 (cont.)

Results of the survey on tariffs in the international public telegraph service
(telegram service)

Country or territory of origin belonging to the continent of ASIA	Year	Continent: Africa			Continent: North America			Continent: South America			Continent: Australia			Continent: Europe		
		Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word
N. Corée		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Népal																
Oman																
Pakistan																
Perim Isl																
Philippines		3.986	0.724	1.644	1.173	1.756	1.014	21.779	3.15	2.55	201	2.230	1.507	290	1.840	1.181
Qatar																
S. Corée		110	5.9	1.64	782	2.8	0.75	40	4.71	1.08	92	4.42	1.02	385	4.48	0.71
Singapore		415.8	2.192	0.410	2085.2	0.591	0.305	53.6	2.474	0.735	107.9	1.202	0.361	1551.3	1.797	0.577
Sri Lanka		294.4	1.18	0.34	558.3	0.7	0.34	21.7	1.75	0.7	236.5	0.61	0.31	2152.4	1.18	0.44
Syrie		813.805	0.31	0.193	214.774	1.80	0.43	52.390	3.30	1.056	0.977	2.81	2.24	-	-	-
Thaïlande																
Emir. Arabes Unis		557.134	1.739	0.873	395.908	1.622	0.809	7.708	2.60	1.297	38.47	2.622	1.319	1349.924	1.203	0.819
Viet Nam																
Yemen Aden																
Yemen Sanaa		482	0.49	0.29	162	1.09	0.54	2	1.68	1.40	13	0.64	0.32	914	0.76	0.69
		Weighted average	1.920	0.858	Weighted average	1.679	0.614	Weighted average	2.420	0.852	Weighted average	1.716	0.721	Weighted average	1.573	0.772

TABLE A-7/D.41

**Results of the survey on tariffs in the international public telegraph service
(telegram service)**

Country or territory of origin belonging of the continent of AUSTRALIA and OCEANIA	Year	Continent: Africa			Continent: North America			Continent: South America			Continent: Asia			Continent: Europe		
		Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word
Australia		(1) 1505	(2) 1.16	(3) 0.65	(1) 7715	(2) 0.59	(3) 0.30	(1) 538	(2) 1.39	(3) 0.92	(1) 12836	(2) 1.13	(3) 0.63	(1) 14644	(2) 1.04	(3) 0.55
Cocos-Keeling																
Norfolk																
Carolines																
Cook Isl.																
Fiji		-	-	-	-	-	-	-	3.76	1.09	85	2.84	0.88	30	2.16	0.93
Gilbert Is.																
Guam																
Hawaii																
Mariannes																
Marshall																
Midway Isl																
Nauru																
New Hebrid																
New Zealand		240	1.171	0.490	1742	0.604	0.318	49	1.493	0.84	1460	1.05	0.494	2919	0.913	0.437
Niue Isl.																
Nouv. Caled.																
Papua N. Gui.																
Pitcairn																
Polynésie																
Salomon																
Samoa Occ.																
Samoa USA																
Taaf																
Tokelau Isl.																
Tonga		-	-	-	46	0.915	0.33	-	-	-	24	1.78	0.72	46	1.47	0.91
Tuvalu																
Wake Isl.																
Wallis Fut.																
		Weighted average	1.161	0.627	Weighted average	0.594	0.303	Weighted average	1.402	0.913	Weighted average	1.130	0.617	Weighted average	1.022	0.532

TABLE A-8/D.41

Results of the survey on tariffs in the international public telegraph service
(telegram service)

Country or territory of origin belonging to the continent of EUROPE	Year	Continent: Africa			Continent: North America			Continent: South America			Continent: Asia			Continent: Australia		
		Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Açores																
Albanie																
Allemagne RF		5047	1.52	0.78	6408	1.08	0.54	1851	1.83	0.86	12229	1.44	0.70	769	1.23	0.64
Andorre																
Autriche		293	1.77	1.11	622	1.80	0.82	122	2.79	0.71	1093	1.91	0.77	87	2.37	1.30
Belgique		1860	1.578	0.978	1808	1.129	0.636	437	1.451	0.851	2451	1.34	0.74	133	1.899	1.299
Bulgarie		378.76	1.159	0.624	160.47	1.465	0.582	28.52	2.772	0.839	746.30	1.407	0.719	27.79	2.195	1.716
Chypre		74.7	1.00	0.52	130.5	1.41	0.34	4.8	3.06	0.89	305	1.26	0.60	42.8	0.80	0.46
Danemark		605	1.57	0.89	956	1.22	0.72	155	1.55	0.87	1205	1.55	0.92	115	1.97	1.32
España																
Feroe																
Finlande		180.1	2.00	1.02	588	1.48	0.80	58.7	2.51	1.02	408.9	1.72	0.85	49.3	2.16	1.44
France		11792	1.147	0.567	9434	1.086	0.504	2671	1.953	0.693	12466	1.458	0.734	1840	1.048	0.360
Gibraltar		27	0.922	0.46	31	0.318	0.167	1	1.96	0.69	47	1.582	0.785	–	–	–
Grèce		1054	1.584	0.767	2503	1.252	0.619	207	2.521	0.724	2514	1.68	0.762	544	2.224	1.293
Groenland																
Hongrie		543	1.70	0.788	685	1.30	0.54	153	2.61	1.13	1153	1.998	1.11	62	2.25	1.37
Irlande		172	0.65	0.60	1004	0.33	0.18	58	0.72	0.57	389	0.63	0.55	151	0.65	0.52
Islande		12	1.669	1.103	159.6	1.673	1.074	7.7	1.466	0.862	24.6	1.553	0.974	7.2	2.168	1.568
Italie		4984.26	1.84	1.03	8080.81	1.56	0.71	2589.98	2.31	1.02	8913.39	1.55	0.80	1068.55	1.43	0.76
Liechtenstein ^{a)}																
Luxembourg		88	1.68	0.99	95	1.522	0.906	24	2.371	1.481	98	1.707	1.096	9	2.044	1.581
Madère																
Malte		80	1.014	0.589	271	0.640	0.335	27	0.986	0.696	384	1.009	0.693	174	0.726	0.436
Monaco																

^{a)} The data for this country are included in the data furnished by Switzerland.

TABLE A-8/D.41 (cont.)

Results of the survey on tariffs in the international public telegraph service
(telegram service)

Country or territory of origin belonging to the continent of EUROPE	Year	Continent: Africa			Continent: North America			Continent: South America			Continent: Asia			Continent: Australia		
		Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word	Total number of words originating in your country	Mean overall accounting rate per word originating in your country	Mean outpayment per ordinary word
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Norvège		341	1.70	1.00	1147	1.32	0.70	109	2.44	0.99	739	1.85	0.93	53	2.19	1.57
Pays-Bas		2087	1.039	0.761	2914	0.957	0.501	1016	1.455	0.555	4274	1.378	0.771	387	0.996	0.757
Pologne		187	1.359	0.82	1449	0.357	0.504	142	2.458	0.782	1054	1.617	0.737	85	2.167	1.403
Portugal		322	1.60	0.847	739	1.59	0.80	495	2.10	0.83	301	1.88	0.784	58	2.28	1.31
R.D.A.		534	1.778	1.259	216.5	1.049	0.574	119	1.672	1.018	1185	1.322	0.848	30.1	2.032	1.419
Roumanie		891	1.22	0.56	387	0.96	0.34	104	2.04	0.58	1665	1.36	0.57	62	1.95	0.78
S. Marino																
Suède		711	1.57	0.95	1972	1.31	0.65	364	2.37	0.80	2151	1.75	0.76	165	2.09	1.26
Suisse		2707	1.28	0.73	2438	1.24	0.64	743	1.42	0.82	3868	1.26	0.72	263	1.79	1.18
Tchécoslov.																
Turquie		280	0.84	0.47	1250	1.35	0.68	26	2.55	0.77	2015	0.75	0.40	57	2.38	1.37
UK		24377	0.832	0.306	18326	0.554	0.284	3625	1.445	0.600	47243	0.766	0.401	7711	0.323	0.152
U.R.S.S.		865.70	1.99	1.11	1400.57	1.64	0.70	350.68	2.75	1.96	3381.60	1.40	0.65	181.65	2.52	1.65
Vatican																
Yougoslavie		7.45	1.65	1.37	1307	0.69	0.66	97	1.85	1.61	1.654	1.51	1.04	211	2.04	1.69
		Weighted average	1.176	0.580	Weighted average	1.006	0.510	Weighted average	1.861	0.801	Weighted average	1.160	0.595	Weighted average	0.832	0.460

References

- [1] *List of telegraph offices open for international service*, 25th edition, ITU, Geneva, 1983.

Recommendation D.42

ACCOUNTING IN THE INTERNATIONAL PUBLIC TELEGRAM SERVICE

(Melbourne, 1988)

1 General Provisions

1.1 Unless otherwise agreed upon, the origin Administration shall prepare the account of the accounting rates in respect of all telegrams that it has transmitted and forward the account to each of the Administrations concerned.

1.1.1 In direct relations the origin Administration shall credit the destination Administration and transit Administration(s), if any, with the share of the accounting rates accruing to each of them.

1.1.2 In indirect relations the origin Administration shall credit the transit Administration, with the shares of the overall accounting rates accruing to it and the destination Administration. The transit Administration shall credit the destination Administration with the share of the accounting rates accruing to the latter.

1.1.3 When two or more transit Administrations are involved, each transit Administration shall credit the next Administration with the total share of the accounting rates accruing to the latter and all the Administrations beyond its territory.

1.1.4 In the case of telegrams exchanged between countries within the same continental system, the origin Administration may, by agreement with all Administrations concerned, prepare the account of the accounting rates due in respect of all sections of the route to the destination, indicating separately the share that accrues to each Administration.

1.2 The Administration of the Member country of the Union in direct relation with the Administration of a country that is not a Member of the Union shall settle the accounts between the latter and the other contracting Administrations to which it has been intermediary in transmission.

2 Establishment of accounts

2.1 The accounts should normally be based on the number of telegrams and/or words transmitted during the month, distinction being made between the various classes of telegram, and account being taken:

2.1.1 when necessary, of certain special charges (detailed in § 2.5);

2.1.2 of the minimum accounting rate(s) applicable to certain classes of telegram.

2.2 The accounting rates applicable to telegrams transmitted with the charges to be collected on delivery or through operation of the transferred account telegram and telematic service provided for in Recommendation D.41 and D.98, should be entered into the accounts in the regular manner.

2.3 The accounting rate that serves as the basis for division between Administrations should be that which results from the ordinary application of the accounting rates arranged between the Administrations concerned, without regard to errors in charging which may have occurred.

2.4 The number of telegrams and/or chargeable words indicated by the office of origin should serve as the basis for the application of the accounting rate, except in cases where, following an error in transmission, a correction has been made by agreement between the office of origin and the office with which it is in correspondence.

2.5 Accessory charges and charges not recovered by the office of destination and collected by any other office, should be excluded from the accounts. Charges relative to paid service advices and to SVH telegrams for which the charges have not been collected by the office of origin as well as the surcharges for de luxe forms and any charges made for supplying copies of telegrams or for cancelling a telegram before transmission, shall also be excluded from the accounts.

2.6 When the transmission diverges from the route established by agreement in accordance with Recommendation D.40, §§ 3.6.2, the accounting rates shall be determined as follows:

- 2.6.1 The terminal shares shall not be less than those applying over the normal route.
- 2.6.2 The transit shares of Administration that have not previously agreed to the diversion shall not be less than their normal declared transit rates.
- 2.6.3 Any additional accounting rate costs arising from the diversion shall be borne by the Administration that effected the diversion.
- 2.6.4 Alternatively, the Administrations that have cooperated in the transmission of the telegram may agree to accept a reduction in their normal shares such that the sum of these shares is equal to the overall accounting rate over the normal route.
- 2.6.5 Telegrams transmitted exceptionally by telephone or telex shall be accounted for as telegrams.

2.7 *Interruption of transmission*

- 2.7.1 If, through interruption of a telegraph channel, a second transmission is made by a route other than that used originally (see Recommendation F.1, A170), only the accounting rate shares for the second transmission shall be entered in the international accounts.
- 2.7.2 The cost of forwarding, other than that of telegraphic transmission arising from the interruption of a telegraph channel and borne by the office having made use of this methods of forwarding (see Recommendation F.1, A171), shall not be entered in the international accounts.
- 2.8 Administrations may, by agreement of all parties involved, establish the accounts on the basis of a statistical or any other formula.

3 **Exchange and verification of accounts**

- 3.1 Unless otherwise agreed upon, the Administration responsible for collecting the charges shall establish a monthly account showing all the amounts owed and forward it to the Administrations concerned.
- 3.2 The accounts shall be sent as promptly as possible but in any case before the end of the third month following that to which they relate.
- 3.3 In principle, an account shall be considered as accepted without the need for specific notification of acceptance to the Administration that sent it.
- 3.4 Nevertheless, any Administration shall have the right to query the data in question during a period of two months after the receipt of the account but only to the extent necessary to bring any differences within mutually agreed limits.
- 3.5 In the absence of a specific agreement, it is recommended that enquiries related to monthly accounts should not be made unless the differences involved exceed those shown in Table 1/D.42. As soon as the difference involved no longer exceeds these limits, the revision should be stopped.

TABLE 1/D.42

	Amount of the creditor's account	Difference exceeding
Account in SDRs	less than 3000 SDRs	30 SDRs
	from 3000 to 100 000 SDRs	1% of the total of the creditor's account
	more than 100 000 SDRs	1000 SDRs
Accounts in gold francs	less than 10 000 gold francs	100 gold francs
	from 10 000 to 300 000 gold francs	1% of the total of the creditor's account
	more than 300 000 gold francs	3000 gold francs

3.6 However, to avoid repetition of differences that are too small to entail a revision of the accounts, an Administration may draw the attention of the corresponding Administration, which has prepared the monthly account, to obvious errors and the latter Administration must take action on this information as soon as practicable to avoid similar errors occurring in the future.

3.7 In relations where specific agreements do not exist, a quarterly settlement statement showing the balances from the monthly accounts for the period to which it relates shall be prepared as quickly as possible by the creditor Administration and be forwarded in duplicate to the debtor Administration which, after verification, shall return one of the copies endorsed with its acceptance.

4 Payment of balances of accounts

Payment of balances shall be made in accordance with Article 11 and Appendix 1 of the *Telegraph Regulations* [1].

References

- [1] *Final Acts of the World Administrative Telephone and Telegraph Conference (Geneva, 1973) – Telegraph Regulations – Telephone Regulations*, ITU, Geneva, 1973. (See also the Preliminary Note No. 3, page XIV.)

Recommendation D.43

PARTIAL AND TOTAL REFUND OF CHARGES IN THE INTERNATIONAL TELEX SERVICE

(Melbourne, 1988)

1 General provisions

1.1 Conditions and procedure for refunds

1.1.1 On request or following a claim regarding the performance of the service, a refund shall be made to the person who made the payment, subject to the conditions specified in § 2 below.

1.1.2 All claims for a refund of charges must be presented within four months from the date on which the telegram was handed in.

1.1.3 In general, every claim should be presented to the origin Administration and, whenever possible, should be accompanied by written evidence.

1.1.4 The claim may, however, be made by the addressee to the destination Administration, which shall decide whether it can take the necessary action or whether it should forward the claim to the origin Administration.

1.1.5 When a claim is recognized as well-founded by the Administrations concerned, subject to the conditions specified in §§ 3.1.1 and 3.1.2, the prescribed refund shall be made by the origin Administration.

1.1.6 A sender who does not reside in the country in which he tendered his telegram may make his claim to the origin Administration through another Administration. In this case the Administration that received the claim shall, if necessary, be deputed to effect the refund.

1.1.7 Failure to communicate a service advice of non-delivery to the sender or delay in doing so (see Recommendation F.1, A196) shall not give a right to the refund of the charge paid for the telegram.

1.2 Procedures between Administrations

1.2.1 The Administration receiving a claim for a refund of charges shall initiate an investigation and if necessary shall send an inquiry to the destination Administration.

1.2.2 On receipt of an enquiry as in § 1.2.1 above concerning a claim for a refund of charges, the appropriate office of the Administration concerned shall normally endeavour to complete the investigation in one month from the date of receiving the inquiry. In any case the Administration concerned shall reply to the originating Administration within one month.

1.2.3 If an investigation into a claim for refund of charges cannot be completed within one month in accordance with § 1.2.2, the Administration that originally received the claim shall advise the sender accordingly.

1.2.4 If no final reply is received from the destination Administration within 60 days from the date of the initial inquiry, then the investigation shall be considered closed and refund of charges shall be undertaken in accordance with § 3 below.

1.2.5 In principle, claims are forwarded to the central Administration indicated in the ITU *List of Addresses* [1]. However, any Administration may ask through a notification addressed to the ITU General Secretariat that complaints concerning its service should be forwarded to a specially appointed office. In such cases, the postal address of this office (including any telegraphic address and telex number and answer-back code) shall also be included in the ITU *List of Addresses* [1].

2 Cases of refund of charges

2.1 *Telegrams not delivered to their destination or delivered too late*

2.1.1 The total charge for a telegram that has not been delivered or has been delivered to the addressee too late shall be refunded subject to the conditions indicated in §§ 2.1.2 to 2.1.6.5. The refund shall not be made if non-delivery or delay is the result of an insufficient address or indistinct writing by the sender.

2.1.2 Provision § 2.1.1 applies for any telegram that, through the fault of the telegram service, has not reached the destination or has not been delivered to the addressee or to a postal service within a period of:

2.1.2.1 6 hours in the case of a telegram exchanged between two countries within the same continental system that are connected by a direct telegraph circuit;

2.1.2.2 12 hours in the case of a telegram exchanged between two countries within the same continental system but that are not connected by a direct telegraph circuit;

2.1.2.3 12 hours in the case of a telegram exchanged between two countries that are not within the same continental system but that are connected by a direct telegraph circuit;

2.1.2.4 24 hours in all other cases.

2.1.3 The periods of 12 and 24 hours mentioned above shall be reduced by half for **SVH** telegrams, telegrams relative to the application of the United Nations Charter, government telegrams with priority, meteorological telegrams, and also for ordinary private telegrams, and **RCT** telegrams when urgent transmission and delivery has been requested, and for service advices.

2.1.4 In the context of §§ 2.1.2.1 to 2.1.2.4, continents are regarded as Africa, Asia, Australia (including Oceania), Europe, North America and South America. Normally a continental system shall comprise all the countries of the respective continent and exceptionally those countries outside that continent that are declared by the respective Administrations to belong to that continental system.

2.1.5 Except for letter telegrams, the time periods indicated in §§ 2.1.2 (in its entirety) and 2.1.3 above shall be reckoned from the time of acceptance of the telegram.

2.1.6 The following shall not be included in the time periods indicated above:

2.1.6.1 The period during which offices are closed in respect of any relation when that is the cause of delay;

2.1.6.2 the night period;

2.1.6.3 the time occupied in postal conveyance;

2.1.6.4 the time occupied in express conveyance;

2.1.6.5 the period of retention of radiotelegrams at the land station, or on board a mobile station, as well as the time taken for the transmission over the radio circuits.

2.1.7 If the telegram has been the subject of a service advice of non-delivery because the address has been inadequate or has not been registered and if, later, the address has been corrected or supplemented by a service advice at the sender's request, the time periods for delivery shall be calculated as from the moment when this service advice was issued.

2.2 *Telegrams that have been stopped or cancelled*

2.2.1 The total charge shall be refunded for any telegram that has been stopped in the course of transmission as the result of the interruption of a route, subject to the office of origin's having been advised of the stoppage of the telegram concerned.

2.2.2 The total charge shall be refunded for any telegram stopped through the application of the provisions of Articles 19 and 20 of the Convention [2].

2.2.3 For a telegram cancelled at the request of the sender before its transmission has begun, the charge shall be refunded.

2.3 *Alterations or omissions*

2.3.1 The total charge for the telegram shall be refunded when the name of the office of origin or the date of acceptance have been changed or altered in course of transmission with the result that the telegram has not fulfilled its purpose.

2.3.2 The charge for a word or words omitted in transmission shall be refunded, unless the total charge is refunded by application of § 2.3.3, or the error has been remedied by means of a service advice.

2.3.3 Unless the error has been remedied by means of a service advice, the total charge for a telegram shall be refunded when errors have been made in transmission or by omission of words and the origin Administration is satisfied that, in consequence, the meaning of a plain language telegram has been altered or rendered unintelligible.

2.4 *Special services*

2.4.1 The charges for special services not performed because of an error of service and also the charge for the relevant service indications shall be refunded.

2.5 *Miscellaneous provisions*

2.5.1 In the case provided for in §§ 2.1.1 to 2.1.7, 2.2.1 and 2.3.1 to 2.3.3, the refund shall apply only to the actual telegrams that have failed to be delivered or that have been cancelled, delayed or altered, including unused accessory charges, but not to telegrams that may have been caused, or rendered useless, by the non-delivery, delay or alteration.

2.5.2 When a land station advises the office of origin that a radiotelegram cannot be transmitted to the destination mobile station, the origin Administration refunds the sender the charges for any special services not performed.

2.5.3 When errors due to the telegram service have been corrected by service advice within the time periods resulting from the application §§ 2.1.2 to 2.1.6.5, no refund shall be due for the original telegram.

2.5.4 When errors due to the telegram service have not been corrected by service advices but by telegrams exchanged directly between the sender and the addressee, no refund shall be granted for such telegrams.

2.5.5 Amounts overcharged in error shall be refunded to the sender in accordance with the international regulations of each country.

3 **Refund of charges in different cases**

3.1 *Refund of charges in cases specified in §§ 2.1.1 to 2.5.5*

3.1.1 Whenever refund of charges arises from an error of service, it shall be borne by the origin Administration if the amount to be refunded based on the overall accounting rate for the whole or part of the telegram concerned does not exceed sixteen special drawing rights (16 SDRs) or fifty gold francs (G.fr. 50.00) (see § 3.1.3).

3.1.2 In cases where the amount to be refunded as specified in § 3.1.1 exceeds sixteen special drawing rights (16 SDRs) or fifty gold francs, (G.fr. 50.00) such refund shall be borne by the Administrations that have participated in the handling of the telegram, each of them foregoing the share of the overall accounting rate that has accrued to it.

3.1.3 In reckoning the limit sixteen special drawing rights (16.00 SDRs) or fifty gold francs (50.00 G.fr.) only the overall accounting rate per chargeable word of the original telegram shall be considered, excluding the charges for special services.

3.1.4 The origin Administration shall refund the charge without preliminary inquiry if:

3.1.4.1 in case of non-delivery, the sender produces a statement by the office of destination certifying that the telegram was not received;

3.1.4.2 in case of delay or alteration, the sender proves the delay or alteration by producing the copy of the telegram delivered to the addressee or a certified copy or facsimile of the telegram;

3.1.5 The decision of the Administration that makes the refund shall be without appeal when the refund has been in conformity with this Recommendation.

3.1.6 When a refund has to be shared by the various Administrations concerned in the transmission, the origin Administration shall circulate the claim to the Administrations in question with a view to the application of § 3.1.2. The origin Administration shall also have the right to circulate any complaint, when, in the interest of the service, it considers an inquiry to be necessary.

3.1.7 In cases provided for in § 3.1.2, refund of the charges applicable to a special service not performed shall be borne by the Administration to which the charge has accrued.

3.1.8 In the cases contemplated in § 3.1.2, when a claim has been made and circulated within the period fixed in § 1.1.2 and the result has not been notified within the period fixed for the preservation of records, the Administration that received the claim shall refund the charge claimed and the refund shall be shared by the various Administrations that participated in the forwarding of the telegram.

3.1.9 Refund of charges for service advices shall be borne by the Administration that collected the charges.

3.2 *Special provisions regarding refund of charges in the case of stoppage of telegrams*

3.2.1 The refund of the charge for a telegram stopped by virtue of Articles 19 and 20 of the Convention [2] shall be borne by the Administration responsible to the Member that stopped the telegram. The limit fixed in § 3.1.1 does not apply.

3.2.2 When, however, that Member has notified in accordance with Article 20 of the Convention [2], the suspension of certain kinds of traffic, refund of charges of telegrams of this kind shall be borne by the origin Administration from the day following that on which the notification reached it.

References

[1] *List of addresses of Administrations, recognized private operating agencies, international or regional organizations concerned with telecommunications, and scientific or industrial organizations participating in CCI activities*, ITU, Geneva.

[2] *International Telecommunication Convention*, Nairobi, 1982.

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SECTION 4

CHARGING AND ACCOUNTING IN THE INTERNATIONAL TELEMESAGE SERVICE

Recommendation D.45

CHARGING AND ACCOUNTING PRINCIPLES FOR THE INTERNATIONAL TELEMESAGE SERVICE

(Melbourne, 1988)

Preamble

This Recommendation sets out the general principles for charging and international accounting to be applied by Administrations for the provision of the international telemesage service. (See also Recommendation F.50.)

1 General principles

In determining tariff principles to be applied to this service, consideration should be given to the provisions of Recommendation D.5 and the fact that collection charges are a national matter.

2 Collection charges

2.1 The collection charges established by Administrations shall be based on either:

- a) per message, or
- b) per block of 50 words

according to the policy of the origin Administration.

2.2 Special facilities such as greeting cards and express delivery (§ 9 of Recommendation F.50) are for further study.

3 International accounting

3.1 Administrations should, by agreement, establish the overall accounting rate applicable in a given relation and divide that rate into terminal shares payable to the Administrations of the terminal countries and, where appropriate, into transit shares payable to the transit Administration. The same accounting rate should apply in both directions of a given relation.

3.2 In principle, the accounting rate between Administrations should be on a per message basis (message as defined in Recommendation F.50).

3.3 Where the international transmission is achieved over the international public network, Administrations may, by bilateral agreement, account only for delivery costs, on a per message basis, the use of the international public network being accounted for in the normal manner for the international public network used.

3.4 *Special facilities*

Accounting for special facilities such as greeting cards and express delivery cards is for further study.

4 **Refunds**

4.1 Refund of collection charges for international telemessages may be permitted at the discretion of the originating Administration if it can be established that the message was undelivered through no fault of the sender and/or the sender's agent.

4.2 All claims for refunds of charges must be presented within three months of the date of input of the telemessage. Normally such claims will require appropriate documentation of the sender's or addressee's claim.

5 **Service messages**

Subject to formal agreement of the Administration, service messages relating to the international telemesage service shall be free of charge and shall not involve international accounting.

SECTION 5

CHARGING AND ACCOUNTING IN THE INTERNATIONAL TELETEx SERVICE

Recommendation D.50

TARIFF AND INTERNATIONAL ACCOUNTING PRINCIPLES FOR THE INTERNATIONAL TELETEx SERVICE

(Malaga-Torremolinos, 1984; amended at Melbourne, 1988)

Preamble

This Recommendation sets out the general principles for charging and international accounting to be applied by Administrations for the provision of international Teletex service¹⁾.

Taking into account the fact that Teletex service may be provided on different national and international public networks by Administrations, this Recommendation recognizes the need for some flexibility in application of tariffs by the Administrations concerned and the usefulness of having information on the various costs involved, in addition to the costs of the ordinary data transmission over the international network.

The CCITT,

considering

(a) that Teletex service can be provided over different types of public network, for example over packet-switched public data networks (PSPDNs) or circuit-switched public data networks (CSPDNs) over the public switched telephone network (PSTN) or over the integrated services digital network (ISDN);

(b) that international Teletex connection should be over public data networks (PSPDNs or CSPDNs) or over the ISDN if possible;

(c) that, consequently, different types of collection charges and international accounting rates can be applied for Teletex service; and

(d) that collection charges are a national matter,

unanimously recommends

1 Collection charges

1.1 General principles

For the public Teletex service, each Administration should, subject to the applicable national law, establish the charges to be collected from its customers, this being considered a national matter; in so doing, Administrations should make every effort to avoid too great a dissymmetry between the charges applicable in each direction of the same relation, whenever the costs to be covered in the concerned countries are approximately of the same amount.

¹⁾ See also Recommendation F.200 [1].

1.2 *Tariff components*

The tariff applicable to the Teletex service may consist of several components.

1.2.1 *Network access component*

In principle, Administrations should apply:

- the charges which are usually collected for accessing the network to which the user's terminal is connected, or
- an access charge which is applied exclusively to the Teletex service.

These access charges are not dependent on network utilization; generally they consist of:

- a) an initial fee (non-recurring);
- b) a subscription rental.

The network access charges shall not be included in international accounting.

1.2.2 *Service access component*

To remunerate the equipment and facilities specifically implemented to provide the Teletex service, Administrations may, if they so wish, collect a service access charge in addition to the network access charge.

Generally, this charge consists of a subscription fee payable at certain intervals.

The service access charges shall not be included in international accounting.

1.2.3 *Network utilization component*

Taking into account the different network interconnections the following charges should be applied.

1.2.3.1 *Teletex to Teletex communications*

1.2.3.1.1 *Teletex traffic where no interworking between different networks is involved*

In principle, Administrations should apply the international charges which are applicable to the network used.

Nevertheless, Administrations which are able to discriminate the various types of traffic may, if they so wish, collect a different charge reflecting the additional costs of providing the Teletex service.

1.2.3.1.2 *Teletex traffic involving interworking between different networks*

The tariff to be levied shall cover the following components:

- use of the international network;
- if needed, use of the interworking facilities and of the national access network in the country of origin;
- if needed, use of the interworking facilities and the national network in the country of destination.

The structure and the level of this tariff are a national matter.

1.2.3.2 *Teletex to telex communications*

In principle, when the international telex network is used, Administrations should apply the normal international telex charge.

If an international Teletex link is used, the charge may be either:

- a) the normal international telex charge, or
- b) the charge applicable to the Teletex traffic in the concerned relation.

In the last case, however, Administrations may collect an extra charge for the use of the Teletex/telex conversion facility, including the delivery over the national telex network in the country of destination.

2 International accounting

2.1 General principles

The level and division of the accounting rate should be based on those normally applied to the international network used, in accordance with the appropriate Recommendations.

Note – The accounting principles for Teletex traffic between ISDNs or between ISDNs and existing networks (PSPDN, CSDN or PSTN) are for further study.

2.2 Teletex traffic where no interworking between different networks is involved

2.2.1 For Teletex traffic over PSPDNs, the accounting provisions of Recommendations D.11, D.12 and D.13 should apply in principle²⁾.

2.2.2 For Teletex traffic over CSPDNs, the accounting provisions of Recommendation D.20 should apply in principle²⁾. However, that Recommendation contains no provision concerning the division of accounting rates in transit relations. Therefore, Administrations may agree to establish a fixed transit share (for further study).

2.3 Teletex traffic involving interworking between different public networks: PSPDN, CSPDN, PSTN

2.3.1 International network

International accounting should be based on the specific international network used, i.e. in principle the PSPDN (see Recommendation X.300).

2.3.2 Use of interworking facilities located in the country of origin

No compensation should be included in the international accounts to cover the costs of interworking facilities in the country of origin.

2.3.3 Use of interworking facilities located in the country of destination

The destination Administration should be entitled to remuneration which covers the costs of using the interworking facility and any extra costs which may be incurred delivering a message over a national network different in type to the international network used. Consequently, the accounting share due to the destination Administration may consist of two components:

- the share applicable to the international network used;
- a specific share to cover the costs described above.

Pending the cost studies, the last component will be bilaterally agreed between the Administrations concerned.

2.3.4 Use of interworking facilities located in a transit country

2.3.4.1 The transit country should be entitled to remuneration which covers the cost of using the interworking facility. Remuneration to the transit Administration should be made by a supplement to the transit share. The level of this supplement will be subject to bilateral agreement between the Administration concerned.

2.3.4.2 The remuneration of the destination Administration for delivering a message over a national network different in type to the international network used is for further study.

2.3.4.3 The determination and the division of the accounting rate in such transit relations is for further study.

²⁾ Where traffic can be discriminated, and where additional costs of the Teletex service are identified, Administrations may bilaterally agree to apply a different accounting rate reflecting those additional costs (for further study).

2.4 *Interworking between Teletex and telex*³⁾

2.4.1 If the international telex network is used, the normal telex accounting rate and divisions shall apply.

2.4.2 If an international X.71 or X.75 link is used (conversion Teletex to telex is made in the country of destination), the international accounting should in principle be the same as for Teletex traffic of that relation; however, in addition to its Teletex share, the destination Administration should receive a specific share to cover the extra cost of the conversion facility, including the delivery over the national telex network. The level of this specific share will be subject to bilateral agreement between the Administrations concerned.

Reference

- [1] CCITT Recommendation *Teletex service*, Vol. II, Rec. F.200.

³⁾ The principles to apply in the case of international interconnection of Teletex/telex conversion facilities are for further study.

SECTION 6

CHARGING AND ACCOUNTING IN THE INTERNATIONAL TELEX SERVICE

Recommendation D.60

GUIDING PRINCIPLES TO GOVERN THE APPORTIONMENT OF ACCOUNTING RATES IN INTERCONTINENTAL TELEX RELATIONS

(Geneva, 1980)

The CCITT,

considering

(a) that the accounting rates applicable to telex traffic in various regions are already established in certain CCITT Recommendations;

(b) that neither Recommendation D.67 nor any other Recommendation contains provisions determining the sharing of accounting rates to be applied to intercontinental telex traffic;

(c) that it would be desirable to establish certain guiding principles to govern the apportionment of accounting rates in intercontinental telex relations;

(d) that, for reasons of equity, it would be desirable for the accounting rate to be shared by the participating Administrations (terminal or possibly transit) in proportions which take account of the service provided by each of these Administrations;

recommends

General principles

In an intercontinental telex relation, the bilateral or multilateral agreement between the Administrations concerned should normally establish the same accounting rate for both directions of the relation regardless of the route utilized.

1 Direct relations

1.1 A direct relation is one between two terminal Administrations where traffic is routed over direct circuits, that is over circuits provided for the exclusive use of the terminal Administrations.

1.2 For the routing of traffic over direct circuits, the accounting rate is in principle divided between the Administrations of the terminal countries on a 50/50 basis for both directions of traffic. Proportions other than 50/50 may be used when the intercontinental facilities made available by each of the Administrations of the terminal countries are not approximately equivalent.

1.3 In cases where a direct relation exists and traffic is diverted by the Administration of origin to the financial detriment of the country of destination:

- unilaterally, via an unauthorized transit route, or
- unnecessarily (i.e. for other than genuine overflow traffic reasons or to meet routing difficulties), via an authorized overflow transit route,

it is for the Administration of origin to reach agreement with the transit Administration and to remunerate it from the amount of the country of origin's terminal share.

The above does not apply when the Administration of destination does not implement the number of channels required by the Administration of origin in order to provide for a grade of service in which the loss probability in the busy hour will not be more than 1 call in 50.

1.4 If a relation is the subject of a bilateral agreement for the routing of traffic flow on a direct circuit and consistently gives rise to traffic flow difficulties or genuine overflow traffic necessitating recourse to a transit routing in one or both directions, the sharing of the overall accounting rate may be the subject of agreement, for the traffic routed in transit as provided in § 2.2 below.

2 Transit relations¹⁾

2.1 A transit relation is a relation between two terminal Administrations where traffic is routed by switching in an international transit exchange(s) located in a country or countries other than the country of origin or the country of destination.

2.2 In a transit relation, the accounting rate should normally be divided into two terminal shares and one or more transit shares depending upon the circumstances.

In negotiations concerning the division of the accounting rate it is recommended that the balance of the accounting rate, after deduction of the transit shares, be divided equitably between the terminal Administrations concerned.

For example, a division of 50/50 may be used when the facilities provided by the terminal Administrations are approximately equivalent. Proportions other than 50/50 may be used when the facilities made available by each of the Administrations of the terminal countries are not approximately equivalent, or where a 50/50 division would not otherwise be equitable.

Recommendation D.61

CHARGING AND ACCOUNTING PROVISIONS RELATING TO THE MEASUREMENT OF THE CHARGEABLE DURATION OF A TELEX CALL²⁾

(Melbourne, 1988)

1 General considerations

The chargeable duration that is used in the establishment of international accounts is not necessarily the same as that used in the subscribers' accounts. The duration taken into consideration in the international accounts can be fixed precisely and independently of the characteristics of the network.

2 Fully automatic service

2.1 Chargeable duration of a call

For the fully automatic international telex service, the *chargeable duration* of a call should be calculated between a conventional start fixed at between 5 and 7 s after the *start* of the call-connected signal and an instant fixed not later than 1 s after the start of the clearing signal. This conventional start is valid for calls whether charged in accordance with § 2.2.1.1 and § 2.2.1.2.

¹⁾ Canada and the United States of America have expressed reservations regarding the application of the provisions of § 2.

²⁾ See also Recommendation F.61.

2.2 *Methods of charging*

2.2.1 In order to avoid too great a dissymmetry in the basis for determining the collection charges, one of the following two methods of charging should be used in the fully automatic international telex service:

2.2.1.1 charging minute by minute; any fraction of a minute shall be charged as one minute;

2.2.1.2 charging by shorter periods either derived by periodic pulse metering of the type used in the national automatic service or derived by a suitable automatic accounting system.

2.3 *Establishment of international accounts*

2.3.1 With the agreement of the transit Administrations concerned, two Administrations should agree to apply one of the following three methods for the establishment of their international accounts:

2.3.1.1 by basing them on the chargeable durations recorded for subscribers, when the outgoing Administration possesses equipment capable of showing these durations;

2.3.1.2 by basing them on the total (actual) duration of calls measured on international circuits in the outgoing international exchange by means of appropriate meters. When, in relations where signalling systems are used that make it impossible to assess the call durations without excessive complications, the Administrations measure the total occupation time of the outgoing circuits, a correction factor should be applied to the traffic figures so as to assess, in total actual call duration, the traffic that is to serve as the basis for preparing the accounts. The corrections to be applied should be determined by agreement between the Administrations concerned;

2.3.1.3 accounting may be dispensed with, or a lump-sum settlement applied, by agreement between the Administrations concerned.

2.3.1.4 In the case of §§ 2.3.1.1 and 2.3.1.2, accounting shall be based on the sum of minutes and, if appropriate, fractions of minutes for all calls (of the given relation) during the accounting period in question, normally one month, the total being rounded up to whole minutes (e.g. $1.3 + 2.4 + 1.1 + 5.6 = 10.4$ min which in the monthly account shall be rounded up to 11 min).

2.3.2 If a group of circuits is used both for gentex operation and for automatic telex operation, the method described under § 2.3.1.2 may be allowed only if the meters concerned are not operated in the case of gentex calls.

2.3.3 If a circuit is capable of fully automatic and semi-automatic use, and if, further, the method mentioned under § 2.3.1.2 is applied, the equipment in the international outgoing exchange should be capable of identifying semi-automatic calls so that the meters concerned are not operated in the case of semi-automatic calls.

3 **Semi-automatic and manual service**

3.1 *Chargeable duration of a call*

3.1.1 The chargeable duration of a telex call begins at the moment the connection is established between the calling and the called subscribers.

3.1.2 It ends at the moment when the clearing signal given by the calling or called subscriber is transmitted over the international circuit. To this end, the international telex position must be able to receive the clearing signal from both sides.

3.2 *Methods of charging*

With manual or semi-automatic operation:

3.2.1 any telex call of three minutes duration or less shall be charged as for three minutes;

3.2.2 when the duration of a call exceeds three minutes, a charge per minute shall be made for the period in excess of the first three minutes. Any fraction of a minute shall be charged as for one minute.

3.3 *Establishment of international accounts*

The international accounts shall be based on the chargeable minutes as defined under §§ 3.2.1 and 3.2.2.

**GENERAL CHARGING AND ACCOUNTING PRINCIPLES
IN THE INTERNATIONAL TELEX SERVICE FOR MULTI-ADDRESS
MESSAGES VIA STORE-AND-FORWARD UNITS**

(Melbourne, 1988)

Preamble

This Recommendation outlines general charging and accounting principles for the international telex service via store-and-forward units (SFUs) in the case of multi-address delivery in the country or network of destination.

1 General principles

1.1 Four types of international telex store-and-forward facility have been defined in Recommendation F.72.

1.2 The only type of facility considered in this Recommendation is the one in which a subscriber in country of origin A, via an SFU in country A, requires delivery in the country of destination B via an SFU in country B of multiple address messages (case b), § 2 of Recommendation F.72: interconnected store-and-forward refers).

1.3 The following tariff components of the service need to be distinguished:

- the international transmission component and
- the destination country component for storage processing and national delivery.

1.3.1 International transmission component

The international transmission component refers to the transmission of a message from the SFU in country A to the SFU in country B requesting the establishment of a multi-address in country B.

1.3.2 Destination country component

The tariff principles for the destination country component should take into account the cost of storing and processing the message in the SFU as well as the cost for effective deliveries over the national telex network.

2 Collection charges

2.1 Collection charges are a national matter.

2.2 When a message has been effectively delivered to a number of addresses in country B, collection charges are in principle the sum of two components.

2.2.1 The normal collection charge for a single international telex call from the originating subscriber's terminal to the distant country SFU which is a function of message duration including all the addresses.

2.2.2 A charge covering the distant country's SFU storing and processing facility and the national delivery charge which is a function of the number and duration of the messages successfully delivered.

2.3 However, for national reasons, administrations or RPOAs may insert the international transmission component in a single charge per positive delivery in country B, or may adopt any other charging method tending to a total price similar to the one resulting of the application of principles described in § 2.2 above.

2.4 There is no collection charge raised for non-delivery advices sent to the originating subscriber.

3 International accounting

3.1 International transmission component

The level and division of the accounting rate applicable to the single international telex call made to the SFU in country B should be based on that normally applied to the international telex service between country A and B.

3.2 *Destination country component*

3.2.1 The destination country should be entitled to remuneration which covers the costs for the use of its SFU (processing and storage functions) and for the delivery costs of multiple address messages successfully delivered over its national network.

3.2.2 It is desirable that the destination country component be expressed as a function of the duration of the message with one address and of the number of the effectively delivered messages.

3.2.3 In the absence of specific cost studies, the establishment of this destination country component will be for bilateral agreement between the administrations concerned.

3.3 *Non-delivery advices*

Non-delivery advice messages should not be included in the international accounts.

3.4 *Status enquiries*

3.4.1 These messages sent back to the origin country A's SFU, by the destination country SFU, at the request of the originating subscriber, may give rise to international accounting. One approach to this facility would be for the origin country to credit the destination country its normal international accounting rate share for such calls, as if the call originated in country A, based on call data provided by country B.

3.4.2 However, subject to bilateral agreement, administrations may agree to forego, on a mutual basis, accounting for such calls.

3.5 *Exchange of accounting data*

3.5.1 The accounting rate related to the international transmission should be exchanged in the usual way between administrations unless otherwise agreed bilaterally.

3.5.2 Special accounts for multi-address messages in the destination country will be settled and exchanged according to bilaterally agreed rules and formats, as long as a specific Recommendation is not issued on this matter.

4 **References**

CCITT Recommendation F.72 — International telex store-and-forward

CCITT Recommendation D.60 — Charging and accounting in the international telex service.

CHARGING AND ACCOUNTING IN THE INTERNATIONAL TELEX SERVICE

(Geneva, 1976; amended at Melbourne, 1988)

Preamble

An explanation of some of the terms or of some of the expressions used in this Recommendation is given in Recommendation D.000.

DIVISION A

COLLECTION CHARGES

1 Fixing of collection charges

1.1 Each Administration shall, subject to the applicable provisions of national law, fix the charges to be collected from its customers. The level of charges is a national matter; however, in establishing them, Administrations should try to avoid too great a dissymmetry between the charges applicable in each direction of the same relation.

1.2 Where, in accordance with national law, a fiscal tax is levied on collection charges for international telecommunication services, this tax shall be collected only in respect of international telecommunication services, billed to customers in that country.

1.3 The charge levied by an Administration on the customer for a particular communication should in principle be the same, in a given relation, regardless of the route chosen by that Administration.

1.4 In considering the collection charges for a relation in which automatic and semi-automatic working both exist, each Administration should decide to fix its charges either:

- a) by establishing different charges for each method of operation; or
- b) by establishing a single collection charge weighted according to the volume of each type of traffic.

1.5 Safety of life and Government telex calls shall be charged as ordinary private telex calls.

1.6 Charges for telex calls exchanged over emergency routes shall be the same as when the normal route is used.

DIVISION B

INTERNATIONAL ACCOUNTING

1 General

1.1 Procedures relating to remuneration of Administrations of destination and transit countries are as follows:

1.2 Destination Administrations will be remunerated by a procedure whereby the origin Administration keeps its revenue and remunerates the destination Administration for the facilities made available, including the international circuit, the international exchange and the national extension¹⁾ either:

- a) on the basis of a flat-rate price per circuit (called the *flat-rate price procedure*); or
- b) on the basis of traffic units carried (called the *traffic-unit price procedure*);

In either case, the price will be fixed by the destination Administration; or

- c) by a procedure whereby accounting revenue is shared between terminal Administrations (called the *accounting revenue division procedure*).

1.3 Transit Administrations will be remunerated for facilities made available, either:

1.3.1 by the *flat-rate price procedure* relating in the main to direct transit operations; or

1.3.2 by the *traffic-unit price procedure* relating in the main to switched transit operations.

In either case, the price will be fixed by the transit Administration.

1.4 Application of the flat-rate price procedure should be in accordance with the principles in Recommendation D.160. In fixing flat rate prices, Administrations of countries within the same region should follow the principles in the appropriate Regional CCITT Recommendations.

1.5 In fixing traffic-unit prices, Administrations of countries within the same region should follow the principles in the appropriate Regional CCITT Recommendations. For intercontinental telex relations, Administrations should follow the principles in Recommendation D.60.

1.6 Traffic unit

1.6.1 For the purpose of the establishment of accounting rates, the traffic unit of one minute shall be used.

1.6.2 The traffic unit for use in the traffic unit pricing procedure for the measurement of total traffic exchanged is determined by the method of measuring call duration agreed between Administrations for the establishment of their international accounts as provided for in Recommendation F.61.

2 Remuneration of the destination Administration

2.1 Flat-rate price procedure

Under this procedure the destination Administration receives payment for the facilities made available by a flat-rate price fixed by it as a price per circuit. The price per circuit would cover:

- a) The international circuit section provided by the destination Administration;
- b) the use of its international exchange;
- c) the national extension¹⁾.

¹⁾ Bearing in mind, as concerns this element, the location of the international exchange and the distribution of the international traffic within the destination country.

2.2 *Traffic-unit price procedure*

Under this procedure, the destination Administration receives payment on the basis of the price fixed by it per traffic unit. This price will be related to the facilities made available and will take account of:

- a) the international circuit section provided by the destination Administration;
- b) the use of its international exchange;
- c) the national extension ²⁾.

2.3 *Accounting revenue division*

Administrations may agree to divide the total accounting rate into terminal shares payable to the terminal Administrations (and, where appropriate, into transit shares payable to the transit Administrations) in accordance with the principles in Recommendation D.60.

2.4 *Simplification of accounts and use of traffic sampling*

2.4.1 In certain conditions, terminal Administrations may agree not to exchange international accounts when, for example:

- a) the balance of settlement of their accounts is normally negligible;
- b) the *terminal countries'* traffic levels in both directions are more or less equal;
- c) there is approximate equivalence as regards their national extension ²⁾.

2.4.2 Traffic sampling may be used for the establishment of international accounts when the countries involved in a given traffic relation so agree. This sampling may then avoid the necessity for continuous traffic measurements. For example, the samples could cover five working days and could be taken at regular intervals, such as once a year or four times a year, or they could be taken on the occasion of any significant change in the number of circuits in the given relation. Sampling is particularly useful when traffic in any international relationship is reasonably stable.

3 **Remuneration of transit Administrations**

3.1 *Flat-rate price procedure*

3.1.1 It is recommended that in the case of direct transit via other countries, the Administrations of these direct transit countries should be remunerated for the exclusive use of the facilities made available on the basis of a flat-rate price per circuit.

3.1.2 Under the flat-rate price procedure, the terminal Administrations will ensure that the best possible use is made of the circuits because, if those Administrations provide too few circuits, they pay the penalty in the form of the lower quality of service they offer to their subscribers. If they provide too many circuits, they will have to pay more in remuneration and will be penalized financially.

3.2 *Traffic-unit price procedure*

3.2.1 When transit traffic is not handled on direct circuits, the remuneration for the transit routing in the case of traffic passing by switched transit through one or more countries should be made to the Administration of the first transit exchange used, which fixes a price per unit of handled traffic. This price should also include the remuneration to the other transit Administrations, if any, and to the destination Administration, where appropriate.

3.2.2 The procedure of remuneration to the first transit Administration for the entire routing of the traffic (remuneration of the first transit exchange) is necessary to meet the situation where traffic may be routed through subsequent transit exchanges, each of which, under automatic operation, will be unable to identify the origin country of the traffic. This procedure makes the source of the traffic irrelevant for the establishment of accounts. Depending on the accounting methods in force between Administrations, the remuneration of the first transit centre may or may not include payments for use of the facilities of the destination country.

²⁾ Bearing in mind, as concerns this element, the location of the international exchange and the distribution of the international traffic within the destination country.

3.3 *Establishment of a switched-transit relation*

3.3.1 Before switching traffic via a transit exchange, the origin Administration will request the country in which the first switching transit exchange is situated for a price quotation per transit traffic unit to the destination country.

3.3.2 The Administration of the country to which the first transit exchange belongs advises the price per traffic unit for handling the traffic from the transit exchange to the destination country, including remuneration of the latter country where appropriate. This price may be set by the Administration to which the transit exchange belongs on the basis either of a special study or of a price already fixed for the transit routing to the same terminal country of traffic originating in other countries.

3.3.3 The Administration of any country with traffic to be routed in transit may, of course, find it advisable to consult the Administrations of several countries to ascertain which transit routing is the most economical.

3.3.4 The consultations by the origin Administration regarding the transit routing (by switching) of its traffic should be in accordance with the principles of the international routing plan described in Recommendation F.68.

3.4 *Calculation of the remuneration to the first transit Administration on the basis of traffic units*

3.4.1 Remuneration to the Administration of the switched-transit country depends on the number of traffic units handled by its transit exchange.

3.4.2 For the establishment of international accounts, the origin Administration should determine the volume of traffic in minutes of call duration routed each month towards each destination country through this transit exchange.

3.4.3 An alternative version of this system can be contemplated when the traffic to the destination country routed via a given international transit centre is sufficiently stable; the origin Administrations and the first transit exchange might then agree to settlement on the basis of an estimated number of traffic units determined by means of traffic sampling and subject to periodic revision (such as once a year or four times a year).

3.5 *Use of emergency/overflow transit routes*

Where use is made of emergency or overflow transit routes, Administrations should follow the provisions of Recommendation D.60.

4 **Examples of the various procedures**

Examples of the various procedures are given in Recommendation D.150, Annex B.

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SECTION 7

CHARGING AND ACCOUNTING IN THE INTERNATIONAL FACSIMILE SERVICE

Recommendation D.70

GENERAL TARIFF PRINCIPLES FOR THE INTERNATIONAL PUBLIC FACSIMILE SERVICE BETWEEN PUBLIC BUREAUX (BUREAUFAX SERVICE)

(Geneva, 1980; amended at Melbourne, 1988)

Preamble

This Recommendation sets out the general principles and conditions for tarification to be applied by Administrations (postal or telecommunications) for the provision of bureau to bureau facsimile document services using public facsimile stations (Bureaufax Service)¹⁾. For the purposes of applying this Recommendation, the terms "postal Administration" and "telecommunications Administration" shall be defined as follows:

- **postal Administration:** Administration, or part of a combined postal and telecommunications Administration, concerned with the provision of postal services;
- **telecommunications Administration:** Administration, or part of a combined postal and telecommunications Administration, concerned with the provision of telecommunications services.

1 General principles

In determining tariff principles to be applied to this service, consideration should be given to the structure and level of charges applicable to other international telecommunication services supplied by the Administrations concerned, and to the provisions of Recommendation D.5.

2 Charging principles

2.1 In principle, a charge per page shall be levied on senders by Administrations for the utilization of the international public facsimile service between public bureaux. This shall apply regardless of the telecommunication facilities (public networks or dedicated circuits) or type of facsimile terminals used between public bureaux. The origin Administration may decide not to levy a general handling charge or a charge for the transmission on a separate page (where this is considered necessary) of preamble and address details only. The decision whether or not to levy a charge in such cases is a national matter.

¹⁾ See also Recommendations F.160 [1] and F.170 [2].

2.2 In accordance with the Recommendation cited in [3], documents for facsimile transmission shall be accepted up to a maximum size, normally ISO A4 size (210 × 297 mm), or exceptionally up to a larger size, e.g. the North American “legal” format (216 × 356 mm) by bilateral agreement between Administrations. A chargeable page is that part of a document page which is reproducible by facsimile equipment.

2.3 Separate charges for special handling in the national collection and/or delivery of facsimile documents may be levied on the sender and/or the addressee, as appropriate, by the respective originating and/or destination Administration.

3 International accounting

3.1 Accounting rates between Administrations in the international public facsimile service between public bureaux shall be established either on a per page basis or in the same manner as for normal calls over the international public network utilized. Alternatively, Administrations may, by bilateral agreement, account for only bureau handling costs on a per page basis, the use of the international public network being paid for as a function of the duration of use. Where a per page accounting is adopted, by agreement between the Administrations concerned, the transmittal sheet may be excluded from the international accounts unless the lower part contains a message for the addressee. The same procedure is applicable to refunds.

3.2 Where accounting between Administrations is on a per page basis, Administrations shall exchange monthly statements with respect to documents transmitted, showing necessary details for the settlement of accounts, such as the number of pages transmitted and if necessary, the number of documents transmitted, and applicable accounting rates and shares. Where accounting between Administrations is effected in the same manner as for normal calls over the international public network utilized, facsimile transmissions shall form an integral part of the international accounts for that public network.

3.3 Any separate charges for special handling levied on the sender or on the addressee by an Administration for national collection and/or delivery or cancellation are normally not subject to accounting between Administrations.

3.4 Transferred account services may be offered subject to bilateral agreement between Administrations and in accordance with appropriate CCITT Recommendations²⁾.

3.5 If an Administration has accepted a refund claim, the refunded facsimile document charge should not appear in the international accounts, but the other Administrations concerned should be so notified²⁾.

4 Service correspondence

4.1 Subject to formal agreement by the Administrations providing the Bureau fax service, the following shall be free of charge and shall not involve international accounting:

- a) service Bureau fax documents exchanged between the Administrations concerned;
- b) service Bureau fax documents relating to the official business of the ITU, exchanged between Administrations on the one hand, and the Chairman of the Administrative Council of the ITU, the Secretary-General of the ITU, the Director of the CCITT, the Director of the CCIR and the Chairman of the IFRB, on the other hand;
- c) franking privilege Bureau fax documents where consistent with national law.

4.2 § 4.1 above does not apply to service and franking privilege Bureau fax documents exchanged over international public telecommunication networks by postal Administrations except by agreement with the telecommunication Administrations concerned.

²⁾ The Federal Republic of Germany has expressed reservations regarding the application of the provisions of §§ 3.4 and 3.5.

5 Refunds³⁾

5.1 Refund of charges for the utilization of the international public facsimile service between public bureaux may be permitted at the discretion of the Administration, and in accordance with the following conditions. (The provisions on cancellation of facsimile documents are given in the Recommendation cited in [4].)

5.2 A *full refund* may be granted when a facsimile document has been cancelled *before* connection with the addressee has been established. However, a cancellation charge may be imposed and "special handling" charges, if any, will not normally be refunded in such instances.

5.3 A *full or partial refund* may be granted if transmission and/or *delivery* of the entire document or a part of it cannot be effected through no fault of the sender and/or addressee or their agents.

5.4 A *partial refund* may be granted for any page of a document which is not accepted by the addressee because of poor quality and because the service instruction "Risques expéditeur" does not appear in the preamble of the affected pages. Documents not accepted by the addressee cannot be retained by him. However, if the addressee accepts certain pages of the document, no refund will be granted for those pages.

5.5 A *partial refund* may be granted in the case of multipage documents, when the document is cancelled *before* transmission is *completed*. The partial refund will only apply to those pages for which transmission has not begun. A cancellation charge may be imposed and "special handling" charges, if any, will not normally be refunded in such instances.

5.6 *No refund* will be granted when a request for cancellation of a document has been received at the sending bureau *after* transmission has been *completed*, or when transmission of a single page document has *begun*.

5.7 *No refund* will be granted when the sender has been advised that the quality of the original is unsuitable for satisfactory transmission and the service instruction "Risques Expéditeur" appears in the transmittal sheet. In the case of a multipage document, no refund will be granted for any page transmitted under these conditions.

5.8 All claims for refunds of charges must be presented within 3 months of the date of receipt of the document at the receiving bureau. Normally, such claims will require appropriate documentation of the sender's or addressee's claim.

5.9 Should an Administration deem it desirable to destroy the relevant documents before the expiration of the period during which international accounts may be challenged in accordance with the *Telephone and Telegraph Regulations* [5], and hence is not in a position to carry out an enquiry in respect of the services for which it is responsible, such Administration shall bear any difference in the international account or any refund of charges that may arise.

References

- [1] CCITT Recommendation *General operational provisions for the international public facsimile services*, Vol. II, Rec. F.160.
- [2] CCITT Recommendation *Operational provisions for the international public facsimile service between public bureaux (Bureaufax)*, Vol. II, Rec. F.170.
- [3] *Ibid.*, § 2.1.
- [4] *Ibid.*, § 10.
- [5] Find Acts of the World Administrative Telephone and Telegraph Conference (Geneva, 1973) – *Telegraph Regulations* – *Telephone Regulations*, ITU, Geneva, 1973. (See also the Preliminary Note No. 3, page XIV).

³⁾ The Federal Republic of Germany has expressed reservations regarding the application of the provisions of § 5, "Refunds".

**GENERAL TARIFF PRINCIPLES FOR THE
PUBLIC FACSIMILE SERVICE BETWEEN SUBSCRIBER STATIONS
(TELEFAX SERVICE)**

(Geneva, 1980)

Preamble

This Recommendation sets out the general principles and conditions for tarification to be applied by Administrations for the provision of an international public facsimile service between subscriber stations, using the international public switched telephone network¹⁾ or international Datel network²⁾ (Telefax service)³⁾.

1 General Principles

In determining the tariff principles to be applied in this service, consideration should be given to the structure and level of charges applicable in other international telecommunication services supplied by the Administrations concerned and to the provisions of Recommendation D.5.

2 Charging principles

2.1 In principle, the charges for calls in the international Telefax service shall be based on those applied for the normal use of the network concerned.

2.2 Administrations may apply additional charges for the provision of user facsimile station equipment and/or special facilities.

3 International accounting

3.1 Normally, accounting for calls in the international Telefax service shall be at the same accounting rates and be effected in the same manner as accounting for calls over the international public network utilized. Such calls will form an integral part of the international accounts for that public network and no additional accounting between Administrations should be necessary for such calls.

In the case where different accounting rates are applied for Telefax calls, accounting for those calls should be listed separately.

The same procedures are applicable to refunds.

¹⁾ Some Administrations do not permit the international public switched telephone network to be used for facsimile transmission.

²⁾ The Datel network is a public network composed of special quality voice grade circuits (normally conforming to the specifications of Recommendation M.1020 [1]) or telephone circuits assigned to the Datel service. These circuits enable the Administrations to permit customer transmission of data and/or facsimile documents on an assured basis.

³⁾ See also Recommendation F.160 [2] as well as the Recommendation cited in [3].

3.2 Any additional charges applied by an Administration for the provision of user facsimile station equipment and/or special facilities shall be retained by that Administration and shall not be included in the international accounts.

3.3 Collect and transferred account services may be offered subject to bilateral agreement between Administrations and in accordance with appropriate CCITT Recommendations.

4 Service correspondence

4.1 Subject to formal agreement by the Administrations providing the Telefax service, the following shall be free of charge and shall not involve international accounting:

- a) service Telefax calls exchanged between the Administrations concerned;
- b) service Telefax calls relating to the official business of the ITU, exchanged between Administrations on the one hand, and the Chairman of the Administrative Council of the ITU, the Secretary-General of the ITU, the Director of the CCITT, the Director of the CCIR and the Chairman of the IFRB, on the other hand;
- c) franking privilege Telefax calls where consistent with national law.

4.2 § 4.1 above does not apply to service and franking privilege Telefax calls exchanged over international public telecommunication networks by postal Administrations⁴⁾ except by agreement with the telecommunication Administrations⁴⁾ concerned.

5 Refunds

5.1 Charges for calls in the international Telefax service may be refunded at the discretion of Administrations, when circuit failure or failure of equipment provided by the Administrations prevents satisfactory transmission. However, refund of charges may not be applicable where transmission over a public network is permitted on an "unassured" basis, that is, without guarantee as to transmission speed and/or quality of transmission.

5.2 To obtain a refund, the subscriber shall apply to the Administration responsible for his facsimile service, submitting in support of his claim for a refund the original document and the faulty copy received at the destination point, when such is required.

References

- [1] CCITT Recommendation *Characteristics of special quality international leased circuits with special bandwidth conditioning*, Vol. IV, Rec. M.1020.
- [2] CCITT Recommendation *General operational provisions for the international public facsimile services*, Vol. II, Rec. F.160.
- [3] CCITT Recommendation *General operational provisions for the international public facsimile service between subscriber stations* (Telefax), Vol. II, Rec. F.180, § 5.

⁴⁾ The terms "postal Administration" and "telecommunication Administration" are defined as follows:

- **postal Administration**: an Administration, or the part of a combined postal and telecommunication Administration, concerned with the provision of postal services;
- **telecommunication Administration**: an Administration, or the part of a combined postal and telecommunication Administration, concerned with the provision of telecommunication services.

**GENERAL TARIFF AND INTERNATIONAL ACCOUNTING PRINCIPLES FOR
INTERWORKING BETWEEN THE INTERNATIONAL BUREAUFAX AND
TELEFAX SERVICES**

(Malaga-Torremolinos, 1984)

Preamble

This Recommendation sets out the charging and international accounting principles applicable by Administrations for the transmission of facsimile documents in both directions between subscribers to the Telefax service and public facsimile bureaux¹⁾.

1 General principles

In determining the tariff principles to be applied to this service, consideration should be given to the structure and level of charges applicable to other international telecommunication services supplied by the Administrations concerned, and to the provisions of Recommendation D.5.

2 Charging principles

2.1 *International transmission of facsimile documents from a public bureau to a subscriber station in another country*

The originating Administration should charge:

- a) either on a per page basis, as described in Recommendation D.70, § 2 relating to the Bureaufax service,
- b) or on the normal call charge for the international network used.

In the case of b), the originating Administration may levy on the sender a separate charge for handling and, where appropriate, for national collection of the facsimile document, in addition to the call charge for the international network used.

2.2 *International transmission of facsimile documents from a subscriber station to a public bureau in another country*

The Administration of destination should charge:

- a) either on a per page basis, as described in Recommendation D.70, § 2,
- b) or an amount which covers the cost of handling of the facsimile document and, where appropriate, for national delivery to the addressee.

It may be necessary for all charges applied by the Administration of destination for handling of the facsimile document, including, where appropriate, for national delivery, to be levied on the addressee in accordance with national arrangements.

3 International accounting principles

3.1 Generally speaking, accounting procedures for interworking between the international Bureaufax and Telefax services should be based on the same accounting rates and be effected in the same manner as for the calls set up normally on the international public network used. These facsimile calls are an integral part of the international accounts for the public network and should not give rise to any additional accounting measures between Administrations.

¹⁾ See Recommendation F.190 [1].

3.2 Any charge levied by an Administration for the handling of the facsimile document or for national collection or delivery, or for cancellation should be retained by that Administration and not appear in the international accounts.

3.3 The collect call facility and the transferred accounts service may be admitted subject to bilateral agreement between the Administrations concerned and subject to the provisions of the relevant CCITT Recommendations.

4 Refunds

4.1 Refund or cancellation of charges may be permitted at the discretion of Administrations in accordance with the following conditions.

4.2 Public bureau to subscriber station transmissions

In the case of transmission from a public bureau to a private subscriber station in a destination country, refund of charges may be permitted in accordance with Recommendation D.70, § 5.

4.3 Subscriber station to public bureau transmissions

4.3.1 In the case of transmission from a private subscriber station to a public bureau in a destination country, no charge will normally be levied on the sender or addressee by the destination Administration:

- 1 a) if delivery of the entire facsimile document cannot be effected through no fault of the sender and/or addressee or their agents, or
- b) where applicable, for any page of a facsimile document which is not accepted by the addressee because of poor quality and where the service instruction "risques expéditeur" does not appear in the preamble of the affected pages. Pages not accepted by the addressee cannot be retained by him; however, if the addressee accepts certain pages of the document, no cancellation of charges will be granted for those pages.

4.3.2 Where a facsimile document is cancelled during or after reception by the public bureau from the private subscriber station but before delivery to the addressee, it is at the discretion of the destination Administration whether or not to charge for handling of the document by the public bureau. A cancellation charge may be imposed in such circumstances.

4.3.3 No refund shall normally be allowed of charges incurred by the originating subscriber in respect of calls from a private subscriber station to a public bureau, except where this is permitted under the normal refund arrangements for the public network used.

5 Service correspondence

Subject to formal agreement by the Administrations providing interworking between Bureau fax and Telefax services, service documents sent from a Bureau fax to a Telefax station shall be free of charge, and shall not involve international accounting.

Reference

- [1] CCITT Recommendation — *Operational provisions for the international facsimile service between public bureaux and subscriber stations and vice versa*, Rec. F.190.

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SECTION 8

CHARGING AND ACCOUNTING IN THE INTERNATIONAL PHOTOTELEGRAPH SERVICE

Recommendation D.80

ACCOUNTING AND REFUNDS FOR PHOTOTELEGRAMS¹⁾

(Melbourne, 1988)

1 Accounts

1.1 *Between public stations*

1.1.1 Accounting methods for charges levied for traffic between public stations shall be the same as for telegram charges. These accounts shall constitute a special section in the telegraph accounts.

1.2 *From a public station to a private station*

1.2.1 Accounting methods for charges levied for these phototelegrams shall be the same as for telegram charges. When the accounts are established by the destination country, the public station shall inform the international phototelegraph position in its country of the particular scale of charges pertaining to each phototelegram. The latter station, when booking the call, shall pass this information on to the IPP in the destination country for accounting purposes.

1.2.2 This accounting shall constitute a special section in the telegraph accounts. The special surcharge for use of the public station is retained by the Administration governing the public station.

1.3 *From a private station to a public station*

1.3.1 Accounting methods for charges in connection with the use of telephone circuits are governed by Recommendation D.81.

1.3.2 The special surcharge applying to the use of a public station is retained by the Administration operating the public station.

2 Refunds

2.1 *Between public stations*

2.1.1 The sender of a phototelegram or his authorized representative may, on establishing his status and identity, cancel his phototelegram only if it has not been transmitted by the office of origin.

2.1.2 The charge paid for a phototelegram that has been cancelled shall be refunded, but the Administration concerned may retain a cancellation charge. The latter shall be equal to one-third of the phototelegram first step charge in the service in question, when the call has been partly or completely set up.

¹⁾ See also Recommendation F.80.

2.1.3 In principle the provisions of § 2.1.2 above shall also apply to phototelegrams payable by the addressee or by a third party.

2.1.4 The charges collected shall be refunded to the sender if the phototelegram does not reach its destination, except if it has been sent by post.

2.1.5 If the addressee lives in the locality of the incoming station, the charges shall also be refunded if the period between handing in and the time when the phototelegram is delivered to the addressee exceeds 8 hours in the European system, or 20 hours in the extra-European system.

2.1.6 When a phototelegram is sent by post to the outgoing public station, the time required for the postal delivery shall not be counted against the phototelegraph service. In this case the time of arrival at the public station should be taken into consideration when calculating any delay.

2.1.7 If the addressee does not live in the locality of the incoming station the periods specified above, which justify a refund, shall be reckoned from the time of handing in to the time of delivery to the postal service.

2.1.8 There shall be no refund of a charge that has been collected if the phototelegram includes in its preamble the service instruction **RISQUES EXPEDITEUR**.

2.2 *From a public station to a private station*

2.2.1 The points covered in §§ 2.1.1 to 2.1.3 above are also applicable when the phototelegram is cancelled or when it is refused by the addressee.

2.2.2 Charges may not in general be refunded or waived, unless transmission has failed to take place or has been faulty, owing to circuit interruption or to faults in the public station's equipment. Refund of charges shall be left to the discretion of the Administration to which the public station belongs.

2.3 *From a private station to a public station*

2.3.1 The provisions for the cancellation of telephone calls also apply to the cancellation of phototelegraph calls.

2.3.2 If a phototelegram is cancelled, the Administration of the outgoing country shall collect the surcharge required for the intervention of the public station. If the private station desires, the received phototelegram will be sent to this station by post.

2.3.3 If, in the case of retransmission by a public station, cancellation is requested before the next circuit has been provided but after the phototelegram has been received by the public station responsible for the proposed retransmission, the sender shall pay at least the charge normally applicable to terminal phototelegraph traffic on the route followed.

2.3.4 The provisions of §§ 2.1.4 to 2.1.8 above shall apply as regards the waiving of charges when phototelegrams are not delivered or are delivered too late.

Recommendation D.81

ACCOUNTING AND REFUNDS FOR PRIVATE PHOTOTELEGRAPH CALLS¹⁾

(Melbourne, 1988)

1 Accounting

1.1 The accounts of charges for phototelegraph calls between private stations or between an (outgoing) private station and an (incoming) public station are established in the same way as the accounts for telephone charges. They shall be shown in a special section of the telephone accounts.

¹⁾ See also Recommendation F.80 bis.

1.2 If the Administration agrees to grant a refund after a call has been cleared, the charge for the phototelegraph call shall be refunded and will not be included in the international accounts.

1.3 If the refund is granted only after dispatch of the international accounts, the cost of it shall be borne by the Administration that posted the relevant charge to its account.

2 Refunds

2.1 General

The provisions relating to cancellation of a telephone call request or refusal of a call are also applicable to phototelegraph calls between private stations or between (outgoing) private stations and (incoming) public stations.

2.2 Calls between private stations

2.2.1 No charge is collected when, on account of faulty circuits, the transmission has not taken place or has not been concluded provided that the operator who accepted the request for the phototelegraph call has been informed of the situation.

2.2.2 To obtain refunds when it is seen that, after interruption of the call, the transmission was faulty, the phototelegraph station having paid the charge for the queried call should apply to its Administration, accompanying its request for a refund with the original of the picture and the faulty proof received at the other end.

2.3 Calls from a private station to a public station

Charges shall not in general be waived unless transmission has failed to take place or has been defective owing to circuit interruption or to faults in the public station's equipment. Refunds shall be left to the discretion of the Administration to which the public station belongs.

Recommendation D.83

RATES FOR PHOTOTELEGRAMS AND PRIVATE PHOTOTELEGRAPH CALLS

(Melbourne, 1988)

The CCITT,

considering

(a) that phototelegraph calls are frequently set up on circuits normally used for telephone traffic;

(b) that the holding time of these circuits used depends not only on the duration of the phototelegraph transmission proper but also on the time needed to prepare the call and return the circuits used to the telephone service;

(c) that when a phototelegram is handled, the cost includes the handing in and delivery expenses as well as the cost of using public phototelegraph stations,

considering, furthermore

(d) that the phototelegraph equipment in service may have different drum diameters;

(e) that the duration of transmission of a phototelegram is in fact the essential criterion for the calculation of the charge to be applied;

(f) that this duration depends simply on the dimension along the axis of the drum on the transmitting equipment;

(g) that the chargeable duration for phototelegrams should be related to the drum diameter of the sending equipment;

(h) that charging of phototelegrams on the basis of their surface area should continue to be applied only in cases where the Administrations concerned explicitly agree to do so,

unanimously declares the view

1 In continental relations

1.1 General

1.1.1 Phototelegrams deposited by a public station, either with another public station or with a private station, should be charged for according to the same principle, i.e. a fixed tariff, with various charging steps.

1.1.2 Charges for phototelegraph calls between private stations or between a private (outgoing) station and a public (incoming) station should be reckoned at the same rates as telephone calls, depending on the charging period concerned (heavy-traffic or light-traffic period).

1.1.3 However, the charge for the actual period of use should be increased by a surcharge of four minutes corresponding to the time needed to prepare the call and to restore the circuits to the telephone service.

1.1.4 In addition, for calls from a private station to a public station, the Administration responsible for the public station should levy a special charge for the use of the public station.

1.2 Phototelegraph calls booked by a public station

1.2.1 The rates for phototelegrams between public stations, with the exception of charges for special services, and the shares of charges accruing to Administrations should be calculated in accordance with Table 1/D.83.

TABLE 1/D.83

Scale of rates	Dimensions of phototelegram			Total charge in gold francs (to be levied at outgoing end)	Share accruing to the			
	1st side for the following drum diameters				2nd side (chargeable length)	Outgoing Administration	Transit Administration	Incoming Administration
	66 mm	70 mm	88 mm					
1st step				1.5 <i>D</i> or less	20 + 12 y	10 + 12 a	12 b	10 + 12 a
2nd step	≤ 18 cm	≤ 20 cm	≤ 24 cm	over 1.5 <i>D</i> up to 2 <i>D</i>	20 + 15 y	10 + 15 a	15 b	10 + 15 a
3rd step				over 2 <i>D</i> up to 2.5 <i>D</i>	20 + 18 y	10 + 18 a	18 b	10 + 18 a

1.2.2 The rates for phototelegrams transmitted by a public station to a private station and the shares accruing to Administrations should be calculated in accordance with Table 2/D.83.

1.2.3 The lengths of phototelegrams are measured in centimetres, a fraction of a centimetre being reckoned as a full centimetre.

1.2.4 For divided phototelegrams, the charge is calculated separately for each part.

1.3 Phototelegraph calls booked by a private station

1.3.1 The charge for a phototelegram transmitted by a private station to a public station deposited by phototelegraphy, or vice versa, at the request of the private stations (collected by phototelegraph) and the shares accruing to Administrations should be calculated in accordance with Table 3/D.83.

TABLE 2/D.83

Scale of rates	Dimensions of phototelegram			Total charge in gold francs (to be levied at outgoing end)	Share accruing to the			
	1st side for the following drum diameters				2nd side (chargeable length)	Outgoing Administration	Transit Administration	Incoming Administration
	66 mm	70 mm	88 mm					
1st step				1.5 <i>D</i> or less	10 + 12 <i>y</i>	10 + 12 <i>a</i>	12 <i>b</i>	12 <i>a</i>
2nd step	≤ 18 cm	≤ 20 cm	≤ 24 cm	over 1.5 <i>D</i> up to 2 <i>D</i>	10 + 15 <i>y</i>	10 + 15 <i>a</i>	15 <i>b</i>	15 <i>a</i>
3rd step				over 2 <i>D</i> up to 2.5 <i>D</i>	10 + 18 <i>y</i>	10 + 18 <i>a</i>	18 <i>b</i>	18 <i>a</i>

Note 1 — D = the diameter of the drum of the sending phototelegraph equipment.

Note 2 — For the meaning of a , b and y , see Notes after § 1.3.2.

Note 3 — Where the 2nd side (chargeable length) exceeds 2.5 D , the total charge in both §§ 1.2.1 and 1.2.2 is increased by 3 y per step for each extra 0.5 D .

TABLE 3/D.83

Charge	In gold francs	Share accruing to the		
		Administration of the country of the private station	Transit Administration	Administration of the country of the public station
Total	10 + (C + 4) y			
To be collected on behalf of the private station	(C + 4) y	(C + 4) a	(C + 4) b	10 + (C + 4) a
To be collected on behalf of the public station	10			

1.3.2 Charges for phototelegraph calls between private stations, and the shares accruing to Administrations are calculated in accordance with Table 4/D.83.

TABLE 4/D.83

Total charge in gold francs to be collected at the outgoing end	Share accruing to the		
	Outgoing Administration	Transit Administration	Incoming Administration
$(C + 4)y$	$(C + 4)a$	$(C + 4)b$	$(C + 4)a$

Notes — In the tables shown above:
y is the charge (in special drawing rights — SDR — or in gold francs) for a unit telephone call (1 minute) for the phototelegraph transmission;
a and *b* are the shares of the charge *y* accruing to the terminal and transit Administrations;
C signifies the duration (in minutes) counted from the moment the phototelegraph connection with the called station is offered to the caller until the moment the calling station signals the end of the call.

1.3.3 If a private station books an **URGENT** phototelegraph call, the rates for the corresponding unit telephone call should be applied.

1.3.4 In relations where reversed-charge phototelegraph calls are allowed, the rules governing such calls should be agreed upon by the Administrations concerned.

2 **In intercontinental relations**

2.1 When submarine cable or satellite circuits are used for phototelegraph traffic, charges for phototelegrams and for phototelegraph calls shall be based on the same principle as in continental relations (see the provisions in § 1 above).

2.2 For divided phototelegrams in intercontinental relations, the charge is calculated separately for each part.

Recommendation D.85

**CHARGING FOR INTERNATIONAL PHOTOTELEGRAPH CALLS TO
MULTIPLE DESTINATIONS¹⁾**

(Melbourne, 1988)

1 **Charging**

Multiple calls from a public station raise no problems as regards charging. Each phototelegram is charged individually, even in cases where the same picture forms subjects of different phototelegrams transmitted simultaneously.

For calls from a private station, the following provision is to be observed:

2 **Charging for further dissemination**

Charges for national calls set up at the request of a main receiving station, with a view to further dissemination, are collected from the calling party and are not included in international accounts.

¹⁾ See also Recommendation F.85.

SECTION 9

CHARGING AND ACCOUNTING IN THE MOBILE SERVICES

Recommendation D.90

CHARGING, ACCOUNTING AND REFUNDS IN THE MARITIME MOBILE SERVICE

Introductory Notes

- 1 Pursuant to Resolutions Nos. Mar2 – 22 and Mar2 – 23 and Recommendation Mar2 – 18 of the *World Maritime Administrative Radio Conference*, [1] [8] the CCITT drew up Recommendations E.200/F.110 and D.90/F.111 concerning operational and accounting provisions for the Maritime Mobile Service. Having accepted the conclusions of the CCITT studies, the *World Administrative Radio Conference*, [2] adopted texts dealing with the basic principles on operating and accounting procedures, leaving the detailed application of these principles to be covered by CCITT Recommendations.
- 2 Article 66 (No. 5085) of the *Radio Regulations* [3] specifies that the provisions of the *Telegraph Regulations* [4] and the *Telephone Regulations* [4], taking into account CCITT Recommendations, shall apply to radiocommunications in so far as the relevant provisions of the *Radio Regulations* do not provide otherwise.
- 3 Since, in accordance with Article 69 of the *Radio Regulations*, Article 66 entered into force on 1 January 1981, the provisions of this Recommendation were applicable from that date.
- 4 References commencing with the letters A, B, C and D concern provisions in Divisions A, B, C and D respectively of Recommendation E.200/F.110 entitled *Operational provisions for the maritime mobile service*.
- 5 For the purpose of this Recommendation the term *Maritime Mobile Service* should be understood to embrace the Maritime Mobile-Satellite Service as well as the MF, HF, VHF and UHF radio media, unless specifically stated otherwise.
- 6 Throughout this Recommendation the term Administration means that recognized private operating agency/agencies are included. However, where this term is used in respect of notification by Administrations to the General Secretariat of the ITU, this applies only to recognized private operating agencies that have been authorized by Administrations to carry out such notification.
- 7 For the purpose of this Recommendation, the terms *mobile station* and *land station* should be considered as analogous to *ship station* and *coast station* respectively used in the *Radio Regulations* [3].

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DIVISION J

GENERAL

1 Definitions

J1 1.1 accounting authority

F: autorité chargée de la comptabilité

S: autoridad encargada de la contabilidad

The Administration of the country that has issued the licence for a mobile station (or the recognized private operating agency or other entity/entities designated by the Administration in accordance with L1 to L6) to whom maritime accounts in respect of mobile stations licensed by that country may be sent.

J2 1.2 accounting authority identification code (AAIC)

F: code d'identification de l'autorité chargée de la comptabilité (CIAC)

S: código de identificación de la autoridad encargada de la contabilidad (CIAC)

The discrete identification code of accounting authority responsible for the settlement of maritime accounts (see Annex A).

J3 1.3 maritime account

F: compte maritime

S: cuenta radiomarítima

The account issued by the Administration operating a land station in respect of telecommunication traffic exchanged between the land station and a mobile station.

J4 1.4 landline charge

F: taxe de ligne

S: tasa de línea

The charge relating to transmission over the general network of telecommunication channels, national and international.

J5 1.5 land station charge

F: taxe terrestre

S: tasa terrestre

The charge relating to the use of facilities provided by the land station in the maritime mobile services or by the earth station in the Maritime Mobile-Satellite Service. In the Maritime Mobile-Satellite Service, this charge shall include all space segment costs. An Administration may also choose to present its total land station charge in its component parts.

J6 1.6 mobile station charge

F: taxe de station mobile

S: tasa de estación móvil

The charge collected on board by the mobile station relating to the use of facilities provided by the mobile station.

DIVISION K

CHARGING

1 General

1.1 General

- K1 1.1.1 The charges for radiocommunications consist of:
- K2 a) the landline charges;
- K3 b) the land station charges;
- K4 c) any charges for special services for telegrams that have to be considered in the accounting;
and
- K5 d) any special charges for special facilities.
- K6 1.1.2 The landline charge for national telecommunication channels applicable to radiocommunications between a mobile station and the country of the land station is notified either in special drawing rights (SDRs) or in gold francs to the ITU General Secretariat by the land station Administration.
- K7 1.1.3 The landline charges applicable to radiotelecommunications between a mobile station and a country other than that of the land station shall be:
- a) the collection charges fixed or applied for telecommunications services in the international relation concerned; or
- b) included in a combined charge covering both the landline and the land station, the level of which is fixed by the land station Administration.
- K8 1.1.4 The landline charges and land charges expressed in SDRs or gold francs, shall be notified to the ITU General Secretariat by the land station Administration responsible for fixing them.
- K9 1.1.5 The landline and land station charges notified to the ITU General Secretariat in accordance with K6 to K8 will be published in the *List of Coast Stations* [5].
- Note* – For countries that have not introduced banded collection charges for international services, only a limited number of charges, for routes in frequent use, will be published. Administrations of these countries should indicate to the ITU General Secretariat which charges should be published in the *List of Coast Stations* [5].
- K10 1.1.6 The Administration of the country that has issued the licence for a mobile station may authorize it to collect on board and to retain mobile station fees. The Administration may set an upper limit to these fees.
- K11 1.1.7 Mobile stations must be acquainted with the tariffs necessary for charging. However, they are authorized, where necessary, to obtain such information from land stations. Charges furnished by land stations are expressed either in SDRs or in gold francs.

1.2 Tariff changes

- K12 New or modified charges shall not come into effect for international traffic for countries other than the one which establishes the charges until the first day of the month following expiry of the period specified below. The period will be counted from the day after the publication date of the ITU Operational Bulletin which contains this notification. Administrations providing information for publication in the Operational Bulletin should observe the deadlines indicated in the Bulletin in forwarding this information to the ITU General Secretariat.

The period to be taken into account is as follows:

- K13 a) for traffic from mobile station to land: 1 month and 15 days;
- K14 b) for traffic from land to mobile station: 15 days, except for changes to bring charges into line with those on competing routes, in which case the period shall be 10 days.

1.3 *Radiocommunications between mobile stations*

- K15 1.3.1 When a single land station is used as an intermediary between mobile stations, two land station charges are collected. If the land station charge applicable to traffic with the origin mobile station is different from that applicable to traffic with the destination mobile station, the sum of these two charges is collected.
- K16 1.3.2 When it is necessary to use two land stations as intermediaries between two mobile stations, the land station charge for each station is collected and also the landline charge for the section between the two land stations.

2 **Radiotelegrams**

2.1 *General*

- K17 2.1.1 The land station charge and the mobile station charge are fixed on the basis of a word charge.

The general provisions for the counting of words are defined in Recommendation F.1, and are published in the manual for use by the Maritime Mobile and Maritime Mobile Satellite Services.

Particular attention is directed to Recommendation F.1, §§ A.115 to A.128 to ensure proper application of these provisions.

- K18 2.1.2 The total charge of radiotelegrams is collected from the sender.
- K19 2.1.3 No additional charge shall be made when acknowledgement of receipt of a radiotelegram is made through another mobile station or land station by service advice, or when an intermediate mobile station assists in the forwarding of a radiotelegram.

2.2 *Special charging arrangements*

2.2.1 *Radiotelegrams of immediate general interest*

- K20 No charge for radio transmission in the Maritime Mobile Service is made for radiotelegrams of immediate general interest, provided that they are:
 - K21 a) distress messages or replies thereto;
 - K22 b) radiotelegrams originating in mobile stations notifying the presence of icebergs, derelicts, mines and other dangers to navigation, or announcing cyclones and storms;
 - K23 c) radiotelegrams originating in mobile stations announcing unexpected phenomena threatening air navigation or the sudden occurrence of obstacles at airports;
 - K24 d) radiotelegrams originating in mobile stations notifying sudden changes in the position of buoys, the working of lighthouses, devices connected with buoyage, etc.; or
 - K25 e) service radiotelegrams relating to the maritime mobile service.

2.2.2 *Radiotelegrams relating to medical advice*

- K26 No charge for radio transmission is made for radiotelegrams relating to medical advice provided that:
 - K27 a) they are exchanged directly between mobile stations and land stations that are shown in the *List of Radiodetermination and Special Service Stations* [7] as providing such a service, and,
 - K28 b) they are addressed in accordance with the conditions indicated in that List.

2.2.3 Meteorological radiotelegrams

- K29 Land station charges applicable to meteorological radiotelegrams should be reduced by at least 50% in all relations.

2.2.4 Radiotelegrams concerning persons protected in time of war

- K30 2.2.4.1 Radiotelegrams concerning persons protected in time of war by the *Geneva Conventions* of 12 August 1949, are accepted under the conditions specified in § 4 of the Annex to the *Telegraph Regulations* [4] taking into account CCITT Recommendation F.1.
- K31 2.2.4.2 The land station charges for these **RCT** radiotelegrams shall be decreased in the same proportion as specified for **RCT** telegrams in CCITT Recommendation F.1.

2.2.5 Radiomaritime letters

- K32 2.2.5.1 Except as otherwise provided in K33 to K37, radiomaritime letters may be accepted, taking into account CCITT Recommendations relating to letter telegrams, if the telegram service is used to convey radiomaritime letters.
- K33 2.2.5.2 The total charge shall include the postal charge (by ordinary letter or airmail letter) due for delivery in the land station country.
- K34 2.2.5.3 An additional charge may be collected where delivery is to be made to a country other than that of the land station.
- K35 2.2.5.4 The following charges are added where applicable:
- K36 a) charges due for special services;
- K37 b) the landline charge when transmission on the land section is exceptionally by telegraph.

3 Radiotelephone and radiotelex calls

3.1 Land stations and landline charges

- K38 3.1.1 If no uniform charges apply in respect of the land stations of a country, different land station charges shall be fixed for the MF, HF and VHF bands and for the Maritime Mobile-Satellite Service.
- K39 3.1.2 If, due to the lack of technical facilities, no extra charges apart from the normal international landline charges can be levied by the origin Administration, no land station charges will be collected for international automatic VHF radiotelephone calls in the to-mobile station direction, if so decided by the land station Administration. The *List of Coast Stations* [5] shall indicate which Administrations accept such calls without levying land station charges.
- K40 3.1.3 The unit charge is the charge for an ordinary private call of one-minute duration except when provision K44 is applied for automatic operation.
- K41 3.1.4 The minimum charge for a manual, single-operator or semi-automatic call is three units.
- K42 3.1.5 Automatic calls should be charged by one of the following two methods, taking into account CCITT Recommendations:
- K43 a) charging minute by minute;
- K44 b) charging by periodic pulses of the type used in the national automatic service.
- K45 3.1.6 The charge for a call is normally collected from the calling party with the exception of collect calls (if collect calls are admitted). For collect calls, the charge shall be payable by the called party.
- K46 The called party must accept responsibility for collect charges prior to transmission of the communications involved. This may be accomplished by:
- K47 a) acceptance on a message basis, as for public message telephone service;
- K48 b) acceptance on a continuing basis for land station charges and landline charges, depending upon the service involved.

K49 3.1.7 When handled through a land station, the chargeable duration of a manual or single-operator call will be fixed at the end of the call by the land station; if two land stations are participating in the handling of the call, the opinion of the land station that accepted the call from the originating mobile station will prevail.

K50 3.1.8 The decision of the land station according to K49 will also be valid for international accounting.

3.2 *Special charges*

K51 3.2.1 The special charges for personal radiotelephone calls (from mobile station to land) for either credit card or collect calls, if admitted, shall be applied with manual or semi-automatic operation.

K52 3.2.2 No special charges for personal radiotelephone calls to mobile stations handled by manual or single-operator service shall be applied in the Maritime Mobile Service, with the possible exception of the Maritime Mobile-Satellite Service.

K53 3.2.3 The charge of special call facilities shall be calculated on the basis used for an international call, applied to either:

K54 a) the landline charge only; or

K55 b) all components of the call charge.

K56 3.2.4 When the booking of a radiotelephone call that is liable to the payment of a special charge (for example, a collect call) is accompanied by a booking of a personal call, only one special charge shall be collected.

4 **Radiotelexogram**

K57 4.1 The international telex charge shall be the same as is applied in the international telex relation concerned.

K58 4.2 The land station charge may be the same charge as applied to Radiotelegrams except for charges related to special services as specified in K20 to K37, or may be fixed in terms of the unit of chargeable duration as converted on the basis of the number of words.

K59 4.3 The total charge for radiotelexograms should be collected from the sender except where other provisions are agreed.

5 **Radiomaritime telex letter**

K60 Each Administration shall take appropriate measures to collect charges for delivery.

DIVISION L

ACCOUNTING

1 General

- L1 1.1 Charges for radiocommunications from ship to shore shall in principle, and subject to national law and practice, be collected from the maritime mobile station licensee:
- L2 a) by the Administration that has issued the licence, or
- L3 b) by a recognized private operating agency, or
- L4 c) by any other entity or entities designated for this purpose by the Administration referred to in L2.
- L5 1.2 The Administration or the recognized private operating agency or the designated entity (or entities) is referred to in this Recommendation as the *accounting authority*.
- L6 1.3 Each accounting authority will be allocated a discrete identification code (see Annex A).
- L7 1.4 The name(s) and address(es) of the accounting authority(ies) with their respective identification codes shall be notified to the ITU General Secretariat for inclusion in the *List of Ship Stations* [6]. The number of such accounting authorities responsible for mobile stations licensed by the Administration concerned shall be limited as far as possible and should not exceed 25.
- L8 1.5 The licensing Administrations may authorize accounting authorities recognized by them to notify the ITU directly of additions, modifications and deletions to be made in the *List of Ship Stations* as regards ship stations for which they have accounting responsibility. Such additions, modifications and deletions should contain, whenever possible, the full details required for the List. Copies of any such notification to the ITU by an accounting authority may also be required by the licensing Administration in order to avoid duplication of notification to the ITU. When such authorization is given to accounting authorities, the licensing Administration shall notify the ITU of the granting of authority.
- L9 1.6 For responsibility for payment of accounts rendered in accordance with L1 to L8, see L57 to L60.

2 Establishment of accounts

2.1 Maritime accounts

- L10 2.1.1 In the case of radiocommunications originating in mobile stations, the land station Administration shall debit the accounting authority for the origin mobile station with:
- L11 a) the land station charges;
- L12 b) the landline charges;
- L13 c) any charges for special services for telegrams;
- L14 d) where appropriate, the special charges for radiotelephone calls with special facilities;
- L15 e) where appropriate, postal charges on radiomaritime letters.
- L16 2.1.2 The accounting for radiocommunications originating in mobile stations shall be based on accounting data gathered in the land station country, recording:
- L17 a) the mobile station identification;
- L18 b) the accounting authority identification code, if applicable;
- L19 c) the number of the addressee, including country and area codes;
- L20 d) chargeable duration;
- L21 e) start of the conversation time, if applicable;
- L22 f) traffic category.
- L23 g) type of call (automatic, operator-assisted, collect, etc.)

- L24 2.1.3 In the case of radiocommunications, handled by manual or single-operator service, addressed to mobile stations and originating in a country other than that of the land station, the land station Administration shall, unless otherwise agreed as provided for in L37, debit the origin Administration with the land station charges.
- L25 2.1.4 As regards automatic and semi-automatic radiocommunications, see L38 and L39.
- L26 2.1.5 In the case of a radiotelegram that has been forwarded by the land station to a mobile station in port by means other than radio (see B53 of Recommendation F.110), only the land station charge shall be debited.
- L27 2.1.6 In the case of radiocommunications exchanged between mobile stations:
- L28 2.1.6.1 Through the medium of a single land station: the land station Administration debits the accounting authority for the origin mobile station with the appropriate charges.
- L29 2.1.6.2 Through the medium of two land stations: the first land station Administration debits the accounting authority for the origin mobile station with the appropriate charges, taking into account L10 to L16. Thereafter, L24 to L26 are applied by the second land station, the first land station being regarded as the office of origin as far as the accounts are concerned.
- L30 2.1.7 For accounting purposes, collect calls shall be regarded as originating in the destination country or mobile station and shall be identified as collect calls.
- L31 2.1.8 Accounts are prepared monthly by the land station Administration and rendered by it to:
- L32 a) the accounting authority responsible for the mobile station (see L10 to L15);
- L33 b) the origin Administration (see L24) with the exception referred to in L37.

2.2 *International accounts*

- L34 2.2.1 The international landline charges for radiotelegrams, radiotelephone calls and radiotelex calls shall be included in the international telegram, telephone and telex accounts respectively and shall be accounted for in accordance with the provisions of the *Telegraph Regulations* and *Telephone Regulations* [4], taking into account CCITT Recommendations. The agreed international accounting rates shall apply.
- L35 2.2.2 The country on whose territory is established a land station serving as intermediary for the exchange of radiocommunications between a mobile station and another country, is considered, as far as the application of landline charges is concerned, as the origin or destination country and not as a transit country.
- L36 2.2.3 Except as provided for in L38, land station charges shall, in principle, not be entered in the international telegram, telephone and telex accounts.
- L37 2.2.4 However, by previous agreements, Administrations may establish a system by which the land station charges are included in the international accounts by the origin Administration.
- L38 2.2.5 In the case of automatic or semi-automatic radiocommunications addressed to mobile stations and originating in a country other than that of the land station, the land station charges shall be included in the international telegram, telephone or telex accounts by the origin Administration on the basis of chargeable duration automatically recorded for automatic traffic, or by the operator of the international centre for semi-automatic traffic.
- L39 2.2.6 The accounting for the charges relating to radiocommunications addressed to mobile stations, originating in the land station country and exchanged through a Maritime Mobile-Satellite System, shall be based on similar recordings as prescribed in L38.
- L40 2.2.7 Accounts for charges relating to the maritime mobile-satellite services shall show the country of origin, destination ocean area and chargeable duration/words and if possible the number of calls/messages. Such accounts shall include the total chargeable duration for any broadcast calls separately listed, sent over the international public switched network to a coast earth station in the Maritime Mobile-Satellite Service.
- L41 2.2.8 A specimen statement is given in Annexes D and E to this Recommendation.

2.3 *Accounting for single-operator service*

- L42 2.3.1 Except as otherwise provided, the following provisions apply to single-operator radiotelephone and radiotelex services, in which land subscribers and land station operators of different countries call each other without the aid of an intermediate operator.
- L43 2.3.2 The operating and charging procedures are described in Recommendation F.110.
- L44 2.3.3 The billing and settlement procedures for single-operator radiomaritime calls to mobile stations are as follows:
- L45 2.3.4 Except as provided for in L47, the call details are forwarded at least monthly to the Administration in question in the caller's country.
- L46 2.3.5 The Administration charges the call in its internal billing system and includes the total amount in a quarterly statement of accounts to the credit of the land station Administration.
- L47 2.3.6 In the case of collect radiotelephone calls to a mobile station in the international Maritime Mobile Service (if admitted by the land station Administration), the total amount of the bill shall be debited to the mobile station licensee in the maritime accounts (see L10 to L15), to the extent that such charges are to be paid by the mobile station.
- L48 2.3.7 If bilaterally agreed between the Administrations concerned, the land station Administration may collect the charge by presenting a bill directly either to the foreign subscriber who booked the call or to his registered representative in the land station country.

3 **Exchange and verification of maritime accounts**

- L49 3.1 Exchange and verification of accounts shall be carried out in accordance with the *Telegraph Regulations* and the *Telephone Regulations* [4], taking into account CCITT Recommendations.
- The account may be rendered to either the accounting authority responsible for handling maritime accounts as designated by the licensing Administration or, with the prior approval of the licensing Administration, directly to another entity in the case of special arrangements agreed between the Administration and the mobile station licensee.
- L50 3.2 The accounts, in duplicate, shall be sent as promptly as possible but in any case before the end of the third month following that to which they relate.
- They should be sent by the most expeditious means and the covering invoice shall be identified by a unique number and show the date of dispatch.
- L51 3.3 Radiotelegrams, radiotelephone calls and radiotelex calls shall be entered individually with all necessary particulars, in the monthly accounts that serve as a basis for the accounting mentioned in this division.
- L52 3.4 Administrations shall always establish a separate statement for each mobile station (which shall include the name and the call sign) in such a way that the accounting authority can use the duplicate for accounting with the mobile station licensee.
- L53 3.5 Exceptionally, where the volume of traffic for each mobile station is low, each sheet of the statement may contain data on more than one mobile station spaced in such a way that the statement can be divided and used for accounting with the mobile station licensee.
- In either case, this statement should give the total charge for each mobile station and be covered by a single invoice.
- L54 3.6 A specimen statement is given in Annexes B and C.
- L55 3.7 In principle, an account shall be considered as accepted without the need for specific notification of acceptance to the Administration that sent it.
- L56 3.8 As a matter of priority on receipt of the maritime account, the accounting authority should notify the Administration of preliminary rejections; i.e., the mobile stations contained within the maritime account that are not or are no longer their responsibility.
- L57 3.9 However, any accounting authority shall have the right to question the contents of an account for a period of six months after dispatch of the account, even if the account has been paid. Adjustments which are later agreed shall be included in a subsequent account.

- L58 3.10 All maritime accounts shall be paid by the accounting authority without delay and in any case within six months after dispatch of the account except where the settlement of accounts is undertaken in accordance with the *Telegraph Regulations* and the *Telephone Regulations* [4]. The unique invoice numbers and the traffic period(s) covered by the payment should be quoted at the time of payment.¹⁾
- L59 3.11 If international maritime accounts remain unpaid after six months, the Administration that has licensed the mobile station shall on request take all possible steps, within the limits of applicable national law, to ensure settlement of the accounts from the licensee.¹⁾
- L60 3.12 If the period between the date of dispatch and receipt exceeds 21 days, then the receiving accounting authority should at once notify the originating Administration that queries and payment may be delayed. However, the delay shall not exceed three months in respect of payment or five calendar months in respect of queries, even if the account has been paid, both periods commencing from the date of receipt of the account.
- L61 3.13 The debtor accounting authority may refuse the settlement and adjustment of accounts presented more than 18 months after the date of handing-in of the radiotelegrams or the date of establishment of the radiotelephone calls or radiotelex calls to which the accounts relate.

4 Payment of balances

- L62 4.1 Payment of balances shall be carried out in accordance with the *Telegraph Regulations* and the *Telephone Regulations* [4], taking into account CCITT Recommendations.

5 Archives

- L63 5.1 The originals of radiotelegrams and documents relating to radiotelegrams, radiotelephone calls and radiotelex calls shall be held by the Administrations with all necessary precautions from the point of view of secrecy, until the settlement of the relative account and, in any case, for at least six months counting from the month in which the accounts were sent. Administrations may preserve the information by any other means, e.g. magnetic or electronic records.
- L64 5.2 However, should an Administration deem it desirable to destroy the originals of radiotelegrams or any other documents or records mentioned in L63 before the above-mentioned period, and hence not be in a position to carry out an inquiry in respect of the services for which it is responsible, such Administration shall bear all the consequences both as regards refund of charges and any difference in the accounts in question that might otherwise have been observed.

6 Special accounting procedures for radiotelexograms

- L65 6.1 Normal international accounting procedures should apply except as specified below:
- L66 6.2 In the case of radiotelexograms originating in mobile stations, the land station Administration shall debit the accounting authority for the origin mobile station with:
- L67 a) the land station charges;
- L68 b) the international telex charges;
- L69 c) any charges for special services.
- L70 6.3 In the case of radiotelexograms addressed to mobile stations and originating in a country other than that of the land station, the land station's Administration shall debit the Administration of the country from which the radiotelegram originated with:
- L71 a) the land station charges; and
- L72 b) any charges for special services.

¹⁾ This provision has been modified by the CCITT Secretariat in accordance with the decision taken by the World Administrative Telegraph and Telephone Conference – Melbourne, 1988.

DIVISION M

REFUNDS

1 Radiotelegrams

1.1 *General*

- M1 1.1.1 The provisions of Recommendation D.43 shall apply with the following exceptions.
- M2 1.1.2 Where a radiotelegram remains undelivered after the required period of retention (Recommendation E.200/F.110, §§ B43, B44) the coast station Administration may determine the basis of the refund of charge either under the provisions of Recommendation D.43 or refund the coast station charges in full. In the second case the coast station Administration may charge a compensatory flat rate handling charge per undelivered message.

1.2 *Radiomaritime letters*

- M3 1.2.1 When a radiomaritime letter fails to reach its destination due to the failure of the postal service, only the charges in respect to the services not carried out are refunded.
- M4 1.2.2 Refund of charges is admitted when, through the fault of the telegraph or radiotelegraph service, a radiomaritime letter has not reached its destination, as well as in the cases provided for in Article 12 of the *Telegraph Regulations* [4] taking into account CCITT Recommendations.

2 Radiotelephone and radiotelex calls

- M5 2.1 When, through any fault of the service, the booking of a call is not followed by the calling and called stations being placed in communication, no charge shall be payable. If the amount of the charge has been paid, it shall be refunded.
- M6 2.2 In order to simplify operating and accounting procedures, Administrations may decide that no charge shall be payable when a requested connection has not been set up, whatever the reason.
- M7 2.3 However, Administrations may decide to collect charges in cases where there is no fault of service. In that case the basis of charging shall be notified to the ITU General Secretariat for inclusion in the *List of Coast Stations* [5].
- M8 2.4 When, through any fault of the service, difficulty is experienced in the course of a call, the chargeable duration of the call shall be reduced to the total time during which transmission conditions have been satisfactory, taking into account CCITT Recommendations.

3 Radiotelexograms

- M9 3.1 Refunds for radiotelegrams and radio telex calls shall apply.

ANNEX A

(to Recommendation D.90)

Identification of accounting authorities

A.1 Code format

A.1.1 Each accounting authority will be allocated a discrete Accounting Authority Identification Code (AAIC) consisting of two parts as follows:

- a) the first part will be two letters denoting the country in which the accounting authority is based, and must be in line with those given in the official service document published in accordance with Recommendation F.96 (*List of Indicators for the Telegram Retransmission System*); in case of doubt, information may be obtained from the ITU General Secretariat;
- b) the second part will be numeric, denoting the particular accounting authority.

A.2 Allocation

A.2.1 The AAIC will be allocated by the Administration of the country in which the accounting authority is based, regardless of whether or not the accounting authority concerned is responsible for mobile stations licensed by that Administration.

In the case where the Administration recognizes that an accounting authority located outside its country is responsible for accounting of mobile stations licensed by that Administration, it shall notify the Administration of the country in which the accounting authority is based of the fact and request confirmation of the AAIC for that accounting authority.

A.2.2 This means that the limitation of accounting authorities to 25 refers only to the number of accounting authorities responsible for accounting for mobile stations licensed by that Administration and not necessarily to the number of accounting authorities based within the Administration's country.

A.2.3 It may be possible therefore that the number of AAICs will exceed 25 for any one country but that there are still only 25 accounting authorities (not necessarily all based within that country) that are responsible for accounting for mobile stations licensed by that Administration.

Exceptionally, an Administration may accept that an individual ship station to be licensed by it, retain its existing accounting authority even if this is not one of those on the licensing Administration's list *a)* – providing that the accounting authority is one of those recognized by the Administration of the country in which it is based as qualifying for lists *a)* and *b)* defined in paragraph A.4.3 below.

In this case, a prior agreement should be reached between the Administration concerned and accounting authority which continue to be responsible for the ship.

A.3 Notification

A.3.1 Having been allocated a code by the Administration of the country in which the accounting authority is based, the accounting authority will notify the Administration of each country that has recognized it as an accounting authority for mobile stations licensed by that Administration, of its AAIC. The Administration concerned should notify the ITU of the AAIC, whenever any notification is required by the ITU concerning the accounting authority; for example, when an Administration notifies the ITU of an accounting authority's address for inclusion in the *List of Ship Stations* [6], it should include the AAIC.

A.3.2 Each accounting authority is responsible for ensuring that all mobile stations for which it accounts are notified of its AAIC and that these mobile stations are aware of their responsibilities in using the AAIC when transmitting radio traffic.

A.3.3 When an accounting authority accepts responsibility for a mobile station, which may previously have been the responsibility of some other accounting authority, it must ensure that the mobile station is advised immediately of the new AAIC.

A.4 Publication

A.4.1 The Administration of the country in which the accounting authority is based is responsible for notifying the ITU of the AAIC allocated.

A.4.2 An Administration that accepts an accounting authority outside its own country, for its flag ships, is responsible for notifying the ITU of this fact and of the AAIC allocated to that accounting authority.

A.4.3 The information should be published in the ITU *List of Ship Stations* [6] as follows:

- a) under the Administration's entry, the address of the accounting authorities authorized to account for mobile stations licensed by the Administration should be listed along with their AAIC;
- b) each Administration will have another list showing all the accounting authorities based within that Administration with their AAICs.

List a) should not exceed 25. List b) may exceed 25.

There should also be an alphabetical list of *all* accounting authorities giving their AAIC.

A.4.4 From these three lists it will be possible to extract the name and address of an accounting authority when only the AAIC is known, to find the AAIC when only the name and address are known and to determine which accounting authorities are authorized to account for mobile stations of a particular registry.

A.4.5 In the body of the ITU *List of Ship Stations* [6] the AAIC of the accounting authority concerned should be shown in column 11 against each mobile station's entry.

A.5 Examples

A.5.1 Allocation of accounting authority identification code (AAIC)

Country that licensed the mobile station	Country where the accounting authority is located and where the AAIC is allocated (see § A.2.1)	Accounting authority is one of the maximum of 25 (according to L7) designated by:	AAIC
Netherlands	Netherlands	Netherlands	NL...
Netherlands	United Kingdom	Netherlands	GB...
United Kingdom	Netherlands	United Kingdom	NL...
Belgium	Netherlands	Belgium	NL...
Belgium	Belgium	Belgium	BE...
etc.			

A.5.2 *List a)* (according to § A.4.3)

Administration that issued the licence	AAIC	Name and address	Country
Afghanistan	AF01	—	Afghanistan
"	GB41	—	United Kingdom
"	NL02	—	Netherlands
Italy	IU01	—	Italy
"	IU02	—	Italy
"	BE11	—	Belgium
"	GB41	—	United Kingdom
"	NL02	—	Netherlands
"	NO03	—	Norway
Zambia	ZA01	—	Zambia
"	BE11	—	Belgium
"	IU02	—	Italy
"	NL07	—	Netherlands
	etc.		

In this list, the number of accounting authority identification codes per country is limited to a maximum of 25.

A.5.3 *List b)* (according to § A.4.3)

Country where the accounting authority is based	AAIC	Name and address
Afghanistan	AF01	—
"	AF02	—
"	AF03	—
Albania	AB01	—
"	AB02	—
Zambia	ZA01	—
"	ZA02	—

In this list, the AAIC starts always with the destination indicator (according to Recommendation F.96). This list is not limited per country.

ANNEX B
(to Recommendation D.90)

Specimen Form of Statement of Maritime Accounts

Account between Administration A and Administration B in respect of:

- telephone calls,
- telegrams,
- telex calls.

sent through the land station of Administration B.

Preferably on paper size 210 × 297 mm

Currency: SDR or G. Fr.

Description of categories (to be decided)

Separate statement for each mobile station ¹⁾

Administration/RPOA: (country A)

Accounting Authority: Unique No. 0186

Page: _____

STATEMENT OF MARITIME ACCOUNTS for Ship Station: ALFA

CALL SIGN: 5Bxxx

Date	Land station	Destination	Number of		Category	Amount due to A	Remarks
			Words	Minutes			
01.01.86	FFL	Limassol	30		1	30.00	
03.01.86	FFM	Rotterdam		5	3	5.00	
08.01.86	FFS	London		3.5	5	10.00	
10.01.86	FFS	Paris	15		1	15.00	
20.01.86	FFU	Sydney		40	4	40.00	
Total due						100.00	

¹⁾ Exceptionally, this form of statement may contain data on more than one mobile station, where the volume of traffic for each mobile station is low.

ANNEX C

(to Recommendation D.90)

Specimen Form of Statement of Maritime Accounts

Preferably on paper size: 210 × 297 mm

Currency: SDR or G. Fr.

Administration/RPOA: (country A)

Accounting Authority: (country B) Unique No. 0186

STATEMENT OF MARITIME ACCOUNTS – SUMMARY

Page: _____

Period (MMYY)

Date of Print: _____

Ship Station	Call sign	Currency due to A
ALFA	5Bxxx	100.00
BRAVO	Zxxxx	300.00
CHARLIE	Axxxx	500.00
DELTA	3Exxx	1000.00
ECHO	Dxxxx	30.00
Total due		1930.00

ANNEX D

(to Recommendation D.90)

Specimen Form of Statement of Maritime Mobile-Satellite Accounts

Account between Administration A and Administration B in respect of:

- telephone calls,
- telegrams,
- telex calls.

sent through the coast earth station of Administration B.

Preferably on paper size 210 × 297 mm.

Currency: SDR or G. Fr.

Description of classes of service (to be decided)

Separate statement for each mobile station ¹⁾

Administration/RPOA: (country A)

Accounting Authority: (country B) Unique No. 0386

Page: _____

STATEMENT OF MARITIME MOBILE-SATELLITE – ACCOUNT for Ship Station:
ZULU

SES Id. – No.: 411 1234

CALL SIGN: _____

Date	Destination	Class of service	Number of minutes or seconds	Currency due to A
01.03.86	D 4012345	1	1.5	30.00
01.03.86	GB 1 12345678	2	3.0	40.00
20.03.86	F 1312345	1	0.7	10.00
25.03.86	I 5 1234567	2	2.5	30.00
26.03.86	S 230 123456	2	5.7	50.00
30.03.86	CYP 46 123456	2	4.3	40.00
Total due				200.00

SES: Ship earth station.

¹⁾ Exceptionally, this form of statement may contain data on more than one mobile station, where the volume of traffic for each mobile station is low.

ANNEX E

(to Recommendation D.90)

Specimen Form of Statement of Maritime Mobile-Satellite Accounts

Preferably on paper size: 210 × 297 mm

Currency: SDR or G. Fr.

Administration/RPOA: (country A)

Accounting Authority: (country B) Unique No. 0386

STATEMENT OF MARITIME MOBILE-SATELLITE ACCOUNTS – SUMMARY Page: _____

Period (MMYY)

Date of Print: _____

Ship station	Call sign	SES Id. – No.	Currency due to A
ALFA		511 1234	100.00
HOTEL		311 1234	200.00
MIKE		111 1234	500.00
ROMEO		211 1234	200.00
ZULU		411 1234	200.00
Total due			1200.00

SES: Ship earth station.

References

- [1] *Final Acts of the World Administrative Maritime Radio Conference*, ITU, Geneva, 1974.
- [2] *Final Acts of the World Administrative Radio Conference (WARC)*, ITU, Geneva, 1979.
- [3] *Radio Regulations*, ITU, Geneva, 1982.
- [4] *Final Acts of the World Administrative Telegraph and Telephone Conference, Telegraph Regulations, Telephone Regulations*, ITU, Geneva, 1973. (See also the Preliminary Note No. 3, page XIV.)
- [5] *List of Coast Stations*, (published every 2 years), ITU, Geneva.
- [6] *List of Ship Stations*, 27th edition, ITU, Geneva, 1987.
- [7] *List of Radiodetermination and Special Service Stations*, ITU, Geneva.
- [8] *Final Acts of the WARC for the Mobile Services (MOB-83)*, ITU, Geneva, 1983.

Recommendation D.91

TRANSMISSION IN ENCODED FORM OF MARITIME TELECOMMUNICATIONS ACCOUNTING INFORMATION

(Melbourne, 1988)

1 Introduction

1.1 Under the provision of Recommendation D.90, Administrations engage in international accounting for radiocommunications handled each month.

1.2 A growing number of Administrations are processing this monthly international accounting data using computer based accounting systems. Information is drawn from traffic history tapes or manually encoded from data such as inward international accounts and statistical summaries prepared by manual abstraction from copies of traffic tickets.

1.3 It is usual at present to complete computer processing by producing conventional printed accounts following the specifications described in the various accounting Recommendations (D.90). Where the receiving Administration also uses computer facilities, however, this information has to be re-encoded for processing through its system.

1.4 Transmission of data in encoded form avoids the decoding/re-encoding step. It also offers a faster transfer of information than by printed forms through the mail. The latter remains true even if the forwarding Administration has prepared the data by manual/mechanical means.

2 Aim

2.1 The aim of this Recommendation is:

2.1.1 to enable Administrations using computer based accounting systems to transfer information to each other in encoded form, without the need for decoding into conventional printed form and subsequent encoding into machine-readable form;

2.1.2 to enable other Administrations, if they so desire, to benefit from the greater efficiency of speedier transfer of information to them and to prepare themselves for the introduction of computer working by introducing transmission of data in encoded form in advance of installation of a computer;

2.1.3 to facilitate provision of printed output from computer based systems in a format suitable for manual/mechanical processing where it is to be forwarded to Administrations not using computer facilities;

2.1.4 to facilitate provision of printed output from manual/mechanical accounting systems in a format suitable for data encoding where it is to be forwarded to Administrations employing computer processing.

3 Method

3.1 Data record

3.1.1 The aim of this Recommendation can be met by use of a standard data record format for the various elements of information to be transferred. The information elements and their sequence must be compatible with the provisions of the various accounting Recommendations so that decoding to and encoding from printed output for exchange of information with Administrations using manual/mechanical systems will be as simple as possible.

3.1.2 Between Administrations operating computer based accounting systems, adherence to the standard data record format for data transmission purposes will ensure that only one interface programme will be needed to enable any one computer installation to generate suitable input for, and accept output from, other computer installations.

3.2 *Data transfer*

3.2.1 Procedures already exist for transfer of data in conventional (printed) form through the mails. Data in encoded form could be transferred by mailing of magnetic or paper tapes, paper tape transmission by telex or data transmission over circuits utilized for this purpose.

3.2.2 While mailing of tapes avoids the encoding task for the receiving Administration there can be delays and loss in transit. In addition, there can be difficulties caused by the fragility of paper tape and incompatibility of various forms of magnetic tape recording.

3.2.3 Transfer of data via the telex service using paper tape transmission and reception can be advantageous for Administrations whether they have computer based accounting systems or manual/mechanical systems. As both page copy and punched paper tape can be generated at the receiving point, users of either type of accounting system can benefit. Page copy can be used for checking paper tape, with the latter becoming input to a computer. Page copy can also be used as the incoming international account avoiding the need for use of the postal service.

3.2.4 Where large volumes of data are to be exchanged, transmission over higher speed circuits offers significant benefits. Where suitable data links are in use for service transmissions, these could be utilized. Data terminals and modems capable of transmission speed in the range 600 to 2400 bits per second should be sufficient, but higher speeds could be used. For manual/mechanical systems, data received on data terminals can be reproduced as page copy representing an incoming international account. For computer based accounting systems, data transmission offers the possibility of complete automation of the process by computer-to-computer transfer.

4 **Specific recommendations**

4.1 It is recommended that:

4.1.1 where possible data transferred in printed form should be replaced by data transferred in encoded form;

4.1.2 for data transferred in encoded form, the standard data record format detailed in Annex A should be followed;

4.1.3 transmission of data in encoded form should be by the following means:

- a) physical transfer of magnetic tapes (the standard file structure is given in Annex A);
- b) use of data transmission over telephone circuits, dedicated circuits, telegraph circuits or special data links;

4.1.4 transmission methods (international packet switching service, electronic mailbox, etc.), operating practices and technical standards should be agreed between the Administrations concerned and should conform to the appropriate CCITT Recommendations.

ANNEX A

(to Recommendation D.91)

Monthly international accounting information

Fixed record formats

A.1 *File description*

A.1.1 The file has EBCDIC-format (Extended Binary Coded Decimal Interchange Code). The length of the formatted records is 130 characters, blocked by 10.

A.1.2 The tape, which will contain a header and a trailer record, may consist of several batches. For each accounting authority or country there may be a batch (or, if more than one currency is involved, one batch for each currency) for each of the following services:

- Satellite from-ship traffic,
- Terrestrial Radio from-ship traffic,
- Terrestrial Radio to-ship telephone and telegram traffic,
- Terrestrial Radio to-ship telex traffic,
- Credit card/reversed charge from-ship traffic for both services.

Each of the traffic batches will contain an accounting authority header record followed by the traffic items and ended by the summary record.

A.1.3 Record description

A.1.3.1 Main header record

Position	Length	Format	Name of field	Contents
1	2	Numeric	CODART	Determination of record code to 00
3	8	Alphanumeric	CDAAIC	AATC of the tape originator
11 to 130		Alphanumeric	--	Unused field (blanks)

A.1.3.2 Record accounting authority

Position	Length	Format	Name of field	Contents
1	2	Numeric	CODART	Determination of record code to 01
3	8	Alphanumeric	CDAAIC	AAIC of accounting authority if direction 2, of origin Administration if direction 1
11	1	Numeric	CDDIRE	Direction of traffic 1 = shore-to-ship 2 = ship-to-shore
12	50	Alphanumeric	NAT ADM	Name of Administration if direction 1 Name of nation if direction 2
62	2	Numeric	CDCURR	Currency code 1 = Gfr 2 = SDR 3 = GBP 4 = USD 5 = DM
64	8	Numeric (6 decimal digits)	RATCON	Rate of conversion
72	4	Numeric	YEAMON	Month in which the bulk of the traffic was transmitted YYMM
76 to 130		Alphanumeric	--	Unused field (blanks)

A.1.3.3 Record communication (traffic)

Position	Length	Format	Name of field	Contents
1	2	Numeric	CODART	Determination of record code to 02
3	5	Alphanumeric	CDAAIC	AAIC of accounting authority if direction 2, of origin Administration if direction 1
8	3	Alphanumeric	CDCS/CES	Code of coast station/CES
11	1	Numeric	CDDORE	Direction of traffic 1 = shore-to-ship 2 = ship-to-shore
12	6	Numeric	DATCOM	Date of traffic format YYMMDD
18	4	Numeric	TMETFC	Time of traffic
22	8	Alphanumeric	CALSIG	Call sign of vessel/ID Code
30	32	Alphanumeric	NAMORG	Origin identification
62	32	Alphanumeric	NAMDES	Destination identification
94	2	Numeric	CDKIND	Code kind of traffic (see Appendix I)
96	2	Alphanumeric	CDFACI	Facility code/Surcharge
98	6	Numeric	NUMWRD	Number of words or duration of call format HHMMSS
104	4	Alphanumeric	TXABRV	Abbreviation of surcharges if necessary otherwise blanks (see Appendix II)
108	8	Numeric (3 decimal digits)	TXAMOU	Amount of surcharge necessary, otherwise 0
116	10	Numeric (3 decimal digits)	TAXTOT	Total amount of charge (negative amounts possible)
117 to 130		Alphanumeric	--	Unused field (blanks)

A.1.3.4 Summary record

Position	Length	Format	Name of field	Contents
1	2	Numeric	CODART	Determination of record code to 03
3	8	Alphanumeric	CDAAIC	AAIC of accounting authority
11	16	Numeric (3 decimal digits)	AMTTOT	Total amount (negative amounts possible)
27 to 130		Alphanumeric	--	Unused field (blanks)

A.1.3.5 Trailer record

Position	Length	Format	Name of field	Contents
1	2	Numeric	CODART	Determination of record code to 03
3	2	Numeric	NOBATC	Number of batches
5	16	Numeric (3 decimal digits)	AMTTOT	Total amount of all charges
21 to 130		Alphanumeric	--	Unused field (blanks)

A.2 Characteristics and structure of the tape

A.2.1 Physical structure of recording

For recording, the ISO-Norm 1863 is to be used.

Method of recording: EBCDIC

Record density: 1600 BPI

Number of tracks: 9

Width of tape: 1/2 inch

Interblock gap: 0.6 inch

Block prefix: 3 inch

A.2.2 Structure of tape

Mono-tape, mono-file.

A.2.3 Tape- and file-label

Character code for label and EBCDIC code.

Volume header label: Vol. 1 (see Appendix III)

First file header label and end of file label: HDR1 and EOF 1 (see Appendix IV)

Second file header label and end of file label: HDR2 and EOF 2 (see Appendix V)

APPENDIX I

(to Annex A to Recommendation D.91)

Table of codes (CDKIND/CDFACI)

Code	Description
02	Telephone satellite automatic
03	Telephone satellite manual
04	Telephone VHF automatic
05	Telephone VHF manual
06	Telephone medium-wave automatic
07	Telephone medium-wave manual
08	Telephone short-wave automatic
09	Telephone short-wave manual
12	Telex satellite automatic
13	Telex satellite manual
14	Telex VHF automatic
15	Telex VHF manual
16	Telex medium-wave automatic
17	Telex medium-wave manual
18	Telex short-wave automatic
19	Telex short-wave manual
22	Telegram satellite
23	Telegram VHF
24	Telegram medium-wave
25	Telegram short-wave
26	Telephone aeronautical
27	Telephone aeronautical
28	Data transmission Aeronautical
29	Data transmission Aeronautical
30	
31	
32	
33	
34	
35	
36	
37	Unused
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	Telex letter
52	Multi-address (telex)
53	Voice bank (telex)
54	Data base access (telephone or telex)

APPENDIX II

(to Annex A to Recommendation D.91)

Table of surcharges (TXABRV)

Code	Description
PER	Personal call
ADC	Advice and duration call

APPENDIX III

(to Annex A to Recommendation D.91)

Volume header label

Position	Assignment of field	Contents
1 to 4	Label identifier and number	VOL 1
5 to 10	Volume No.	6 characters alphanumeric
11	Access	1 character (blank)
12 to 31 + 32 to 37	Reserved	A (blank)
38 to 50	Identification of owner	13 characters alphanumeric
51	Record density	A (blank)
52 to 79	Reserved	A (blank)
80	Version of standard label	3.
81 to 130		Unused field (blanks)

APPENDIX IV

(to Annex A to Recommendation D.91)

First file header label and end of file label

Position	Assignment of field	Contents
1 to 4	Label identification and number	HDR1 EOF1
5 to 21	File identification	HDR1 EOF1
22 to 27	Total file identification	All characters alphanumeric
28 to 31	Number of file section	Spaces Space
32 to 35	Number of file sequence	"0001" "0001"
36 to 39	Number of generation	"0001" "0001"
40 to 41	Version number on generation	"00" "00"
42 to 47	Creation date	1 space followed by date
48 to 53	Expiry date	Spaces Spaces
54	Access	Spaces Spaces
55 to 60	Block counting	Zero Block count
61 to 73	System code	All characters alphanumeric
74 to 130	Reserved field	Spaces Spaces

APPENDIX V

(to Annex A to Recommendation D.91)

Second file header label and end of file label

Position	Assignment of field	Contents
1 to 4	Label identifier and number	HDR2 EOF2
5	Record format	HDR2 EOF2
6 to 10	Length of block	"F" "F"
11 to 15	Length to record	"00130" "00130"
16 to 50	Reserve system	"00130" "00130"
51 to 52	Length of offset cell buffer "00"	All characters alphanumeric
53 to 130	Reserved field	"00" "00"
		Spaces Spaces

**CHARGING AND ACCOUNTING IN THE INTERNATIONAL
LAND MOBILE TELEPHONE SERVICE
(PROVIDED VIA CELLULAR RADIO SYSTEMS)**

(Melbourne, 1988)

1 General considerations

1.1 In the land mobile telephony service, the Home Public Land Mobile Network (HPLMN) will know the location of all operational mobile stations for which it is the home registered network, when the station is operating within its HPLMN or has roamed in accordance with the principles contained in CCITT Recommendations of the Q.1000 series.

1.2 The Visited Public Land Mobile Network (VPLMN) will be able to access and record the necessary details of any mobile station which has roamed and registered with it, such that it can forward all necessary billing information to the HPLMN.

1.3 Mobile stations will only be able to roam to another Public Land Mobile Network (PLMN):

- upon the conclusion of a bilateral agreement between PLMNs,
- upon the granting by the HPLMN of the option to roam to the mobile station.

1.4 As part of the bilateral agreement, the HPLMN should undertake to pay the VPLMN the charges incurred by the HPLMN registered mobile subscribers.

1.5 Examples of the application of the charging and accounting principles, set out below, for various call routing scenarios are given in Annex A.

2 Principles for charging

2.1 The charge structure and level in any country is a national matter.

2.2 HPLMN charging

2.2.1 The HPLMN is responsible for billing the mobile subscriber for all incurred charges.

2.2.2 Charging structures should be as simple as possible.

2.2.3 The charge would normally consist of two components:

- a network access component;
- a network utilization component.

2.2.3.1 The network access component is intended to cover the cost of making the service available, such costs being independent of network utilization:

- initial registration charge (non-recurring),
- subscription or rental (periodic).

The network access component shall not be included in the international accounts.

2.2.3.2 The network utilization component is intended to cover the costs of the service which are dependent on network utilization:

- utilization charges (covering mobile, national/international elements as applicable),
- any supplementary service charges.

2.2.4 The charges billed to the mobile subscriber should be such as to cover the payments due to the VPLMN plus any handling charges which may also be raised.

2.3 *VPLMN charging*

2.3.1 The charges raised by a VPLMN against the HPLMN should normally include one or more of the following:

- roaming registration fee (non-recurring)
- roaming subscription (periodic),
- utilization charges (covering mobile, national/international elements as applicable),
- any supplementary service charges.

2.4 *Fixed station charges*

2.4.1 In the case of a fixed station to mobile station international call, the appropriate fixed station to fixed station telephone charge should apply to the calling station.

2.4.2 In the case of a fixed station to mobile station call, the fixed station should always be charged for the call dialled, irrespective of whether the mobile station has or has not roamed; if a mobile station has roamed, a charge for the forwarded element of the call may be raised by the HPLMN against the mobile station.

2.5 *Mobile station to mobile station charges*

2.5.1 In the case of a mobile station to mobile station international call, the appropriate mobile station to fixed station charge should apply to the calling station.

2.5.2 In the case of a mobile station to mobile station call, where the calling mobile station has not roamed, the calling station should always be charged for the call dialled, irrespective of whether the called mobile has or has not roamed. If a mobile station has roamed a charge for the forwarded element of the call may be raised by the HPLMN of the called mobile station. The case where the calling mobile station has roamed is covered by § 2.3.1 above.

3 **Principles for accounting**

3.1 International traffic originating or terminating at a mobile station will always be routed via the fixed networks of the countries concerned. The Administration of the country where the call originates should therefore include all such traffic in its regular international accounting statements at the normal accounting rates.

3.2 The use of the PLMN in either country should not form part of the international traffic accounts, being covered under the charging aspects.

4 **Principles for settlements between PLMNs**

4.1 The VPLMN should prepare a statement of the charges payable by the HPLMN for its registered mobile subscribers. The format and frequency of dispatch should be agreed between the two parties. This statement should show the total charge expressed in SDRs or another agreed accounting currency, together with the conversion rate.

4.2 To ensure that the HPLMN has sufficient information for billing purposes, individual statements should be prepared for each registered subscriber. These statements should include the following information:

- a) The period covered by the statement
- b) The subscriber identity in the HPLMN
- c) For each call:
 - i) the date and start time,
 - ii) number called and area code,
 - iii) destination country,
 - iv) duration in minutes and seconds,
 - v) any supplementary services used.

4.3 In the absence of alternative settlement procedures agreed between the PLMNs concerned, settlement of balances shall be effected in accordance with the provisions of the Administrative Regulations [1].

ANNEX A

(to Recommendation D.93)

Applications of charging and accounting principles for various call routing scenarios

A.1 Case 1 – Mobile station to a fixed station

In this case the mobile station A* is in its home PLMN (country A), makes an international (non-roaming) call to a fixed station B' in country B (see Figure A-1/D.93).

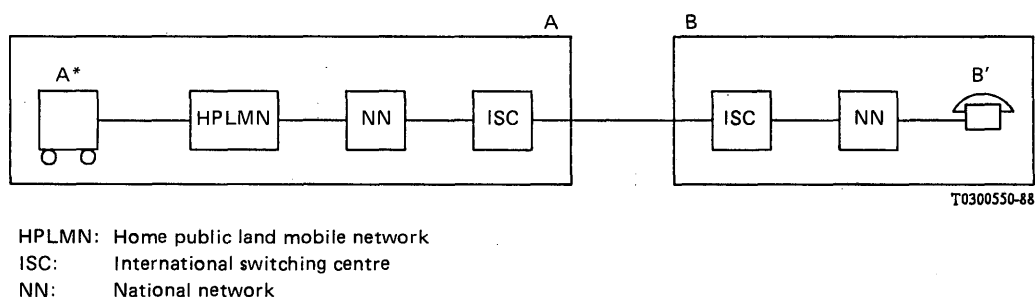


FIGURE A-1/D.93

Charging: A* will be billed by its HPLMN for call to country B.
Inter PLMN settlement: Not applicable.
Traffic accounting: The call from A to B is included in A's outgoing traffic account.

A.2 Case 2 – Roamed mobile station to a fixed station

Mobile station A* has roamed to PLMN in country B and makes a national call to a fixed station (see Figure A-2/D.93).

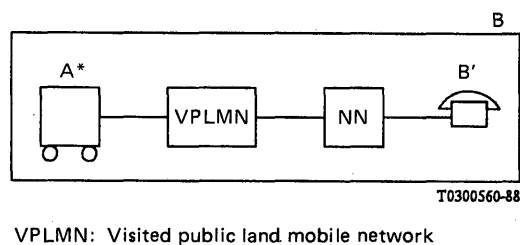


FIGURE A-2/D.93

Charging: A* will be billed by its HPLMN based on data provided by the VPLMN.
Inter PLMN settlement: The HPLMN "A" will reimburse the VPLMN "B" for the charges incurred by the roamer.
Traffic accounting: Not applicable.

A.3 Case 3 – Roamed mobile station to fixed station

Mobile station A* has roamed to a PLMN in country B and makes an international call.

A.3.1 Case 3A – Call to the home country (see Figure A-3/D.93)

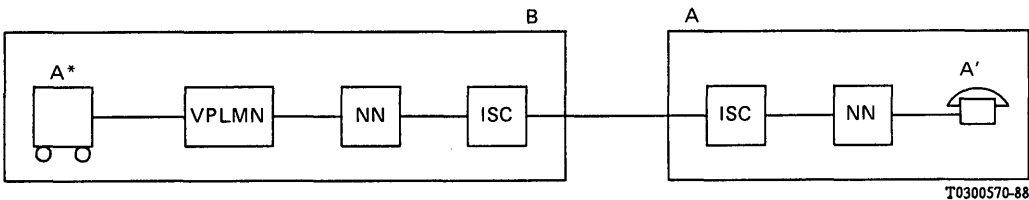


FIGURE A-3/D.93

- Charging: As for Case 2: A* will be billed by its HPLMN based on data provided by the VPLMN.
- Inter PLMN settlement: As for Case 2: the HPLMN “A” will reimburse the VPLMN “B” for the charges incurred by the roamer.
- Traffic accounting: The call from B to A is included in the normal international telephone traffic account of B.

A.3.2 Case 3B – Call to a third country, C (see Figure A-4/D.93)

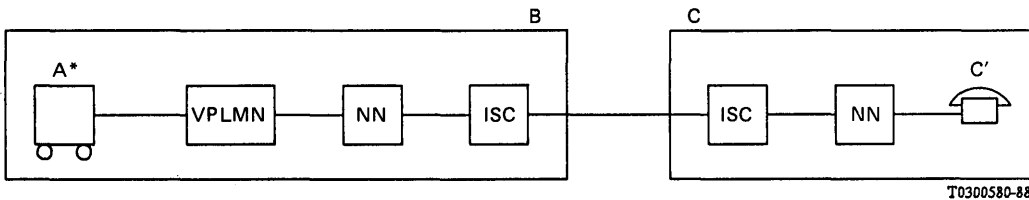


FIGURE A-4/D.93

- Charging: As for Case 2: A* will be billed by its HPLMN based on data provided by the VPLMN.
- Inter PLMN settlement: As for Case 2: the HPLMN “A” will reimburse the VPLMN “B” for the charges incurred by the roamer.
- Traffic accounting: The call from B to C is included in the normal telephone traffic account of B.

A.4 Case 4 — Fixed station to mobile station

Fixed station A' makes an international call to mobile station B* in country B (home PLMN) (see Figure A-5/D.93).

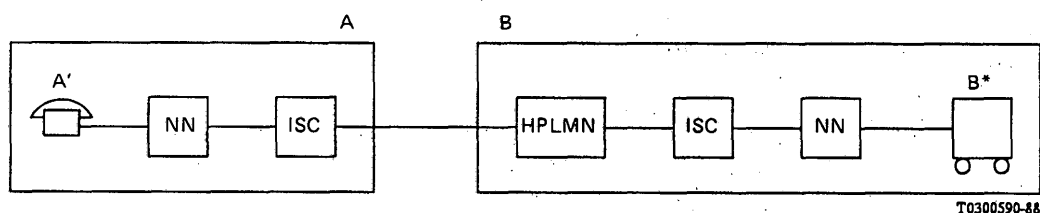


FIGURE A-5/D.93

- Charging: Appropriate fixed station to fixed station international telephone charges apply.
- Inter PLMN settlement: Not applicable.
- Traffic accounting: The call from A to B is included in A's outgoing traffic account.

A.5 Case 5 — Fixed station to roamed mobile station

Fixed station A' calls mobile station A* which has roamed to country B.

A.5.1 Case 5A — A' is provided with a recorded announcement saying A* is not available on this PLMN, call is not forwarded (see Figure A-6/D.93).

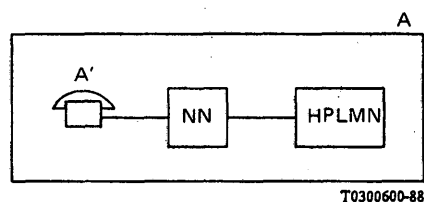


FIGURE A-6/D.93

- Charging: The fixed station may be charged for accessing the recorded announcement.
- Inter PLMN settlement: Not applicable.
- Traffic accounting: Not applicable.

A.5.2 *Case 5B* – The call is automatically forwarded to the mobile network in country B. A' is not made aware (see Figure A-7/D.93).

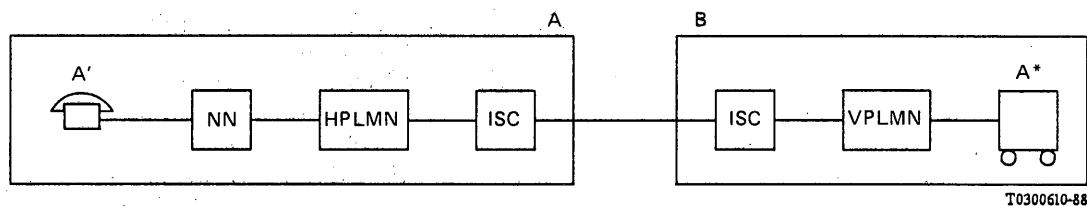


FIGURE A-7/D.93

Charging:

- Fixed station is charged for the national call dialled.
- The HPLMN “A” may raise a charge against A* for the forwarded element of the call.
- A* may be billed by its HPLMN for charges which may be raised by the VPLMN for the roamer’s use of its network to receive the call, based on the data provided by the VPLMN “B”.

Inter PLMN settlement: As for Case 2: the HPLMN “A” will reimburse the VPLMN “B” for the charges incurred by the roamer.

Traffic accounting: The call from A to B is included in A’s outgoing traffic account.

A.5.3 *Case 5C* – Fixed station advised that the mobile station has roamed and given option of completing call at appropriate charge or cancelling (see Figure A-8/D.93).

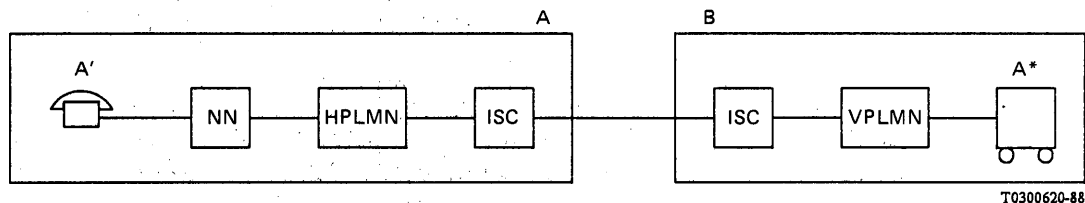


FIGURE A-8/D.93

Comment – Not yet technically possible – for further study.

A.5.4 Case 5D – Fixed station knows the roamer's temporary number in VPLMN (see Figure-A-9/D.93).

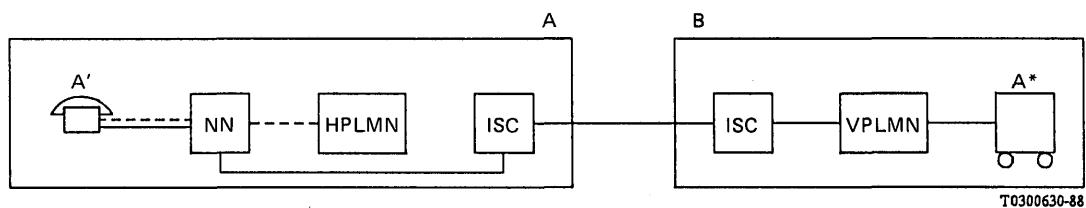


FIGURE A-9/D.93

- Charging:
- As for case 4: appropriate fixed station to fixed station international telephone charges apply.
 - A* may be billed by its HPLMN for charges which may be raised by the VPLMN “B” for the roamer's use of its network to receive the call, based on the data provided by the VPLMN.
- Inter PLMN settlement: As for case 2: the HPLMN “A” will reimburse the VPLMN “B” for the charges incurred by the roamer.
- Traffic accounting: As for case 4: the call from A to B is included in A's outgoing traffic account.

A.6 Case 6 – Fixed station to roamed mobile station

Fixed station B' makes an international call to mobile A* in country A which has roamed to country B. B' is not made aware.

A.6.1 Case 6A – Call is automatically forwarded to country B (see Figure A-10/D.93)

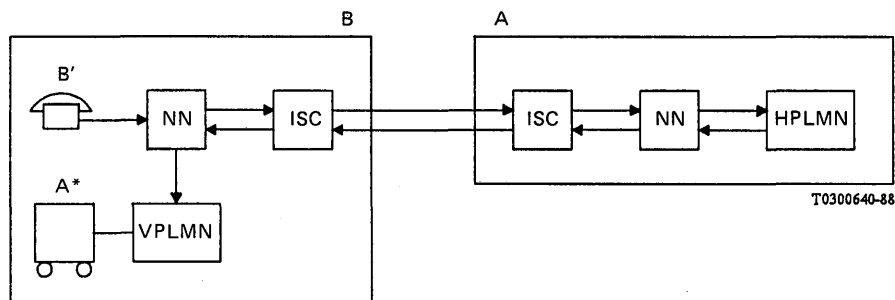


FIGURE A-10/D.93

- Charging:
- As for case 5B: fixed station is charged for the international call dialled.
 - The HPLMN may raise a charge against A* for the forwarded element of the call.
 - A* may be billed by its HPLMN for charges which may be raised by the VPLMN “B” for the roamer's use of its network to receive the call, based on the data provided by the VPLMN.
- Inter PLMN settlement: As for case 2: the HPLMN “A” will reimburse the VPLMN “B” for the charges incurred by the roamer.
- Traffic accounting:
- The call from B to A is included in B's outgoing traffic account.
 - The call from A to B is included in A's outgoing traffic account.

A.6.2 Case 6B – Fixed station B' knows roamed station A*'s temporary number in country B (see Figure A-11/D.93)

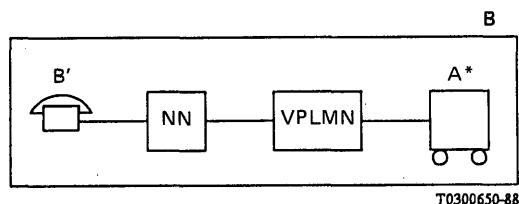


FIGURE A-11/D.93

- Charging:
- As for case 4: appropriate national telephone charges apply.
 - A* may be billed by its HPLMN for charges which may be raised by the VPLMN “B” for the roamer’s use of its network to receive the call, based on the data provided by the VPLMN.
- Inter PLMN settlement: As for case 2: the HPLMN “A” will reimburse the VPLMN “B” for the charges incurred by the roamer.
- Traffic accounting: Not applicable.

A.6.3 Case 6C – Using Signalling System No. 7, the mobile switching centre in country A signals to the national network (NN) in B that A* is now in country B and the call is automatically forwarded via the mobile switching centre in country B (see Figure A-12/D.93).

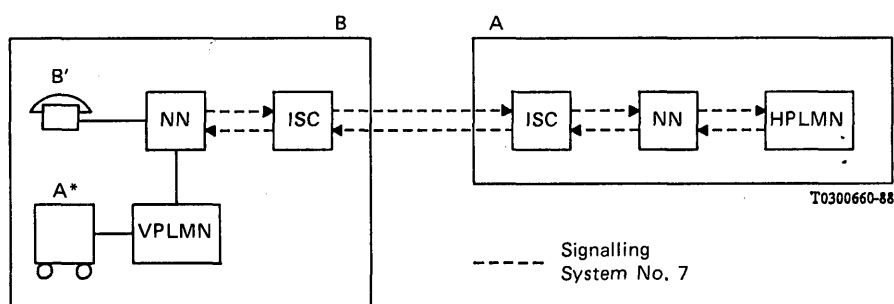


FIGURE A-12/D.93

Comment – Not yet technically possible – for further study.

A.7 Case 7 – Fixed station to roamed mobile station

Fixed station A' calls mobile station B* which has roamed to country C. A' is not aware.

A.7.1 Case 7A – Call is automatically forwarded to country C (see Figure A-13/D.93).

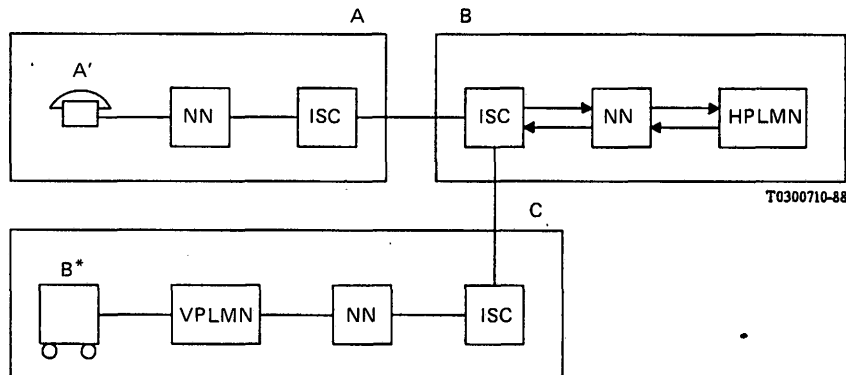


FIGURE A-13/D.93

Charging:

- As for case 6A: fixed station is charged for the international call dialled.
- HPLMN "B" may raise a charge against B* for the forwarded element of the call.
- B* may be billed by its HPLMN for charges which may be raised by the VPLMN for the roamer's use of its network to receive the call, based on the data provided by the VPLMN.

Inter PLMN settlement: as for case 2: The HPLMN "B" will reimburse the VPLMN "C" for the charges incurred by the roamer.

Traffic accounting:

- The call from A to B is included in A's outgoing traffic account.
- The call from B to C is included in B's outgoing traffic account.

A.7.2 Case 7B – Using C7, the MSC/NN in country B signals to NN that B* is now in country C. Call is automatically forwarded to PLMN in country C (see Figure A-14/D.93).

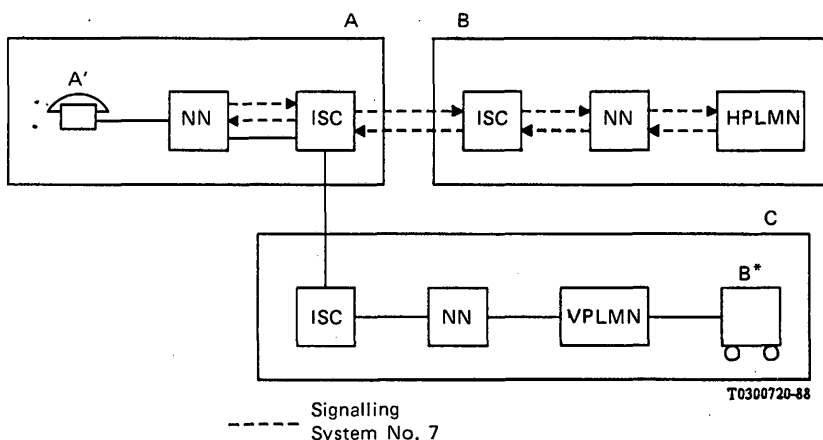


FIGURE A-14/D.93

Comment – Not yet technically possible – for further study.

A.8 Case 8 – Mobile station to mobile station

In this case the mobile station A* is in its HPLMN and makes an international (non-roaming) call to mobile station B* its home PLMN (see Figure A-15/D.93).

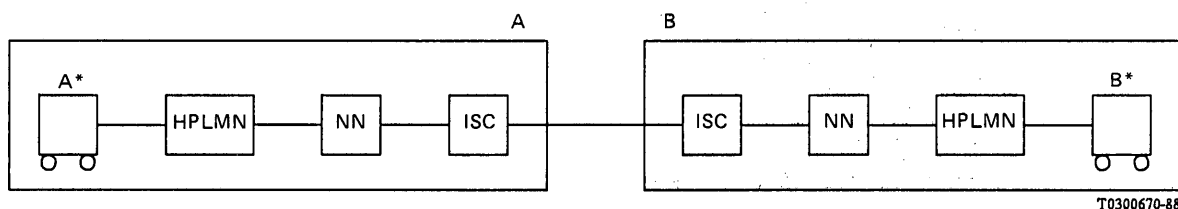


FIGURE A-15/D.93

- Charging: A* will be billed by its HPLMN for call to country B.
- Inter PLMN settlement: Not applicable.
- Traffic accounting: The call from A to B is included in A's outgoing traffic account.

A.9 Case 9 – Mobile station to roamed mobile station

In this case mobile station A* is in its HPLMN and makes a call to mobile station B* which has roamed to country C (see Figure A-16/D.93).

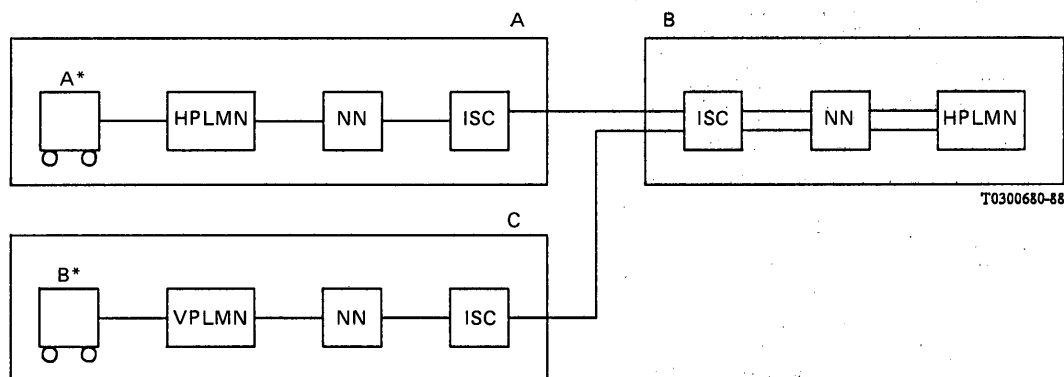


FIGURE A-16/D.93

- Charging:
- Mobile station A* is charged for the international call dialled.
 - B*'s HPLMN may raise a charge for the forwarded element of the call.
 - B* may be billed by its HPLMN for charges which may be raised by the VPLMN "C" for the roamer's use of its network to receive the call, based on the data provided by the VPLMN.
- Inter PLMN settlement: The HPLMN "B" will reimburse the VPLMN "C" for the charges incurred by the roamer.
- Traffic accounting:
- The call from A to B is included in A's outgoing traffic account.
 - The call from B to C is included in B's outgoing traffic account.

A.10 Case 10 – Roamed mobile station to mobile station

In this case roamed mobile station A* has roamed to a PLMN in country B and makes an international call to mobile C* operating in its HPLMN (see Figure A-17/D.93).

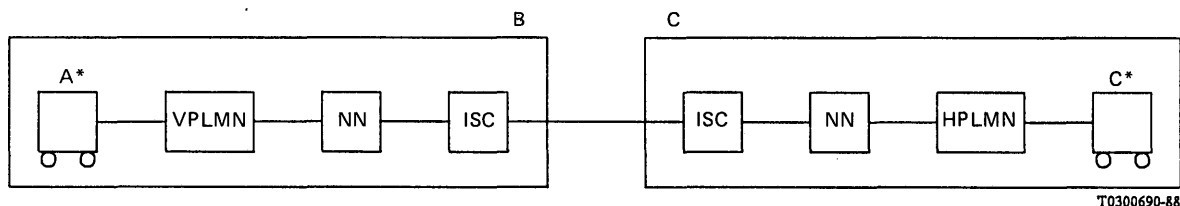


FIGURE A-17/D.93

- Charging: A* will be billed by its HPLMN based on data provided by the VPLMN.
- Inter PLMN settlement: The HPLMN “A” will reimburse the VPLMN “B” for the charges incurred by the roamer.
- Traffic accounting: The call from B to C is included in the normal international telephone traffic account of B.

A.11 Case 11 – Roamed mobile station to roamed mobile station

In this case roamed mobile station A* makes an international call to roamed mobile station C* operating in country D (see Figure A-18/D.93).

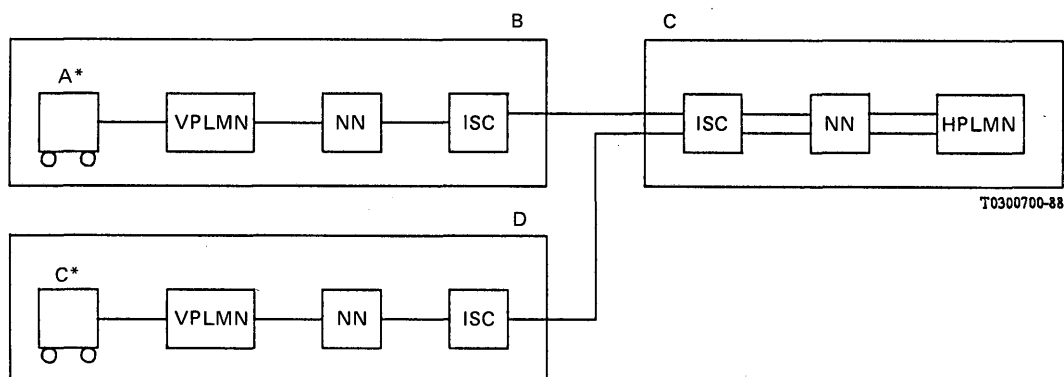


FIGURE A-18/D.93

- Charging: A* will be billed by the HPLMN based on data provided by the VPLMN.
- Inter PLMN settlement:
- For A*, its HPLMN will reimburse the VPLMN “B” for charges incurred by A*’s roaming in country B.
 - For C*, its HPLMN may raise a charge for the forwarded element of the call.
 - C* may be billed by its HPLMN for the charges which may be raised by the VPLMN “D” for the roamer’s use of its network to receive the call, based on the data provided by the VPLMN.
- Traffic accounting:
- The call from B to C is included in B’s outgoing traffic account.
 - The call from C to D is included in C’s outgoing traffic account.

Reference

- [1] *Final Acts of the World Administrative Telegraph and Telephone Conference, Telegraph Regulations, Telephone Regulations*, ITU, Geneva, 1973. (See also the Preliminary Note No. 3, page XIV.)

SECTION 10

TRANSFERRED ACCOUNT SERVICE

Recommendation D.98

CHARGING AND ACCOUNTING PROVISIONS RELATING TO THE TRANSFERRED ACCOUNT TELEGRAPH AND TELEMATIC SERVICES¹⁾

(Melbourne, 1988)

1 Definition

1.1 The **international transferred account telegraph and telematic service** is a service in which the Administrations concerned agree that the charge for telegraph and telematic services be paid by a party that has accepted responsibility for payment, instead of being paid by the sender. This service is called the *TA Service*.

1.2 TA service, as defined in § 1.1 above, provides for the acceptance and routing of telegraph and telematic services, to any country, being not limited to the country of the guarantor Administration.

1.3 The term **Guarantor Administration** as used herein refers to the Administration responsible for the collection of TA charges and for the payment of such charges to the Administration of origin of TA traffic.

2 Charging for the telegraph and telematic services provided on presentation of a TA card

2.1 The use of a TA card does not alter the charging rules for the telegraph and telematic services provided on presentation of the card.

3 Surcharges and special charges

3.1 The origin Administration and the Guarantor Administration may levy a surcharge for each service (see Recommendation F.41, § 2.1) provided on presentation of the TA card.

3.2 The Administration that issues a TA card may also levy a special charge to cover the cost of preparing the card.

3.3 These surcharges shall accrue to the Administration that levies them.

4 Accounting

4.1 Traffic of the TA service shall not be distinguished from other traffic in the international accounts exchanged between Administrations. In particular, the indication TA shall not be mentioned in the monthly traffic accounts.

¹⁾ See also Recommendation F.41.

5 Establishment and exchange of TA accounts

5.1 The origin Administration of the telegram/call shall prepare a monthly transferred account for each person or corporate body responsible for the payment of charges. Such statements shall include the following information:

- 1) name of the origin Administration;
- 2) month of acceptance of the services provided on presentation of the TA card;
- 3) name and address of the Administration responsible for collecting the charges;
- 4) name of person or corporate body that has undertaken to pay the charges, together with the address when known;
- 5) country and, if possible, office of acceptance;
- 6) office of destination and, if necessary, the country;
- 7) identification group of the card and name of card holder;
- 8) date of acceptance of the TA traffic;
- 9) name of addressee, or telex number and answer-back code of recipient;
- 10) class of correspondence;
- 11) information required to draw up the accounts for TA traffic;
- 12) total charges, including surcharges in the currency of the origin country;
- 13) total charges in Special Drawing Rights (SDRs) or in gold francs (or other agreed currency), together with the relevant conversion rate.

5.2 Any TA accounts omitting these details may be referred back to the origin Administration and the credit due to it reduced by the total of the rejected accounts.

5.3 A monthly recapitulatory statement of TA accounts shall be prepared by the origin Administration for each Guarantor Administration. This statement shall recapitulate the individual accounts of the persons or organizations responsible for the payment of TA traffic charges.

5.4 A maximum of three copies of the recapitulatory statement and also of the individual statements shall be sent to the Guarantor Administration.

5.5 The recapitulatory statement and the attached individual accounts may be sent to the Guarantor Administration either direct or through another Administration that has accounting relations with the Guarantor Administration.

5.6 A period of up to three months following the acceptance of the traffic may be allowed for the preparation and dispatch of these accounting documents to the Administration concerned.

5.7 Any complementary information required for monthly TA statements shall be requested by the Guarantor Administration from the Administration that has prepared the accounts within three months of receipt of the TA accounts. When this period expires, the amount concerned shall be included for settlement in quarterly accounts for the TA service (see § 6 below).

5.8 Adjustments arising from discrepancies unresolved on expiry of the three months referred to in § 5.7 shall be settled in subsequent accounts, as agreed between the Administrations concerned.

6 Settlement of TA accounts

6.1 In the absence of alternative settlement procedures agreed between the Administration concerned, settlement of quarterly TA balances shall be effected in accordance with the settlement provisions of the *International Telecommunication Convention* [1] and the *Telegraph Regulations* [2] annexed thereto.

7 Liability for collection of charges

7.1 The Administration that has accepted responsibility for the collection of charges guarantees payment of the TA charges to other Administrations.

References

- [1] *International Telecommunication Convention*, Nairobi, 1982.
- [2] *Final Acts of the World Administrative Telegraph and Telephone Conference, Telegraph Regulations, Telephone Regulations*, ITU, Geneva, 1973. (See also preliminary note No. 3, page XIV.)

SECTION 11

CHARGING AND ACCOUNTING IN THE INTERNATIONAL TELEPHONE SERVICE

11.1 Charging (determination of collection charges) in the international telephone service

Recommendation D.100¹⁾

CHARGING FOR INTERNATIONAL CALLS IN MANUAL OR SEMI-AUTOMATIC OPERATING

(Geneva, 1972; amended at Melbourne, 1988)

1 The charge unit for a particular international service is the charge for an ordinary private station call of one minute duration, set up during the period of heavy traffic. The minimum charge for a call in manual or semi-automatic operating is normally one charge unit. Administrations may, in accordance with their national policy, levy a higher minimum number of charge units. To recover the costs of operator assistance, Administrations may levy an additional charge per call, the level of which is a national matter.

The charge unit is always the same, whatever the route (primary or secondary) used between any two countries.

2 The charge for a call established over a chain of circuits should not exceed the sum of the charges for calls over each individual circuit. However, the Administrations concerned may agree to fix a total unit charge less than the sum of the charges.

3 Subject to agreement between Administrations, two different rates may be applied to traffic exchanged over their mutual routes:

- one rate during the period of heavy traffic;
- the other rate during the period of light traffic (see Recommendation D.106).

4 The charge for a personal call is the same as that for a station call with the same priority and of the same duration, exchanged during the same charge period, plus a special flat-rate charge for personal calls, the amount of which is established by the billing Administration.

However, in certain relations and, in particular, those operated by radio circuits, the Administrations concerned may agree to apply the same charges for station calls and personal calls.

¹⁾ The provisions of this Recommendation were contained in the former Recommendations cited in [1] and [2].

5 The facility of collect calls or the use of credit cards may be accepted for station calls, personal calls (possibly including personal calls with dispatch of a messenger), data transmission calls and conference calls.

6 Personal collect or credit card calls are subject to a special flat-rate charge to be established by the billing Administration.

7 Station credit card calls may be subject to a special flat-rate charge to be established by the billing Administration.

8 Station collect calls may be subject to a special flat-rate charge, the amount of which is fixed by the billing Administration. The called subscriber may be informed of the charge he will have to pay.

9 Administrations wishing to levy a special charge for sending a messenger are advised to adopt a uniform amount for all calls requiring this facility and to notify it to other Administrations.

10 Principles for application of charges

10.1 When the call requested has been set up, the appropriate charge is payable. When the call requested has not been set up, no charge is payable.

10.2 In the case of a request for a station call, the call is considered set up when the two stations are interconnected.

10.3 In the case of a request for a personal call, the call is considered set up when the caller is interconnected with the called party.

References

- [1] CCITT Recommendation *Operation of international telephone services (initial system)*, White Book, Vol. II-A, Rec. E.142, ITU, Geneva, 1969.
- [2] CCITT Recommendation *Operation of intercontinental telephone services (new system)*, White Book, Vol. II-A, Rec. E.143, ITU, Geneva, 1969.

Recommendation D.101¹⁾

CHARGING IN AUTOMATIC INTERNATIONAL TELEPHONE SERVICE

1 Principles for charging

1.1 It has been the general practice to charge for international telephone calls on the basis of a minimum indivisible period of 3 minutes, and then by whole minutes.

1.1.1 This system of charging, which is still in existence, was adopted at a time when automatic international service was not envisaged;

1.1.2 Many Administrations have adopted methods of charging for use with their national automatic service, in which the charges are recorded on subscribers' meters, but based on two different principles:

- a) some Administrations have for many years used a system based on trains of meter-pulses issued at the start of each period of 3 minutes, the number of pulses in the train depending on distance;
- b) other Administrations use, or intend to use, a system based on individual meter-pulses issued at short intervals of time, the length of the interval depending on the distance.

¹⁾ Approved in 1958 by the Special Assembly of the CCITT. Slightly modified and brought up to date in 1973 by the CCITT Secretariat in preparing the *Green Book*.

1.1.3 Certain Administrations which have adopted the system of charging by periodic pulses in their national services have made it known that it will not be possible for them to use a different system of charging for automatic international calls.

1.1.4 The use, on the same international relation:

- a) at one end, of a 3 minute + 3 minute method of charging (national type) or of a 3 minute + 1 minute method of charging (the type prescribed for international calls in manual operation);
- b) at the other end, of a periodic pulse method of charging (national type);

would lead to a grave dissymmetry in the charges made to users in the two countries concerned.

1.1.5 This serious dissymmetry would be likely to provoke adverse reactions from the subscribers of one country, who would be less favourably treated than their correspondents in the other country;

1.1.6 This serious dissymmetry would be likely to create certain financial difficulties for one of the countries:

- a) as a result of changes which may possibly take place in the balance of traffic;
- b) as a result of the fact that the country which charged on the basis set out in § 1.1.4 a) above would receive, in respect of the use of its system for incoming traffic, substantially less than it would collect from its own subscribers.

1.2 In order to avoid too great a dissymmetry in the charges collected, it was recommended in 1958 that either of the two following methods of charging might be used in the international automatic service:

- a) charging minute by minute;
- b) charging by periodic pulses, of the type used in the national automatic services.

2 Reduction of dissymmetry in the charges

2.1 As the existence, in the same relation, of the two methods a) and b) in § 1.2 above lead to a dissymmetry in the charges made, and as moreover the existence, in the same relation, of metered pulse charging methods with different intervals in the two countries concerned results in a very small dissymmetry in the charges made, in a given service between two countries A and B, the Administrations shall endeavour to see that the revenue obtained from users and the amounts entering in the international accounts correspond.

2.2 Hence, for a given relation, each Administration fixes the unit-charge and the unit-interval according to the characteristics of its national charging system but endeavours to observe the following equalities:

$$\sum_n d_r u_r = \sum_n d_A u_A = \sum_n d_B u_B$$

which equalities apply to a group of n messages chosen in such a way as to constitute a representative sample of the traffic on the relation in question.

In this equality,

d_r = actual call duration,

d_A = chargeable duration in the charging system of country A,

d_B = chargeable duration in the charging system of country B,

u_r = unit-charge used in drawing up international accounts in the automatic international service,

u_A = charge per unit-interval in the charging system of country A,

u_B = charge per unit-interval in the charging system of country B.

Note — d_r is expressed in minutes, with the appropriate decimals.

d_A and d_B are expressed by the whole number of unit-intervals in the charging system of country A or country B (the interval between two periodic pulses in periodic-pulse systems, or one minute in a 1 + 1 system).

u_r is a charge per (actual) call duration, is expressed in gold francs per minute of conversation and is the same for both directions in the relation in question.

Recommendation D.103

CHARGING IN AUTOMATIC SERVICE FOR CALLS TERMINATING ON SPECIAL SERVICES FOR SUSPENDED, CANCELLED OR TRANSFERRED SUBSCRIBERS¹⁾

(Melbourne, 1988)

It is desirable for calls terminating on special services for suspended, cancelled or transferred subscribers in the international automatic service to receive the same treatment in different countries.

The CCITT considers that no charge should be made for these calls.

Note — As far as all the signalling systems involved in a given connection for any of the possible relations allow the transmission of the “no-charge” information, the answer signal should not be withheld. Nevertheless such a situation will not exist on a worldwide basis for a long period to come. Therefore it is appropriate, for the time being, to suppress the sending of the answer signal on the international circuits for calls towards these special services. It should also be noted that according to Recommendation Q.118, such calls will be cleared upon expiry of a certain fixed time-out.

Recommendation D.104

CHARGING FOR CALLS TO SUBSCRIBER'S STATION CONNECTED EITHER TO THE ABSENT SUBSCRIBER'S SERVICE OR TO A DEVICE SUBSTITUTING A SUBSCRIBER IN HIS ABSENCE²⁾

(Melbourne, 1988)

1 When a subscriber's line is connected to the absent subscriber's service or to a device which answers the telephone in the subscriber's absence (and may possibly record a message or exchange data) the absent subscriber's service or the device is assumed to be equivalent to a person answering for the subscriber at the latter's express wish. The call shall therefore be set up and charged in the normal manner.

1.1 *Station calls*

For station calls, charging takes effect on receipt of an answer:

- from the absent subscriber's service, or
- from a device substituting a subscriber in his absence.

1.2 *Personal calls*

The caller is informed that the line is connected to the absent subscriber's service or to a device substituting the called party in his absence. If he accepts the call he is charged on the basis of duration and the special charge for a personal call is levied. If he does not accept the call, no charge is levied.

2 This Recommendation applies to manual, semi-automatic and automatic services.

¹⁾ This Recommendation is also included in the Series E Recommendations under the number E.231.

²⁾ This Recommendation is also included in the Series E Recommendations under the number E.232.

Recommendation D.105

CHARGING FOR CALLS FROM OR TO A PUBLIC CALL OFFICE

The establishment of a station call from or to a public call office entails special expenses, but these special expenses are negligible in comparison with the other costs involved in the establishment of an international call.

It is therefore preferable not to collect a supplementary charge for the use of a public call office for an international call, but, notwithstanding, the Administrations which collect a supplementary charge in their national services may apply such a supplementary charge to international calls, it being understood that this supplementary charge is not included in the international accounts.

Recommendation D.106

INTRODUCTION OF REDUCED RATES DURING PERIODS OF LIGHT TRAFFIC IN THE INTERNATIONAL TELEPHONE SERVICE

(Geneva, 1972)

1 It is desirable for Administrations to have uniform guide lines for applying reduced rates during periods of light traffic in the international telephone service. Observance of the following rules should lead to some degree of uniformity in this sphere.

2 Subject to the agreement of the Administrations concerned and with due regard to § 5 below, a reduced rate may be charged during light traffic periods both for fully automatic calls and for semi-automatic or manual calls.

3 According to the reasons for which the reduced rate is introduced, Administrations may choose a percentage reduction ranging from a minimum of 10 per cent to a maximum of 50 per cent. In selecting the percentage, Administrations should take into account the following:

- the necessity of informing the customers, by some means, of the hours and level of reduction;
- the need to determine the effects on distribution of traffic during the various hours and on revenues obtained from the service. In order to determine such effects, it may be well to introduce a series of small reductions rather than one large reduction.

3.1 The percentage reduction should be fixed by agreement between the terminal Administrations concerned to avoid dissymmetry between the charges at the two extremities of a relation.

3.2 Within regions, Administrations should agree to apply, as far as possible, the same percentage reduction.

3.3 For charging and accounting purposes, calls should be considered in principle to fall entirely within the charge period in which they start, regardless of the fact that they may end in another charge period.

4 The reduced rate periods and the date of introduction must be fixed by bilateral agreement or possibly by multilateral agreement for a region in the light of the following considerations.

4.1 The days and times during which reduced rates are offered may not be the same in both directions of the same relation, in particular as regards:

- public holidays, which vary from country to country;
- hours, owing to the difference in local times, especially in intercontinental relations. It is recommended, however, that the duration of the period in which the reduced rates apply should be the same in both directions.

4.2 The reduced rate period should begin and end on the hour (and not at subdivisions of an hour).

4.3 When there is a time difference between the two ends of the same relation, the period of application of the reduced tariff shall be determined on the basis of local time in the country of origin.

However, calls paid for in the country of destination may be charged:

- i) according to the tariff provisions in force in the country of destination;
- ii) taking into account, where appropriate, the charging period in effect at the start of the call in the country of origin.

4.4 Since business hours do not generally extend beyond 1900 hours (local time) in the evening and do not start in the morning before 0800 hours (local time), it is recommended that the intervening period be adopted for charging reduced rates on working days (see also § 4.6 below) in relations where the end-to-end time difference is not more than 3 hours.

4.5 In relations where the time difference is greater than 3 hours, the night reduced rate shall not be applied in the country of origin as long as the busy period has not yet ended in the country of destination.

4.6 The reduced rate shall normally be charged on Saturdays in countries where this is a rest day and on Sundays in countries where this is not a working day.

5 It is recommended that the application of reduced rates to the automatic service (see also § 2 above) be delayed until all or nearly all subscribers are able to dial their own calls in the relation concerned or until nearly all traffic can be routed automatically.

6 If the introduction of reduced rates is made before full dial capability exists, in the interest of fairness to subscribers who still must pass their traffic by semi-automatic or manual means, the reduced rate should be granted to these subscribers also.

11.2 Charging and accounting of calls with special services

Recommendation D.110

CHARGING AND ACCOUNTING FOR CONFERENCE CALLS¹⁾

(Malaga-Torremolinos, 1984)

Conference calls may be accepted in the international service by agreement between the Administrations concerned. The conditions for the operation of the service and the setting up of calls by manual and semi-automatic working are defined in Recommendation E.151 [1].

1 Types of conference calls

Conference calls are normally of two types:

- bidirectional calls in which each participant can listen and speak whenever he wishes to intervene in the conversation;
- unidirectional calls in which only one of the participants can speak, the other participants being able only to listen.

However, a conference call may consist of a combination of both types of call defined above.

2 Assessment of the chargeable duration of calls

2.1 In determining the chargeable duration of an international conference call, the basic principles outlined in Recommendation E.230 [2] shall be applied. It should moreover be noted that:

- 2.1.1 the chargeable duration shall begin when all participants have been connected to the originator of the call;
- 2.1.2 the chargeable duration shall end when the originator gives the clearing signal;

¹⁾ The denomination "conference call" without further clarification or addition has been chosen to designate communications between several subscribers in different countries, known before the Vth Plenary Assembly of the CCITT (1972) as "multiple calls" or as "conference (multiple) calls".

2.1.3 if, by prior agreement, the originator of the call asks for the withdrawal or introduction of one or more participants during the call, the original call shall be regarded as terminated. In the case of withdrawal, the end of the original call coincides with the start of the next call. In the case of an addition, the start of the next call coincides with the moment when the new participant(s) is/are connected to the others;

2.1.4 no charge shall be levied when a call cannot be set up.

3 Charging

The charges applicable to conference calls shall be determined in accordance with the following principles:

3.1 The country of origin of a conference call shall be the country where the call is billed.

3.2 The establishment of the collection charge shall be a national matter for the country of origin.

3.3 Every international connection between the first bridging equipment for conference calls (calling side) and a participant in a conference call shall be considered as a personal call.

3.4 If the bridging equipment for conference calls is used in the country of transit or destination, the charging rules shall be established by agreement between the Administrations concerned.

4 Preparation of international accounts

4.1 International accounts shall be prepared by the Administration of origin.

4.2 The remuneration of the countries of transit and destination shall be governed by the arrangements concluded for the preparation of accounts for personal calls as if there had been a personal call between the country of origin and each of the participants in the countries of destination.

4.3 When the bridging equipment for conference calls is used in the country of transit or destination, the Administrations concerned shall agree upon accounting arrangements different from the one prescribed in 4.2 above, taking into account the actual configuration of international circuits utilized.

References

- [1] CCITT Recommendation *Conditions of operation and setting up of conference calls*, Rec. E.151.
- [2] CCITT Recommendation *Charging (Determination of collection charges) in the international telephone service*, Rec. E.230.

Recommendation D.115

TARIFF PRINCIPLES AND ACCOUNTING FOR THE INTERNATIONAL FREEPHONE SERVICE (IFS)

(Melbourne, 1988)

Preamble

This Recommendation sets out the general principles for charging and international accounting to be applied by Administration for the provision of the international freephone service.

With regard to tariff and accounting principles, the **internal freephone service** is a service where the subscriber can be allocated a special (freephone) number and the charges for all calls to this number are paid by the respective subscriber instead of by the originating caller¹⁾.

¹⁾ For technical or other reasons, some originating Administrations may apply a small utilization charge to the calling party.

1 Tariff structure

1.1 Tariff components

1.1.1 The tariff for the service should normally consist of two components:

- a network access component;
- a network utilization component.

1.1.2 The network access component, normally intended to cover the cost of making the service available, represents the cost of the service which is not dependent on network utilization.

It corresponds to what is generally known as the “network connection charges”.

1.1.3 The network utilization component normally covers the costs which are dependent on network utilization.

1.2 Network access component

1.2.1 Access charges should be levied for each subscription and should normally be independent of network utilization. They may consist of:

- a) an initial fee (non-recurring);
- b) a subscription rental (payable at certain intervals, e.g. monthly or quarterly, until the subscription is terminated).

1.2.2 The access charges shall not be included in international accounts between Administrations and their establishment is strictly a national matter.

1.3 Network utilization component

1.3.1 These charges may vary by call duration and country origin and time of day.

1.3.2 Composition

Charges for network utilization may consist either of a communication charge or a minimum charge/a minimum average charge per call.

2 Collection charges

2.1 Collection charges are a national matter, but the structure and level should encourage international cooperation for the development of the service.

2.2 Normally, chargeable time for calls begins and ends on the same basis as for the automatic international telephone service.

3 International accounting

3.1 IFS should be accounted for and settled using the same principles and methodologies used for other international telephone services and should be bilaterally agreed to by the two Administrations.

3.2 The terminating Administration, having the charging responsibility for IFS, is also responsible for the establishment of international accounts.

3.3 As an automatic service, IFS should be accounted at the same rate as the international automatic telephone service. By bilateral agreement, Administrations may agree to apply a higher rate to take account of the additional resources provided by the country of origin.

3.4 International accounts should identify usage associated with IFS separately.

COLLECTION CHARGES APPLIED TO AUTOMATED TELEPHONE CREDIT CARDS

(Melbourne, 1988)

The CCITT,

considering

- that currently used manual credit cards apply collection charges of the card-issuing Administration;
- that the current system of applying the card-issuing Administration's tariffs may be difficult to change in the foreseeable future;
- that automated credit cards may be used as a replacement for manual credit cards;
- the expansion of the use of automatic credit cards will stimulate the use of telephone services and is desirable as a marketing tool,

the following charging principles are recommended

- 1 For calls from the country of the card-issuing Administration, the tariffs of that Administration will apply.
- 2 For calls within a second country, or from a second country to a third country, the charge raised against the card holder is a national matter for the card-issuing Administration.

The charge can be based on i) or i) and ii) below:

- i) application of the appropriate tariff of the Administration where the call originated,
- ii) application of a per call charge to cover the administrative costs for the transaction;

- 3 For calls from a second country to the card-issuing country, the charge raised against the card holder is a national matter for the card-issuing Administration.

The charge can be based on i) or ii), with or without iii) below:

- i) application of the appropriate tariff of the card-issuing Administration,
- ii) application of the appropriate tariff of the Administration where the call originated,
- iii) application of a per call charge to cover the administrative costs for the transaction.

11.3 Procedures for remuneration of Administrations for facilities made available

Recommendation D.150

NEW SYSTEM FOR ACCOUNTING IN INTERNATIONAL TELEPHONY

(Mar del Plata, 1968; amended at Melbourne, 1988)

1 General considerations

1.1 Introduction

1.1.1 The introduction of automatic and semi-automatic operation entails the use of alternative and overflow routings which make it impracticable to follow the path of a telephone call without considerable technical complications.

1.1.2 In order to avoid complicating too much the new technical equipment required and thereby raising its cost, new procedures are required so as to eliminate the need to know the path of every call as the basis for accounting in international telephony.

1.1.3 There is also the situation in certain international relations whereby Administrations purchase or lease direct transit circuits for the handling of their traffic.

1.1.4 The following procedures to meet these new situations and improve the efficiency of the world telephone network are valid, above all, for semi-automatic and automatic operation. They can be applied on relations operated manually, subject to agreement between the Administrations of all the countries concerned.

1.1.5 These procedures introduce the new concept of remunerating the Administrations of countries of destination and transit for making telephone network facilities available for use (e.g. for the routing of telephone calls including those with special facilities and calls indistinguishable from telephone calls such as facsimile transmission, etc.) by Administrations of countries of origin.

1.2 Explanation of some of the terms and expressions used in this Recommendation

1.2.1 Except for the expression "conversation time" which is defined in § 1.2.2 below, an explanation of some of the terms or of some of the expressions used in this Recommendation is given in Recommendation D.000.

1.2.2 conversation time

F: durée de conversation

S: duración de conferencia

A minute of conversation time is the traffic unit that is recommended for use in the traffic unit price procedure. Conversation time is the interval that elapses between:

- the moment when the reply condition (answer signal in the backward direction) is detected at the point where the recording of the call duration takes place, and
- the moment when the clear forward condition (clear forward signal) is detected at the same point.

1.3 Basic principles of a new system for accounting in international telephony

1.3.1 The remuneration of the Administrations of *transit countries* (direct transit or switched transit) should not depend upon the procedure selected by the terminal Administrations for accounting for their remuneration. That is, the different procedures affect only the remuneration of terminal Administrations.

1.3.2 As regards the remuneration of the Administrations of the countries of destination and transit countries, it is preferable to make no distinction between automatic and semi-automatic traffic when establishing international accounts. This is in line with the idea that Administrations should be remunerated on the basis of the facilities made available. Whilst expenses of setting up calls in these two cases are different in countries of origin, they are approximately the same in the countries of destination and transit countries.

1.3.3 It is preferable, in order to simplify accounting, that one procedure or the other be used to the greatest possible extent. Certain regions may find it expedient to select one of the procedures for use within their region.

1.4 *Procedures*

Procedures relating to remuneration of Administrations of *destination and transit countries* are as follows:

1.4.1 *Remuneration of countries of destination*

Administrations of countries of destination will be remunerated,

either by:

1.4.1.1 a procedure whereby the Administration of the country of origin keeps its revenue and remunerates the Administration of the country of destination for the facilities made available, including the international circuit, the international exchange and the national extension¹⁾:

a) on the basis of a flat-rate price per circuit (called the *flat-rate price procedure*); or

b) on the basis of traffic units carried (called the *traffic-unit price procedure*);

in either case, the price will be fixed by the Administration of the country of destination;

or by:

1.4.1.2 the procedure whereby accounting revenue is shared between terminal Administrations (called the *accounting revenue division procedure*).

1.4.2 *Remuneration of transit countries*

Administrations of transit countries will be remunerated for facilities made available,

either by:

1.4.2.1 the *flat-rate price procedure* relating in the main to direct transit operations;

or by:

1.4.2.2 the *traffic-unit price procedure* relating in the main to switched transit operations.

1.4.3 *Remuneration of the country of origin*

For the remuneration of the country of origin, see § 4.

1.5 *Traffic unit*

1.5.1 *Definition of the traffic unit – Conversation time*

It is recommended that, when the traffic-unit price procedure is used (see §§ 1.4.1.1 b) and 1.4.2.2 above), the traffic unit adopted for the purpose of remunerating other Administrations should be *one minute of conversation time*.

¹⁾ Having due regard, as concerns this element, to the location of the international exchange and the distribution of the international traffic within the country of destination.

1.5.1.1 With regard to a call, conversation time is the interval that elapses between:

- the moment when the reply condition (answer signal in the backward direction) is detected at the point where the recording of the call duration takes place, and
- the moment when the clear forward condition (clear forward signal) is detected at the same point.

1.5.1.2 The above duration conforms to that in Recommendations E.230 [1] and E.260 [2] for the “call duration” of automatic calls; it is now to be applied to all calls covered by this Recommendation. In practice, the reply condition is detected by recognition of the answer signal generated upon answer of the called party or distant operator. The clear forward condition is detected by recognition of the signal generated by the calling party or outgoing operator clearing down the connection. In default of such action, the connection will be automatically cleared down and a clear forward signal generated in the outgoing exchange after a delay period following receipt of the clear back signal generated by the called party replacing the receiver.

1.5.1.3 Conversation time has been chosen as the traffic unit because it is capable of being measured automatically in response to signals generated by CCITT signalling systems. Furthermore, it allows accounts to be settled by an Administration of a transit country without waiting for information from countries “up the line” as regards call durations taken from data on operators’ tickets.

1.5.1.4 The only other unit which meets these criteria, holding time, is not recommended because of the wide variations between chargeable time and holding time in different relations and in different call types, which makes the use of holding time inappropriate for remunerating Administrations of countries of destination.

1.5.2 *Remarks*

1.5.2.1 In relation to individual calls, conversation time:

- a) will be less than circuit-holding time by reason, in particular, of the extra time circuits are held because there will be a period between the seizure of the circuit and the answer signal;
- b) will be the same as chargeable time in the case of station-to-station calls in the fully automatic service and will be the same as charged in the same service when periodic pulse-metering systems are used;
- c) may be more than chargeable time in the case of personal calls where time is spent in obtaining the called party, of calls with special facilities requiring operator intervention (such as credit card, collect, conference or data calls or phototelegraph transmissions); or in the case of station calls requiring operator assistance in the called country of destination or a transit country.

1.5.2.2 In relation to overall use of the circuit:

- a) there will be additional holding time in case of inability to reach the distant subscriber;
- b) there will be additional conversation time because of time on the circuit for service calls, directory inquiry or other information exchanges between operators;
- c) exceptionally, conversation time could be less than charged time depending on the mixture of traffic on the circuit and whether the Administration of the country of origin rounds up the charged time in 3 + 3 or 3 + 1 minutes charging systems, or when the final pulse in a periodic pulse-metering system does not coincide with the end of the conversation time.

1.5.2.3 It should further be noted that where conversation time is not known, but other time periods such as circuit-holding time or charged or chargeable time are known, e.g. from operators’ tickets, it is possible to convert these other times to approximate conversation times by the use of factors which allow for the time differences referred to in §§ 1.5.2.1 and 1.5.2.2 above. These factors can be established on the basis of periodic measurement or sampling procedures, and may need to take account of individual characteristics.

2 Remuneration of the Administration of the country of destination

2.1 *Flat-rate price procedure*

2.1.1 Under this procedure the Administration of the country of destination receives payment for the facilities made available by a flat-rate price fixed by it as a price per circuit. The price per circuit would cover:

- a) the international circuit section provided by the country of destination;
- b) the use of its international exchange;
- c) the national extension ²⁾.

2.1.2 In fixing these flat-rate prices, Administrations of countries within the same region may find it desirable to follow the principles in CCITT Recommendations.

2.2 *Traffic-unit price procedure*

2.2.1 Under this procedure, the country of destination receives payment on the basis of the price fixed by it per traffic unit. This price will be related to the facilities made available and will take account of:

- a) the international circuit section provided by the country of destination;
- b) the use of its international exchange;
- c) the national extension ²⁾.

2.2.2 In fixing these traffic-unit prices, Administrations of countries within a region may find it desirable to follow the principles set forth in CCITT Recommendations.

2.3 *Accounting revenue division procedure*

2.3.1 Under this procedure, the accounting revenue from the traffic exchanged in their relationship is divided between the Administrations of the terminal countries, in principle on a 50/50 basis. Proportions other than 50/50 may be used when the facilities made available by each of the Administrations of the terminal countries are not approximately equivalent, or if Administrations reach agreement on a different proportion when, for example, the costs differ greatly.

2.3.2 The Administration of each terminal country in principle pays an appropriate share (normally half) of any remuneration due to the Administrations of transit countries.

2.4 *Consideration regarding choice of accounting procedure*

2.4.1 The accounting revenue division procedure is particularly appropriate when there is a significant volume of traffic exchange or when operation is over both-way circuits³⁾ as in the case of certain intercontinental traffic relations. The establishment of accounts for collect and credit card calls may be easier under the accounting revenue division procedure.

2.4.2 On the other hand, other accounting procedures are more appropriate when:

- a) the volume of traffic exchanged between the Administrations of terminal countries is light, as is the case when all traffic is handled only by switched transit;
- b) there is one-way operation on all the international circuits concerned³⁾.

²⁾ Having due regard, as concerns this element, to the location of the international exchange and the distribution of the international traffic within the country of destination.

³⁾ In connection with one-way and both-way circuit operations, actual circuit operation should not be confused with the possibilities of operating such circuits that signalling systems may offer. Even though the circuits between the terminal countries have a signalling system permitting both-way operation, it is common practice, when the volume of traffic is large enough, to split the both-way circuit groups into three groups, two of which are operated on a one-way basis, the third, operated on a both-way basis, being used for overflow from the first two.

2.5 *Simplification of accounts and use of traffic sampling*

2.5.1 In certain conditions, the Administrations of terminal countries may agree not to exchange international accounts when, for example:

- a) the balance of settlement of their accounts is normally negligible;
- b) the *terminal countries'* traffic levels in both directions are more or less equal;
- c) there is approximate equivalence as regards their national extension⁴⁾.

2.5.2 Traffic sampling may be used for the establishment of international accounts when the countries involved in a given traffic relation so agree. This sampling may then avoid the necessity for continuous traffic measurements. For example, the samples could cover five working days and could be taken at regular intervals, such as once a year or four times a year, or they could be taken on the occasion of any significant change in the number of circuits in the given relation. Sampling is particularly useful when traffic in any international relationship is reasonably stable.

3 **Remuneration of the Administrations of transit countries**

3.1 *Flat-rate price procedure*

3.1.1 It is recommended that in the case of direct transit via other countries, the Administrations of these direct transit countries should be remunerated for the exclusive use of the facilities made available on the basis of a flat-rate price per circuit.

3.1.2 Under the flat-rate price procedure, the terminal Administrations will ensure that the best possible use is made of the circuits because:

- a) if they provide too few circuits, they pay the penalty in the form of the lower quality of service they offer to their subscribers;
- b) if they provide too many circuits, they will have to pay more in remuneration and will be penalized financially.

3.1.3 The flat-rate price is fixed by the Administration of the transit country. In fixing these flat-rate prices, the Administrations of countries within a region may find it desirable to follow the principles in CCITT Recommendations regarding the establishment of recommended values for facilities provided.

3.2 *Traffic-unit price procedure*

3.2.1 When transit traffic is not handled on direct circuits (e.g. in the case of traffic passing by switched transit), the remuneration for the transit routing through one or more countries should be made to the Administration of the country of the first transit exchange used, which fixes a price per unit of handled traffic. This price should also include the remuneration to the Administrations of other transit countries, if any, and to the Administration of the country of destination, where appropriate.

3.2.2 The procedure of remuneration to the Administration of the country of the first transit exchange for the entire routing of the traffic to the country of destination (remuneration of the first transit exchange) is necessary to meet the situation where traffic may be routed through subsequent transit exchanges, each of which, under automatic operation, will be unable to identify the country of origin of the traffic. This procedure makes the source of the traffic irrelevant for the establishment of accounts. Depending on the accounting methods in force between Administrations, the remuneration of the first transit centre may or may not include payments for use of the facilities of the country of destination.

⁴⁾ Having due regard, as concerns this element, to the location of the international exchange and the distribution of the international traffic within the country of destination.

3.3 *Establishment of a switched-transit relation*

3.3.1 Before switching traffic via a transit exchange, the Administration of the country of origin will request the country in which the first switching transit exchange is situated for a price quotation per transit-traffic unit to the country of destination.

3.3.2 The Administration of the country to which the first exchange belongs advises the price per traffic unit for handling the traffic from the transit exchange to the country of destination, including remuneration of the latter country where appropriate. This price may be set up by the Administration of the country to which the transit exchange belongs, on the basis either of a special study or of a price already fixed for the transit routing to the same terminal country of traffic originating in other countries.

3.3.3 The Administration of any country with traffic to be routed in transit may, of course, find it advisable to consult the Administrations of several countries to ascertain which transit routing is the most economical.

3.3.4 The consultations by the Administration of the country of origin regarding the transit routing (by switching) of its traffic should be in accordance with the principles of the International Routing Plan described in Recommendation E.171 [3].

3.4 *Calculation of the remuneration to the Administration of the country of the first transit exchange on the basis of traffic units*

3.4.1 Remuneration to the Administration of the switched transit country depends on the number of traffic units handled by its transit exchange.

3.4.2 For the establishment of international accounts, the Administration of the country of origin should determine the volume of traffic in minutes of conversation time routed each month towards each country of destination through this transit exchange. If it is not technically possible to measure units of conversation time, the originating Administration may use charged minutes (shown on operators' tickets) or measurements of holding time and make the necessary conversion to obtain an assessment of conversation time. The procedure for determining the conversion factor to be used for each relation will be decided by agreement between the Administrations of the originating and transit countries and if necessary, the destination country, taking the remarks made in § 1.5.2 above into account.

3.4.3 An alternative version of this system can be contemplated when the traffic to the country of destination routed via a given international transit centre is sufficiently stable; the Administrations of the country of origin and of the country where the first transit exchange is situated might then agree to settlement on the basis of an estimated number of traffic units determined by means of traffic sampling and subject to periodic revision (such as once a year or four times a year).

3.4.4 For the establishment of international accounts for temporary alternative routes, the Administration of the country of origin should determine the volume of traffic in minutes of conversation time routed via the transit Administration. If it is not possible to measure units of conversation time, two alternative methods are described in Annex C and may be used by originating Administrations subject to agreement of the Administrations concerned.

4 *Remuneration of the Administration of the country of origin*

4.1 As far as collect calls and credit card calls, placed with the assistance of an operator in the country of origin, are concerned, subject to agreement between the Administrations concerned, the Administration of the country of destination should pay a flat-rate charge per call to the Administration of the country of origin of the call in addition to the normal share relating to the call. The purpose of this flat-rate charge, the level of which is fixed by bilateral agreement, would be to cover the costs incurred in the country of origin for the establishment of the call.

4.2 Given that automated credit card service is still in the early stages of development, reimbursement and any additional accounting procedures are for further study but the following principles may be applied.

4.2.1 For those calls placed between two countries and billed to an automated credit card customer of the Administration of one of these countries, subject to bilateral agreement, either:

- i) the system based on the existing practices for a manual credit card call should apply, or
- ii) the card-issuing Administration will pay all charges for the call as established by the Administration of the origin of the call to that Administration.

4.2.2 For those calls placed within the country of one Administration and billed to an automated credit card customer of another Administration, the card-issuing Administration will pay all the charges for the call as established by the Administration of the call to that Administration.

4.2.3 For those calls placed between two countries and billed to an automated credit card customer of the Administration of another country, the card-issuing Administration will pay all the charges for the call as established by the Administration of the origin of the call to that Administration.

4.2.4 In all cases, the Administration of the country of origin of the call will include that call in its traffic account with the call destination Administration.

5 Notes and examples

To assist in an understanding of the new procedures, the following three annexes are provided:

Annex A: Differences between collection charges and accounting rates.

Annex B: Examples of the various procedures for remunerating Administrations.

Annex C: Traffic measurement conversions from seizures or erlangs into conversation time for temporary alternative routes.

ANNEX A

(to Recommendation D.150)

Differences between collection charges and accounting rates

A.1 The collection charge is the charge collected by an Administration from its public for the use of the international telephone service.

A.2 The accounting rate is the rate per traffic unit agreed between Administrations for a given relation, which is used for the establishment of international accounts.

A.3 Whilst, in general, Administrations correlate collection charges and accounting rates, the two cannot always be the same because, for example:

- a) in most countries collection charges and accounting rates will be expressed in different currencies;
- b) collection charges and accounting rates may be based on different traffic units;
- c) the value of national currencies can fluctuate relative to the special drawing right (SDR) or the gold franc;
- d) collection charges may be influenced by government fiscal policies.

A.4 As a general principle, in fixing the collection charges, Administrations should make every effort to avoid too large a dissymmetry between the charges applicable in each direction of the same relation.

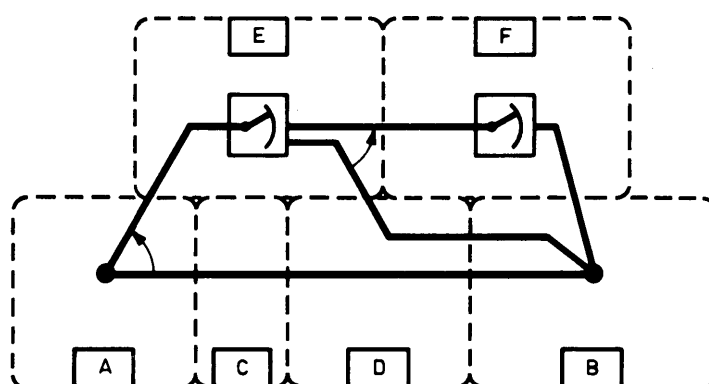
ANNEX B

(to Recommendation D.150)

Examples of the various procedures for remunerating Administrations

B.1 General

B.1.1 The diagram in Figure B-1/D.150 shows a typical pattern of circuit interconnections between various countries, with particular reference to the exchange of traffic between countries A and B carried partly on direct circuits through countries C and D, and partly on switched transit circuits through country E – which in turn may also make use of transit-switching facilities in country F.



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FIGURE B-1/D.150

Typical pattern of circuit interconnections between various countries

B.1.2 Three basic situations are examined in relation to use of Recommendation D.150:

B.1.2.1 Case 1 where countries A and B account for the total traffic between them on the basis of the accounting revenue division procedure and the sharing of the costs of facilities obtained from countries C, D, E and F.

B.1.2.2 Case 2 where countries A and B account for the total traffic between them on the basis of the traffic unit and/or flat-rate price procedure, each being responsible for accounting forward for the traffic it originates.

B.1.2.3 Case 3 where countries A and B account for some of their traffic on the basis of the accounting revenue division procedure, and the balance of their traffic on the basis of the traffic-unit price procedure.

B.1.3 The selection of methods of remuneration to be used will be agreed jointly between the Administrations of countries A and B taking into account, among other things, the routes and facilities made available and the traffic-unit and flat-rate prices quoted by countries C, D, E and F.

B.2 *Case 1 – Use of the accounting revenue division procedure for all traffic*

B.2.1 In accordance with the accounting revenue division procedure the Administrations of countries A and B jointly share the revenues of the traffic between their countries, each paying their appropriate shares (normally 50/50) of

- a) the remuneration due to direct transit countries C and D for the use of the circuit sections traversing those countries; and
- b) the costs incurred in use of overflow routes via E and F.

No separate or identified payment is made by the Administration of country A or country B for the facilities made available in country of destination B or A, at least for the portion of traffic using the direct route.

B.2.2 *Direct-transit traffic*

Remuneration to the Administrations of the direct-transit countries C and D is based on a flat-rate price per circuit and calculated according to the (crowflight) length of the circuit sections on the territories of countries C and D.

B.2.3 *Switched-transit traffic handled by the exchange in E*

B.2.3.1 The remuneration to the Administration of country E for traffic routed from A to B by switched transit at the exchange E is paid by the Administration of country A. The Administration of country E receives from the Administration of country A a payment calculated from the number of traffic units passed to country B on behalf of the Administration of country A.

Since the accounting revenue division procedure implies that each of the Administrations of the terminal countries A and B pays a share (normally half) of the remuneration due to the Administrations of the transit countries, irrespective of whether these are switched-transit or direct-transit countries, the appropriate share of the remuneration paid by the Administration of country A to the Administration of country E must be debited in the statement of revenue divided between the Administrations of countries A and B.

B.2.3.2 The Administration of country E fixes the price to be paid by the Administration of country A per unit of traffic between the transit exchange E to country B; the Administration of country E must take into consideration:

- its expenses on its own territory;
- the expenses incurred for the direct-transit circuits E-B through country D;
- the expenses for switched transit after overflow in E through the transit exchange in country F.

B.2.3.2.1 In determining expenses in its own territory, E should include expenses for the circuits A-E from the frontier AE to transit exchange E as well as its switching expenses.

B.2.3.2.2 The Administration of country E must also take into account the expenses relating to:

- the section of international circuits provided by the Administration of country B;
- the international exchange and the national extensions in that country.

These expenses may be:

- counted as part of the accounting revenue shared between the Administrations of country A and country B; or
- be included in the price fixed by country E, if it is more convenient or even necessary for that country to fix a price (normally one-half) for facilities made available in B. In this case A should, in principle, remunerate B with the appropriate share (normally one-half) of the gross revenue from this stream of traffic, minus:
 - i) *the appropriate share* (normally one-half) of the amount due from A to E for the transit of E and D or F, and minus
 - ii) *the whole* of the amount due from A to E for the destination country B.

In practice, it may be difficult for A to obtain the necessary information to split the total remuneration due to E into two parts i) and ii) above because E will have quoted a combined rate for the two routes via D and F and the amounts due to B for these two routes may be different; A will not know the distribution of traffic between the routes via D and F. In such cases, the Administrations of A and B may agree not to take into account the distribution of the traffic on the routes E-D-B and E-F-B and make separate arrangements to ensure the fair division of costs between A and B. For example B may agree with A on an average share for the extension on its territory of the routes D-B and F-B. These shares would be deducted from the gross revenue for the part of the traffic transited via routes E-D-B and E-F-B. Alternatively, they may agree to dispense with the accounting revenue division procedure for this stream of traffic and account for it in accordance with § B.4 below.

B.3 *Case 2 – Use of traffic-unit and/or flat-rate price procedure for all traffic*

B.3.1 *Traffic on direct circuits*

B.3.1.1 *Remuneration to the Administrations of direct-transit countries*

The Administration of the country of origin A remunerates each of the Administrations of countries C and D for use of the sections of circuit A-B. Remuneration is based on a flat-rate price per circuit and is calculated according to the (crowflight) length of the circuit sections on the territories of countries C and D.

B.3.1.2 *Remuneration of the country of destination*

The Administration of the country of origin A should remunerate the Administration of country B:

- for the circuit section A-B provided by the Administration of country B;
- for the use of the international exchange in B;
- for the national extensions in country B.

Depending on the agreements concluded by the Administrations of countries A and B, the remuneration is based:

- a) either on a flat-rate price per circuit, or
- b) on the traffic-unit price.

B.3.1.3 *One-way operating and both-way operating*

In the case of one-way circuits the remuneration of an international circuit by the Administration of a country of origin presents no difficulty. In the case of both-way circuits, the Administrations of the terminal countries A and B decide how the costs of the international circuits are to be divided after taking account of the outgoing traffic of each.

B.3.2 *Switched-transit traffic handled by the exchange in E*

B.3.2.1 *Remuneration for circuits in the group A-E*

With respect to the traffic transiting the transit exchange in country E, the Administration of country A first of all remunerates the Administration of country E for the use of the section of the circuit A-E provided by the Administration of country E.

This remuneration is normally independent of the traffic in transit to country B, because the circuits A-E are used not only for traffic in transit to country B but also for terminal traffic from country A to country E. This is the case when the remuneration paid by the Administrations of countries A and E for terminal traffic between them is based on the flat-rate price procedure.

When the remuneration paid by the Administrations of countries A and E for terminal traffic between them is based on the traffic-unit price procedure, i.e. on the measurement of all traffic routed over the circuits A-E, a meter could be used to measure the whole of the traffic sent from A to E on the circuits A-E, regardless of the destination (i.e. regardless of the country codes); these measurements therefore would include traffic from A to B and A to F.

Alternatively, separate meters could be used in country A to measure the traffic destined for each of the countries B, E and F; this might facilitate the accounting for each of these streams of traffic.

B.3.2.2 *Remuneration for transit routing by the exchange E*

The Administration of country A remunerates the Administration of country E for routing calls to B beyond the transit exchange in E on the basis of the number of traffic units from A to B passing through the international transit exchange in E. This number of traffic units might be measured by a special meter, reserved for calls to country B, which could be placed in country A on the circuits A-E. The meter is activated only when the country code of country B is sent by the outgoing register of the exchange in country A.

The Administration of country E is credited by the Administration of country A for the transit traffic sent via its international transit exchange to country B on behalf of country A and is entirely responsible for remunerating the Administrations of countries D, F and B. This remuneration is included in the remuneration it makes for the entire traffic emanating from E and sent to country B, since the national traffic originating in E and the transit traffic originating in other countries is consolidated for accounting purposes.

In principle, the remuneration of the Administration of country B by the Administration of country E should comprise not only remuneration for use of the international circuit sections provided by the Administration of country B and remuneration for use of facilities in the international transit exchange in country B, but also any remuneration for use of national extensions in country B.

If the remuneration for the circuits in section A-E (which carry both terminal and transit traffic) is made on a flat-rate price basis which includes remuneration for the international exchange and the national extension, the transit traffic proportion of the amounts so included should be taken into account in calculating the remuneration to be paid by the Administration of country A to the Administration of country E for the traffic which is switched at E and routed to country B.

B.4 *Case 3 — Use of the accounting revenue division procedure for the direct traffic between A and B and the traffic-unit price procedure for the traffic switched via country E*

B.4.1 This case represents the situation where countries A and B wish to use the accounting revenue division procedure for the traffic carried over the direct A-B circuits and the traffic-unit price procedure for remuneration of the destination country for traffic switched through country E.

B.4.2 *Traffic on direct circuits*

By way of meters or statistical assessments the Administration of country A will identify that traffic sent on the direct circuits A-B, and account for that traffic on the basis of the accounting revenue division procedure as in Case 1 under § B.2.1 above.

B.4.3 *Switched-transit traffic handled by the exchange in E*

B.4.3.1 By way of meters or statistical assessments the Administration of country A will identify the traffic sent on the switched-transit route via country E, and account for that traffic on the basis of the traffic-unit price procedure as in Case 2 under § B.3.2 above.

B.4.3.2 The traffic-unit price quoted by country E in this case will include an amount for the facilities in country B. It should in fact be the same price as quoted in Case 2.

ANNEX C

(to Recommendation D.150)

Traffic measurement conversions from seizures or erlangs into conversation time for temporary alternative routes

C.1 Conversion from seizure measurements

For each hour the temporary alternative route is being used, the originating international Network Management Centre should record the number of seizures of the circuits which make up the route and convert this number to conversation time in minutes by the following formula:

$$\text{Conversation time} = (\text{Seizures}) \times (\text{Answer/seizure ratio}) \times (\text{Average call duration}).$$

The average call duration should be based on historical records and agreed in advance.

The answer/seizure ratio should be also based on historical records or, if available, on measurements taken during the period the route was used.

C.2 Conversion from erlang measurements

For each hour the temporary alternative route is being used, the originating international Network Management Centre should record the number of erlangs on the route and convert this number to conversation time by the following formula:

$$\text{Conversation time} = (\text{Erlangs}) \times 60 \times (\text{Efficiency ratio}).$$

The efficiency ratio is the ratio of conversation time to occupied time in minutes. The difference between the two is call set-up time and occupied time for unsuccessful calls. It should be based on historical measurements and agreed in advance.

References

- [1] CCITT Recommendation *Chargeable duration of calls*, Rec. E.230.
- [2] CCITT Recommendation *Basic technical problems concerning the measurement and recording of call durations*, Rec. E.260.
- [3] CCITT Recommendation *The international telephone routing plan*, Rec. E.171.

Recommendation D.151

OLD SYSTEM FOR ACCOUNTING IN INTERNATIONAL TELEPHONY

(Geneva, 1972)

1 Introduction

The new system for accounting (Recommendation D.150) might not always be applied in some relations especially where radiotelephone circuits are used and, in these cases, the following provisions may be adapted appropriately.

When Recommendation D.150 is not applied, it is recommended that the accounting rate for intercontinental calls, expressed in units of charged time, should be divided in accordance with the principles set out below.

2 Calls over direct intercontinental circuits

The accounting rate for calls over direct circuits should in principle be divided equally between the terminal Administrations unless other arrangements are agreed among the Administrations concerned ¹⁾.

3 Calls over a chain of intercontinental circuits

For calls over a chain of intercontinental circuits, the accounting rate should not exceed the sum of the accounting rates for calls over each of the individual circuits. However, the Administrations concerned may agree to fix a total accounting rate less than the sum of the individual accounting rates.

The total accounting rate should in principle be apportioned between the individual circuits in proportion to the accounting rate for direct calls over each individual circuit. The amounts accruing to each circuit should then be divided equally between the Administrations at each end of each circuit unless other arrangements are agreed between them.

4 Calls extended over continental landlines (that is, using them as an intermediate section or as an extension of an intercontinental circuit)

The principles for the determination of the total accounting rate are radiotelephone circuit may agree to forego any share for the terminal land section used on their continent to extend calls over intercontinental circuits.

Administrations concerned in the provision of the landline section should not ask for higher payments than those applying in the case of calls obtained entirely by landline.

The total accounting rate should in principle be divided as follows:

- a) the part of the accounting rate accruing to the intercontinental circuit (or circuits) should be divided between the Administrations at the end of the intercontinental circuit (or circuits) as indicated in §§ 2 and 3 above;
- b) the part of the accounting rate accruing to the continental circuit should be divided in proportion to the amounts required by each Administration concerned in the provision of the continental circuit.

Where the application of the above principles would result in different accounting rates for calls over different routes in a given relation, the Administrations concerned with the operation of the most expensive route (or routes) should agree how the rate should be scaled down to the lower figure. Unless otherwise decided by agreement between the Administrations concerned, this should be done by a proportionate reduction in the hypothetical shares applicable to the most expensive routes.

5 Similar considerations may apply to continental relations especially where radiotelephone circuits are used.

Recommendation D.155

GUIDING PRINCIPLES GOVERNING THE APPORTIONMENT OF ACCOUNTING RATES IN INTERCONTINENTAL TELEPHONE RELATIONS

(Malaga-Torremolinos, 1984; amended at Melbourne, 1988)

The CCITT,

considering

a) that the apportionment of accounting rates in the intercontinental telephone service is already discussed in CCITT Recommendations, for example, Recommendations D.150 and D.151;

b) that, on grounds of fairness, additional guiding principles should be established to ensure that accounting rates between the terminal and any transit Administration concerned should be apportioned in such a way as to take account of the service rendered by each of these Administrations;

¹⁾ Certain large countries claim landline shares in respect of calls extended to places at a considerable distance from the intercontinental circuit terminal, before division of the balance of revenue.

c) that the telecommunication facilities provided by Administrations should be used as profitably as possible;

d) that in accounting between Administrations the principle of remunerating the first transit exchange as described in Recommendation D.150 is gradually being superseded by the concept of a remuneration plan for switched transit,

recommends

General principles

In an intercontinental telephone link, bilateral or multilateral agreements between the Administrations concerned should normally provide for the application of the same accounting rate in both directions of the relation, regardless of the route used.

1 Direct relations

1.1 A direct relation is a relation between two terminal Administrations in which the traffic is routed over direct circuits, i.e. over circuits established for the exclusive use of these terminal Administrations.

1.2 In the case of traffic routed over direct circuits, the accounting rate is in principle shared equally between the Administrations of the terminal countries in respect of each traffic direction. A sharing basis of other than 50/50 may be applied if the intercontinental facilities made available by each Administration in the terminal countries are not essentially equivalent.

1.3 If a direct link exists and the traffic is unilaterally diverted by the Administration of the country of origin to the financial detriment of the country of destination, via a transit route not agreed between the two parties, it is for the Administration of origin to reach agreement with the transit Administration with a view to remunerating it by drawing on the terminal share of the Administration of origin.

If, however, the route which has not been agreed has been chosen for reasons such as failure or impairment of quality of the direct route, or traffic overflow, the Administration of origin will negotiate with the Administrations concerned on the basis of the provisions set out in § 2.2 of this Recommendation.

2 Switched transit relations

2.1 A switched transit relation is a relation between two terminal Administrations in which the traffic is routed by switching through one or more international transit exchanges in one or more countries other than the country of origin and the country of destination.

2.2 The accounting rate in a switched transit relation should normally be divided into two terminal shares and one or more transit shares, as applicable.

The balance of the accounting rate after deduction of the transit shares should be divided equitably, in principle on a 50/50 basis, between the terminal Administrations concerned. A sharing basis of other than 50/50 may be applied if the intercontinental facilities made available by each Administration in the terminal countries are not equivalent.

3 Temporary alternative routes

3.1 A temporary alternative route is an alternative route used for a short period of time to meet high congestion occurring in the international network at either foreseeable or, in the case of unexpected events, unforeseeable periods.

3.2 Transit countries should be remunerated on the basis of facilities provided. The accounting rate should be allocated in two terminal shares and one or more transit shares. The accounting rate, transit shares and divisions of revenue should be those applicable normally for transit routing of switched telephone traffic.

3.3 Where conditions warrant it and all concerned Administrations agree, special accounting arrangements may be implemented. These may include, but are not limited to, waiver of accounting, or a transit charge lower than the normal rate.

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SECTION 12

DRAWING UP AND EXCHANGE OF INTERNATIONAL TELEPHONE AND TELEX ACCOUNTS

Recommendation D.160¹⁾

MODE OF APPLICATION OF THE FLAT-RATE PRICE PROCEDURE SET FORTH IN RECOMMENDATION D.67 AND RECOMMENDATION D.150 FOR REMUNERATION OF FACILITIES MADE AVAILABLE TO THE ADMINISTRATIONS OF OTHER COUNTRIES

(Geneva, 1976; amended at Melbourne, 1988)

1 Introduction

1.1 The general procedures for remuneration of Administrations for facilities made available are given in Recommendations D.67 and D.150. In § 3 of Recommendation D.67 and in § 3 of Recommendation D.150 the principles for remuneration of transit countries by a flat-rate price procedure are given.

1.2 Practical methods for implementation in the case of facilities made available by transit countries are given for the following points:

- procedures for ordering facilities;
- provision of facilities;
- determining the period of remuneration;
- accounting;
- refunds for outages.

Throughout this Recommendation the term “facilities” embraces individual circuits and groups of circuits, e.g. groups (12 circuits), supergroups (60 circuits), etc.

2 Procedures for ordering facilities

2.1 After a preliminary enquiry on availability of facilities, price, etc., the terminal Administrations concerned should place an order with the transit Administration(s) for the facilities required. Such orders may be sent preferably by telex, or otherwise by telegram, or mail.

The following information should be given:

- 1) name of the Administration(s) to which the facilities are made available;
- 2) type of service to be provided (telephone, telegraph, telex, data transmission, etc.);
- 3) facilities to be made available (supergroup, group, telephone or telegraph circuit) and the number of such facilities;

¹⁾ This Recommendation was formerly Recommendation D.152 of the Red Book.

- 4) type of transmission system used (submarine cable, satellite, etc.);
- 5) section of circuit or group (for multilink circuits);
- 6) expected in-service date;
- 7) preliminary technical information, if available, e.g. date and time for testing (to be settled by the technical services);
- 8) the duration required for temporary provision of facilities.

The order for the facilities should be sent well in advance so that the transit Administration(s) will have sufficient time for preparation.

2.2 In case of a change or cancellation of the order, the terminal Administrations should notify the transit Administration(s) of it as promptly as possible by telex, quoting a specific reference to the original order.

3 Provision of facilities

3.1 Confirmation of order

The transit Administration(s), when they have received an order, should give confirmation to the terminal Administrations of the availability of the requested facilities, the price per month or per year, and any other terms and conditions.

3.2 Notification of completion of order

When a telecommunication facility is being made available, the technical services of the Administrations concerned will naturally be in communication with each other as the work progresses. Nevertheless as soon as the facilities ordered are available a formal notification of the date of completion must be sent by the transit Administration(s) to all Administrations concerned.

4 Determining the period of remuneration

4.1 Beginning of the period

4.1.1 In accordance with the spirit of Recommendations D.67 and D.150 payment is due when the facilities are made available by the transit Administrations, irrespective of the date on which the terminal Administrations bring the facilities into service.

In cases where the facilities are made available in advance of the ordered date, payment is based on the order date.

4.1.2 For *intercontinental* facilities, payment would be due from the day following that on which the facilities are made available to the terminal Administrations.

Thus for example, a request for the lease of an intercontinental facility for 1 July, would be handled as follows:

<i>Date of availability:</i> 24 June	<i>Charging:</i> from 2 July
<i>Date of availability:</i> 10 July	<i>Charging:</i> from 11 July

4.1.3 For *continental* facilities, a simplified method should be utilized for remuneration.

For the month during which the circuit(s) or the group(s) is(are) made available, terminal Administrations should remunerate the transit Administrations which made their facilities available as indicated below:

- for the whole month, if the facilities are made available between the 1st and the 15th;
- from the 1st of the following month if the facilities are made available between the 16th and the end of the calendar month.

However, within continents bilateral agreements may be made to apply the intercontinental method.

4.1.4 Nevertheless, in special circumstances the Administrations concerned may, by special agreement and in keeping with the basic principles, decide in the best interests of each party concerned on the procedure to be followed in selecting the date on which charging should start. Examples of cases where this could apply are:

i) *When there are several transit sections*

If, for example, two transit Administrations C and D do not complete their arrangements for making available the facilities requested by terminal Administrations A and B on the same date, it would be reasonable to select the date on which the entire transit section becomes operational.

ii) *Where the circuit orders relate to major projects, e.g. the opening of a new international exchange*

It is recognized that technical services will have a large circuit provision programme to meet which may extend over a considerable period before the new facility comes into service. The Administrations concerned may agree to the period for remuneration commencing at some later date after the facilities have been furnished.

4.2 *Determination of the duration of the period of remuneration*

The period during which facilities are made available should be determined as follows:

4.2.1 *Facilities made available on a permanent basis – intercontinental*

In calculating the period during which facilities are made available, one month shall mean one calendar month. Moreover, the day on which the facility is made available shall not be reckoned, whereas the day on which the facility is withdrawn shall be reckoned as a full day. Thus, a period of availability covering one month or more is calculated as follows:

- a) count the number of days beginning on the day following the day on which the facility was made available until the end of the month;
- b) thereafter count the number of full calendar months, if any; and
- c) count the number of service days in the last month, including the day on which the facility was withdrawn.

As regards charging:

- full calendar months are subject to the monthly rental;
- fractions of a month shall be subject to a daily charge equal to 1/30th of the monthly rental.

Examples are given in Table 1/D.160.

4.2.2 *Facilities made available on a permanent basis – continental*

In calculating the period during which facilities are made available, one month shall mean one calendar month. When the facilities are made available between the 1st and 15th of the month, remuneration shall be for the whole month. When the facilities are made available between the 16th and the end of the calendar month, remuneration shall commence from the 1st of the following month.

When the facilities are withdrawn between the 1st and 15th of the month, remuneration shall be made to the end of the previous month. When withdrawn between the 16th and the end of the calendar month, remuneration shall be made for the whole month.

4.2.3 *Facilities made available on a temporary basis*

By agreement between the Administrations concerned, it is possible to make facilities available for a period of less than one month.

In calculating the period during which facilities are made available on a temporary basis, one day shall mean a period of 24 consecutive hours.

The period during which a facility is made available should be calculated in multiples of 24 hours, the period starting from the time at which the facility is made available until the time at which it is withdrawn. If the number of days thus obtained contains a fraction of 24 hours, it should be rounded up to the next whole number.

Examples:

Circuit made available on 1 June, at 09.00 hours, cleared on 5 June at 09.00 hours:

4 × 24 hours, i.e. 4 chargeable days.

Circuits made available on 1 June, at 09.00 hours, cleared on 5 June at 11.00 hours:

(4 days + 2/24 day) i.e. 5 chargeable days.

The remuneration shall be equal to 1/30th of the monthly rental for each day of the period of availability²⁾.

TABLE 1/D.160

Duration from the day of availability until the day of withdrawal	Chargeable time	Charge
30 October-15 December 30 October not counted 31 October = 1 day November = 1 month 1-15 December = 15 days	1 month 16 days	1 monthly rental + 16/30th of this rental
30 November-15 January 30 November not counted December = 1 month 1-15 January = 15 days	1 month 15 days	1 monthly rental + 15/30th of this rental
4 January-10 February 4 January not counted 5-31 January = 27 days 1-10 February = 10 days	37 days	37/30th of monthly rental

4.3 *End of period of availability*

The period during which facilities are made available on a *permanent basis* will be terminated by the advice of the terminal Administrations. The notice of cancellation should normally be given to the transit Administration(s) one month in advance of the effective date of termination.

However, the period of availability for facilities provided on a *temporary basis* will end on the date and time agreed upon in advance.

5 **Accounting**

5.1 In the absence of a specific agreement and notwithstanding the procedure described in Recommendation D.170, accounts are drawn up separately where remuneration is made on a flat-rate basis. A quarterly statement showing the overall balance for the period to which the statement applies is drawn up by the creditor Administration and two copies are sent to the debtor Administration which, after verification, returns one copy with its notice of acceptance.

5.2 However, an agreement may be made between the Administrations concerned for the terminal Administrations to credit the transit Administration(s) with the sums due to them, through the ordinary monthly accounts. In special cases, only one of the terminal Administrations may credit the transit Administration(s) with the total remuneration due by means of regular monthly accounts and debit the other terminal Administration.

5.3 There may also be specific cases, e.g. facilities made available on a temporary basis, provision of mutual aid facilities, where the Administrations concerned may agree that the country providing the facility should debit the country of origin.

²⁾ In order to simplify accounting methods and to stimulate mutual assistance among Administrations, the administrative and technical costs of establishing temporary circuits are not included. By special agreements between Administrations, these costs may, however, be recovered through a surcharge or installation charge equivalent to 2/30ths of the monthly rental.

6 Refunds for outages

6.1 *Need for rapid restoration of service*

When an outage occurs, the Administrations providing facilities should make every effort to restore interrupted facilities, or to make available at no extra charge the same facilities on an alternative routing, either through their own territory or through third countries.

6.2 *Intercontinental outages*

6.2.1 Automatic refunds will not be made. However, when an outage in a transit country exceeds 24 hours and the Administration of that country has not restored the facilities, the terminal Administration is entitled to claim a refund, particularly if it had to provide substitute facilities *at its own expense*.

This refund is calculated on the basis of 1/30th of the monthly rental per day or part of a day for the facilities which were temporarily interrupted.

6.2.2 When a transit Administration provides one or more intercontinental sections and an outage occurs in one of them, it shall refund for all the facilities it provides (including any continental section) and not solely for the section on which the failure occurred.

6.2.3 When several countries are involved in making transit facilities available, only the Administration of the transit country in which the outage occurred shall be liable to pay a refund in the conditions set out above. If an outage occurs simultaneously in more than one country, the Administrations of those countries will be liable if a refund is claimed.

6.3 *Continental outages*

There will be no refunds for outages.

However, within continents, bilateral agreements may be made to apply the intercontinental method.

Recommendation D.170

MONTHLY TELEPHONE AND TELEX ACCOUNTS

1 General

1.1 The following arrangements are recommended for the drawing up, exchange and acceptance of monthly telephone and telex accounts between Administrations.

1.2 Each Administration of origin (and of transit where appropriate, e.g. in the case of § 3.1.4 below) shall prepare and forward monthly accounts. These should be drawn up separately on forms of the types shown below as specimens for:

- a) telephone traffic proper — Forms 1 or 2 (see Annex A);
- b) sound- and television-programme and phototelegraph transmissions — Forms 1 or 2 (see Annex A) suitably adapted;
- c) telex traffic — Forms 1 or 2 (see Annex B).

1.3 The choice of form to be used for the accounts should be decided by the Administration which prepares the accounts, after consultation with the other Administration concerned. It may be convenient to use separate forms for originated and transit traffic.

1.4 The traffic details which must be included in the account are only those which are necessary for the purpose of international accounting. However, by agreement between the Administrations concerned, traffic information which is not essential for the accounts (e.g. the number of calls where this does not affect the accounting) may be included on the account forms.

1.5 In accordance with the *Telegraph and Telephone Regulations* [1], monthly accounts should be sent as promptly as possible but in any case before the end of the third month following that to which they relate.

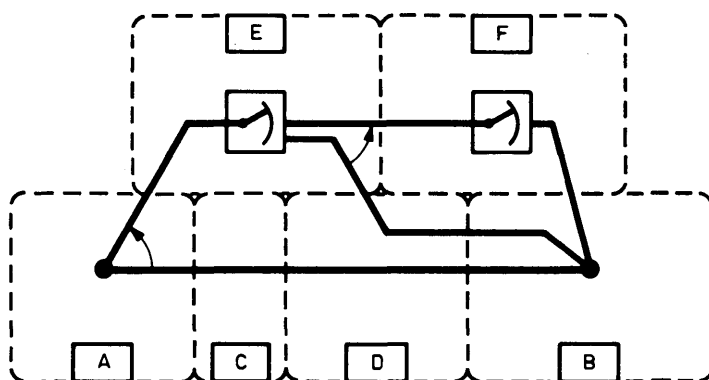
2 Accounts in international relations where Recommendations D.67 and D.150 apply

The preparation of the monthly telephone accounts shall be as follows, using as an example the diagram in Figure 1/D.170 which is a reproduction from Annex B to Recommendation D.150. This diagram relates to the traffic from terminals A to B.

2.1 *When the accounting revenue division procedure is applied for accounting between A and B*

2.1.1 *For traffic on the direct route, A to B*

A shall prepare and forward to B a monthly account crediting B with one-half of the net revenue (accounting revenue), after deduction of the amounts due from A to C and D. A shall also account with C and D, either by including their remuneration in the monthly accounts for traffic from A which terminates in each of these countries, or by sending them a copy of the monthly account prepared for B, showing in it the amounts due to C and D.



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FIGURE 1/D.170

Typical pattern of circuit interconnections between various countries

2.1.2 *For traffic on the route, A to B via E*

There are two possibilities:

1) *When the rate quoted by E includes an amount due to B*

A shall prepare and forward to E a monthly account crediting E for A's traffic to B via E at the rate quoted by E to cover the transit of E and of D or F and also for the destination country B.

In principle A should include in its monthly account to B an amount crediting B with the appropriate share (normally one-half) of the gross revenue from this stream of traffic minus:

- a) the appropriate share, (normally one-half) of the amount due from A to E for the transit of E (and of D or F) and
- b) the whole of the amount due from A to E for the destination country B.

(For a better understanding of these procedures, see Recommendation D.150 and Annex B thereto, in particular.)

2) *When the rate quoted by E does not include an amount due to B*

A shall prepare and forward to E a monthly account crediting E for A's traffic to B via E at the rate quoted by E to cover the transit of E and of D or F.

A shall also include in its monthly account to B an amount crediting B with the appropriate share (normally one-half) of the net revenue after deduction of the amounts due (normally one-half) from A to E (the amount covering the transit by E and D or F regardless of the method of repayment: flat-rate or traffic-unit price procedure).

2.2 *When the accounting revenue division procedure is not applied for the accounting between A and B*

2.2.1 *For traffic on the direct route A to B*

A shall prepare and forward to B, C and D respectively a monthly account crediting the amounts due from A to each of them under whatever accounting procedure has been agreed with each of them (i.e. either the traffic-unit price or the flat-rate price procedure).

If the country of destination is remunerated under the traffic-unit price procedure, the flat-rate amounts for direct-transit countries should be divided in appropriate shares (normally equal) between the two terminal countries and the traffic-unit per minute price for passage through those transit countries should be divided in the same proportion between the two terminal countries. The application of this rule is necessary if the traffic accounting between the two terminal countries is to be fair, as this traffic-unit per minute price should be used by each terminal Administration as a factor to be multiplied by the volume of outgoing traffic, which may not be the same in the two directions. Thus A will credit to B the traffic-unit price of B plus (normally one-half) of the traffic-unit price attributable to the transit of C and D.

2.2.2 *For traffic on the route A to B via E*

A shall prepare and forward to E a monthly account crediting E for all A's traffic to B via E, at the rate quoted by E to cover both:

- a) the transit of E and of D or F respectively,
- b) the remuneration due to B.

A shall not include this traffic in its monthly account with B.

2.3 *Accounting to be done by E in the cases described in §§ 2.1.2 and 2.2.2*

E shall prepare and forward to D, F and B respectively a monthly account crediting to each of them the amounts due to them in respect of traffic originating in E, and shall include in these accounts the amounts due to them for traffic from A (and any other countries transited by E). However, if the method of remuneration from E to either D, F or B is flat-rate price procedure, then E shall in principle retain the amount received from A (or any other countries upstream from E) relating to the section through the country being remunerated by the flat-rate price procedure.

3 **Preparation of accounts for relations to which Recommendations D.67 and D.150 do not apply**

3.1 The following provisions apply to certain international relations to which Recommendations D.67 and D.150 do not apply.

3.1.1 In direct relations the Administration of origin shall prepare and send a monthly account to the Administration of destination.

3.1.2 Where transit relations within the continent of origin are concerned, the Administration of origin shall prepare and send the monthly account to the Administration controlling the intercontinental circuit in the outgoing direction. At the same time a copy of the account shall be sent to each of the Administrations of transit countries concerned. The account shall show the share accruing to each of the Administrations of transit countries and in addition, in one amount, the share due to the Administration controlling the intercontinental circuit in the outgoing direction and the Administrations beyond its territory.

3.1.3 The Administration controlling the intercontinental circuit in the outgoing direction shall prepare and forward a monthly account, both for traffic which originates in its own country, and for that which passes in transit through its own territory, showing in one amount the share due to the Administration operating the other end of the intercontinental circuit, and, where applicable, the shares accruing to the Administrations beyond its territory.

3.1.4 The Administration operating the other end of the intercontinental circuit shall, where applicable, prepare a new account for each Administration concerned beyond its territory showing the share due to each.

3.2 In continental relations, except those covered by § 2.1 above, the Administration of origin shall prepare and send a monthly account to the Administration of destination and, where appropriate, a copy to each of the transit Administrations concerned showing the amount due to each of these Administrations.

4 General remarks on the preparation of accounts

In the preparation of monthly accounts, the following should be taken into account:

4.1 Separate entries should be made in respect of traffic sent over secondary routes.

4.2 The monthly account should include all special charges for telephone calls and, except when the traffic-unit price procedure as in Recommendation D.150 is applied or where there is agreement to the contrary, these special charges should be shared between the Administrations concerned in the same proportion as the charges for calls.

4.3 The collection charge for a collect telephone call is the one applicable in the country of destination of the call.

4.3.1 The Administration of the country of destination should, unless specially agreed otherwise, regard the collect telephone call as an outgoing call for the purpose of international accounting.

4.3.2 Collect telephone calls should be included in the monthly account by the billing Administration. The total number of messages, of minutes and the total settlement amounts for calls should be listed separately on the settlement statement. Settlement arrangements are as shown in Recommendation D.178.

4.3.3 The procedure described above could be applied to credit card calls subject to bilateral agreement between the Administrations concerned.

4.4 The rules for the preparation and submission of accounts for phototelegraph transmissions shall be the same as for telephone traffic proper.

4.5 The rules for the preparation and submission of accounts for sound- and television-programme transmissions shall be the same as for telephone traffic proper, except that the accounts shall be prepared by the Administration responsible for collecting the charge. Unless otherwise agreed these accounts should be accompanied by supplementary documents in which each sound- or television-programme transmission shall be separately identifiable.

4.6 In relations in which a relatively large volume of transit traffic is routed through one (or more) transit country(ies), and in particular in relations in which direct circuits exist between two terminal Administrations, the terminal Administration of arrival may, on occasion, request the terminal Administration of origin to send it directly, for information, a copy of the monthly account (or an extract from this account) relating to the transit traffic routes through a transit Administration, in order to know without delay the volume of the monthly traffic thus routed in transit.

4.7 Traffic representing test or service telex calls, expressed in minutes, should be deducted from the international accounts. If this deduction cannot be made directly (and this is especially the case with the method described under § 2.3.1.2 in Recommendation D.61), the Administrations concerned should decide between themselves, after taking sample metering if necessary, on the percentage of such traffic to be deducted from the traffic measured.

When free calls are allowed (for example during international telecommunication conferences), deductions may be made in the international accounts by the Administration of the country on whose territory a conference is held.

5 Supply of directories

5.1 Accounting arrangements concerning the paid supply of directories shall be established in the following manner.

5.2 At least once a year, and preferably at the end of the current period of the directories concerned, each Administration that has supplied to another Administration directories, in respect of which payment is due, shall draw up a special account for the amounts due to it for such directory supplies, including postage and/or freight, and send it to the latter Administration for settlement. These amounts may be included in the monthly accounts.

5.3 Except where the Administrations have agreed otherwise, no accounts shall be established for the paid supply of directories unless the total number delivered to an Administration for service requirements and for sale exceeds 50. When the number is 50 or less, all directories shall be delivered free of charge.

6 Queries relating to monthly accounts

In the absence of a specific agreement, it is recommended that queries relating to monthly accounts should not be made unless the differences involved exceed those shown in Table 1/D.170.

TABLE 1/D.170

	Amount of the creditor's account	Difference exceeding
Account in SDRs	less than 3000 SDRs	30 SDRs
	from 3000 to 100 000 SDRs	1% of the total of the creditor's account
	more than 100 000 SDRs	1000 SDRs
Accounts in gold francs	less than 10 000 gold francs	100 gold francs
	from 10 000 to 300 000 gold francs	1% of the total of the creditor's account
	more than 300 000 gold francs	3000 gold francs

These limits shall apply separately to each of Forms 1 and 2 and separately also to:

- a) telephone traffic proper,
- b) sound- and television-programme and phototelegraph transmissions,
- c) telex traffic.

Queries shall not be further pursued once the difference involved no longer exceeds these limits.

A query may be justified, however, where a difference that does not qualify for query in an individual month appears to recur in subsequent months. In the case of a difference of opinion regarding the chargeable duration of a call or calls, the opinion of the Administration of origin shall prevail. Nevertheless, each Administration shall have the right to advise the Administration of origin of obvious errors in the monthly account.

7 Adjustments and refunds

For the accounting procedure in the case of adjustments and refunds see Recommendation D.171 (telephone) and Recommendation D.177 (telex).

8 Checks of accounting data

Data relating to Forms 1 or 2 in Annexes A and B can be subject to sampling checks if the Administration of destination considers it desirable.

These traffic samples will be taken as follows:

On a given day the Administration of destination has observations made of a number of conversations chosen at random. For each of these, a determination is made of the route concerned, the time, the called subscriber's number, and on occasion the identity of the caller. (The first three factors can be obtained in semiautomatic service as well as in manual service.) Before noon on the following day the Administration of destination asks the Administration of origin to indicate the chargeable duration shown on the tickets for each of these calls.

An accounting check may also be made. In particular cases, where justified by the volume of traffic and by special agreement between Administrations, an official of the Administration receiving the account can visit the Administration which draws up the account, to see how the accounts are drawn up and to verify that the details of these calculations are as accurate as possible.

9 Keeping of vouchers

The vouchers which have served for the establishment of accounts should be preserved until those accounts have been settled, or in any case for at least six months.

10 Settlements of accounts

10.1 Accounts will be settled in accordance with Articles 8 and 11 respectively and Appendix 1 of the *Telegraph and Telephone Regulations* [1].

ANNEX A

(to Recommendation D.170)

Monthly telephone account

FORM 1

Traffic from..... To..... For..... 19.....

Month	Item	Number of minutes	Credit of B		Credit of C		Credit of D	
			Share of rate per minute	Total	Share of rate per minute	Total	Share of rate per minute	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		1405	2.40	3372.00	1.40	1967.00	1.20	1686.00
Totals			—		—		—	

Explanatory notes for Form 1

1. In the heading, the Administration initiating the account in respect of transit traffic should insert the word "transiting" in place of "from".
2. If the account does not relate strictly to a calendar month (e.g. because of the arrangements for reading traffic meters in the automatic service), the period covered by the account should be shown.
3. Column (1), "Month" should contain the calendar month to which the data relates (e.g. in the case of transit traffic particularly, this would usually be earlier than the month of the account).
4. The form should have a "Credit of" column for each country to be remunerated.
5. Column (2), "Item" should be used and possibly sub-divided to specify any distinction required for international accounting purposes between zones of origin or destination, number of calls or call classification, special charges, etc. It may also be used to draw notice to the use of column (3) for recording number of calls or special charges rather than number of minutes.
6. Column (3), "Number of minutes", may be used to record either *a*) minutes of conversation time or *b*) minutes of charged time, according to the accounting procedure used. When minutes of charged time are recorded, any special charges equal to the charge for one minute or multiples thereof may be included.
7. Columns (4), (6) and (8), "Share of rate per minute" should show the amount for one minute payable to the Administration concerned.
8. Columns (5), (7) and (9), the "Total" should be obtained by multiplying the amount in columns (4), (6) and (8) respectively by the number of minutes in column (3).

FORM 2

Traffic from..... To..... For..... 19.....

Month	From	To	Classification	Number of		Cross accounting revenue	Share of rate per minute of call	Amount due to the "to" Administration
				Calls	Minutes			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Personal fee	100	—	450.00	2.25	225.00
			Full rate		400	800.00	1.0	400.00
Totals								

Explanatory notes for Form 2

1. In the heading, the name of the Administration initiating the account should be shown as the "From" country and the name of the Administration to whom the account is directed should be shown as the "To" Administration.
2. If the account does not relate strictly to a calendar month (e.g. because of the arrangements for reading traffic meters in the automatic service), the period covered by the account should be shown.
3. Column (1), "Month" should contain the calendar month to which the data relates.
4. Columns (2) and (3). These should contain a separate entry for each different combination of "from" Administration (or area), "to" Administration (or area) and call classification. Terminating and transit traffic should be grouped separately, and the latter should be further sub-divided between direct transit and switched transit if different accounting rates apply to each of these categories.
5. Column (4), "Classification" should contain the applicable classification used to determine the accounting rate. The terms used in this column may be abbreviated; e.g. "Personal fee" to "PF" or "*taxes afférentes aux conversations personnelles*" to "TCP".
6. Column (5), "Number of calls" may be used to show the number of calls where this is necessary for international accounting purposes and may also be used to report the number of special charges or other individual charge items that may be necessary.
7. Column (6), "Number of minutes", may be used to record either *a)* minutes of conversation time or *b)* minutes of charged time, according to the accounting procedure used. When minutes of charged time are recorded, any special charges equal to the charge for one minute or multiples thereof may be included.
8. Column (7), "Gross accounting revenue" should show the gross amount available for distribution where reporting of such data is agreed between Administrations concerned.
9. Column (8), "Share of rate per minute of call" indicates the share due to the "to" Administration and, where applicable, the Administrations beyond.
10. Column (9), "Amount due to the "to" Administration" should include the amount due to the "to" Administration and, where transit traffic is reported, amounts due to other Administrations for traffic routes to countries beyond the "to" Administrations.

ANNEX B

(to Recommendation D.170)

Monthly telex account

FORM 1

Traffic from..... To..... For..... 19.....

Month	Item	Number of minutes	Credit of B		Credit of C		Credit of D	
			Share of rate per minute	Total	Share of rate per minute	Total	Share of rate per minute	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		1405	2.40	3372.00	1.40	1967.00	1.20	1686.00
Totals			—		—		—	

Explanatory notes for Form 1

1. In the heading, the Administration initiating the account in respect of transit traffic should insert the word "transiting" in place of "from".
2. If the account does not relate strictly to a calendar month (e.g. because of the arrangements for reading traffic meters in the automatic service), the period covered by the account should be shown.
3. Column (1), "Month" should contain the calendar month to which the data relates (e.g. in the case of transit traffic particularly, this would usually be earlier than the month of the account).
4. The form should have a "Credit of" column for each country to be remunerated.
5. Column (2), "Item" should be used and possibly sub-divided to specify any distinction required for international accounting purposes, number of calls or call classification, etc.
6. Columns (4), (6) and (8), "Share of rate per minute" should show the amount for one minute payable to the Administration concerned.
7. Columns (5), (7) and (9), the "Total" should be obtained by multiplying the amount in columns (4), (6) and (8) respectively by the number of minutes in column (3).

FORM 2

Account from..... for telex traffic sent to

for 19....

Month	From	To	Number of		Share of rate per minute	Amount due
			Calls	Minutes		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			37	100	4.5	450.00
			—	400	1.5	600.00

Explanatory notes for Form 2

1. In the heading, the name of the Administration initiating the account should be shown as the “from” country and the name of the Administration to whom the account is directed should be shown as the “to” Administration.
2. If the account does not relate strictly to a calendar month (e.g. because of the arrangements for reading traffic meters in the automatic service), the period covered by the account should be shown.
3. Column (1), “Month” should contain the calendar month to which the data relates.
4. Columns (2) and (3). These should contain a separate entry for each different combination of “from” and “to” Administration. Terminating and transit traffic should be grouped separately, and the latter should be further sub-divided between direct transit and switched transit if different accounting rates apply to each of these categories.
5. Column (4), “Number of calls” may be used to show the number of calls where this is necessary for international accounting purposes.
6. Column (6), “Share of rate per minute”, indicates the share due to the “to” Administration and, where applicable, the Administrations beyond.
7. Column (7), “Amount due” (to the “to” Administration), should include the amount due to that Administration, and for transit traffic also for the amounts due to Administrations beyond.

References

- [1] *Final Acts of the World Administrative Telegraph and Telephone Conference, Telegraph Regulations, Telephone Regulations*, ITU, Geneva, 1973. (See also the Preliminary Note No. 3, page XIV.)

Recommendation D.171

ADJUSTMENTS AND REFUNDS IN THE INTERNATIONAL TELEPHONE SERVICE

The CCITT recommends that the following procedure for adjustments and refunds should be used in the international telephone service.

1 Any complaint made after the completion of an international telephone call which cannot be dealt with by operators shall be investigated by the international exchange of origin. According to circumstances, the other international exchange or exchanges concerned shall communicate direct to the international exchange of origin the information which may be necessary for the inquiry.

2 When a refund is granted, the international exchange responsible for charging is entitled to modify the entries in the documents used for the establishment of international accounts, if necessary after agreement with the other international exchanges concerned.

3 Any refunds granted to a subscriber which it has not been possible to deduct from the international accounts before they were sent out shall, in principle, be borne by the Administration which levied the charge for the call in question. However, international accounts may be adjusted on condition that an agreement is reached between the Administrations concerned.

4 When an Administration is able to show that a collect call has been connected, by a distant operator, to a payphone station equipped with payphone recognition tone, and as a result is not able to raise a charge for that call, that Administration can, on the basis of bilateral agreements, exclude that call from the international accounts. Details of all such calls should be forwarded to the Administration responsible for the call being set up.

Recommendation D.172

ACCOUNTING FOR CALLS CIRCULATED OVER INTERNATIONAL ROUTES FOR WHICH ACCOUNTING RATES HAVE NOT BEEN ESTABLISHED

(Geneva, 1972)

Normally, when calls are circulated over international routes for which accounting rates have not been established,

- these calls shall be treated in the international accounts as if they had been sent via the primary route, or
- if no relation has been opened between two terminal countries, they shall not be included in the international accounts, provided that the chargeable duration of such calls does not exceed:
 - 25 minutes of call per month in an intercontinental relation,
 - 100 minutes of call per month in a continental relation.

The Administration of origin shall be responsible for keeping check of the total duration of such calls and for arranging to remunerate the Administration concerned if the duration exceeds the above-mentioned limits.

However, if the amount of such traffic becomes significant or if, for any other reasons, any one of the Administrations involved wishes to have a proper accounting rate established, all the Administrations concerned should consult together and establish the accounting rate and divisions thereof to be used for such traffic.

Recommendation D.173

DEFAULTING SUBSCRIBERS

1 It is in the interest of Administrations to know of telephone subscribers coming from a country where they have not settled their telephone accounts, and also to render each other assistance in the recovery of amounts due from such debtors.

2 In view of the differences in the law in different countries, it would be very difficult to regulate this assistance.

3 It is therefore recommended that when a telephone subscriber has left the country in which he was a subscriber without settling his telephone account, and has taken up residence in another country which is known, the Administration of the country of origin should advise the Administration in the other country and ask this latter, on a reciprocal basis, to take such steps or make such arrangements as it thinks fit to obtain payment of the accounts outstanding.

4 The minimum amount of unpaid telephone bills, for the recovery of which the assistance of another Administration is requested, should be 100 gold francs or 32.67 SDR. Any such request for assistance should be made within two years from the date on which the unpaid telephone bill was submitted.

One Administration may appeal to another in special cases even when the amount owed is less than 100 gold francs or 32.67 SDR; for example, if a punishable offence is involved and it is considered necessary for reasons of principle to recover the debt.

Recommendation D.174

CONVENTIONAL TRANSMISSION OF INFORMATION NECESSARY FOR BILLING AND ACCOUNTING REGARDING COLLECT AND CREDIT CARD CALLS

(Geneva, 1972)

1 Information regarding collect and credit card calls, where the chargeable duration is determined in the outgoing country, should be transmitted promptly to the Administration which will be collecting the charges ideally within 10 days, but in any event within one month after the call took place, unless otherwise bilaterally arranged.

2 The method of transmitting this information (telecommunication or postal media) should be agreed between the Administrations concerned.

3 Where Administrations have not agreed on the exchange of tickets (or photocopies) and lists are used in order to facilitate prompt billing and establishment of accounts, the following minimum information should be transmitted:

- a) date of establishment of the call;
- b) calling party national number;
- c) called party national number;
- d) type (collect, credit card or third number paying);
- e) credit card number or billed number;
- f) basis of charging (full, reduced, personal or station);
- g) chargeable duration (minutes);
- h) connect hour.

4 By bilateral agreement between Administrations, certain items in § 3 above may be omitted or additional items included.

5 For uniformity it would be advantageous that the items be transmitted in the order listed in § 3 above.

Recommendation D.176

TRANSMISSION IN ENCODED FORM OF TELEPHONE REVERSED CHARGE¹⁾ BILLING AND ACCOUNTING INFORMATION

(Geneva, 1976)

1 Introduction

1.1 Under the provisions of Recommendation D.174 where the chargeable duration of a reversed charge telephone call is determined in the outgoing country, the details of the call should be transmitted promptly to the distant Administration to enable it to perform customer billing and in certain circumstances (Recommendation D.170, § 4.3) initiate international accounting.

¹⁾ The term "Reversed Charge" is used to mean collect, credit card and third number paying calls.

1.2 A growing number of Administrations are processing telephone call data using computer based accounting systems. Information is drawn from traffic history tapes or from manually encoded data such as telephone tickets. It is usual, at present, to convert computer output from this processing to conventional printed accounts for dispatch to other Administrations. Where the receiving Administration also uses computer facilities, however, this information has to be re-encoded for further processing.

1.3 Transmission of data in encoded form avoids the decoding/re-encoding step. It also offers a faster transfer of information than by printed forms through the mail. The latter remains true even if the forwarding Administration has prepared the data by manual/mechanical means.

2 Aim

2.1 The aim of this Recommendation is:

2.1.1 to enable Administrations using computer based accounting systems to transfer information to each other in encoded form, without the need for decoding into conventional printed form and subsequent encoding into machine-readable form;

2.1.2 to enable other Administrations, if they so desire, to benefit from the greater efficiency of speedier transfer of information to them and to prepare themselves for the introduction of computer working by introducing transmission of data in encoded form in advance of installation of a computer;

2.1.3 to facilitate provision of printed output from computer based systems in a format suitable for manual/mechanical processing where it is to be forwarded to Administrations not using computer facilities;

2.1.4 to facilitate provision of printed output from manual/mechanical accounting systems in a format suitable for data encoding where it is to be forwarded to Administrations employing computer processing.

3 Method

3.1 Data record

3.1.1 The aim of this Recommendation can be met by use of a standard data record format for the various elements of information to be transferred. The information elements and their sequence must be compatible with the provisions of Recommendation D.174, so that decoding to and encoding from printed output for exchange of information with Administrations using manual/mechanical systems will be as simple as possible.

3.1.2 Between Administrations operating computer based accounting systems, adherence to the standard data record format for data transmission purposes will ensure that only one interface programme will be needed to enable any one computer installation to generate suitable input for, and accept output from, other computer installations.

3.2 Data transfer

3.2.1 Procedures already exist for transfer of data in conventional (printed) form through the mails. Data in encoded form could be transferred by mailing of magnetic or paper tapes, paper tape transmission by telex or data transmission over circuits utilized for this purpose.

3.2.2 While mailing of tapes avoids the encoding task for the receiving Administration there can be delays and loss in transit. In addition, there can be difficulties caused by the fragility of paper tape and incompatibility of various forms of magnetic tape recording.

3.2.3 Transfer of data via the telex service using paper tape transmission and reception can be advantageous for Administrations whether they have computer based accounting systems or manual/mechanical systems. As both page copy and punched paper tape can be generated at the receiving point users of either type of accounting system can benefit. Page copy can be used for checking paper tape with the latter becoming input to a computer. Page copy can also be used as the source of information for preparation of customer billing in a manual mechanical system.

3.2.4 Where large volumes of data are to be exchanged transmission over higher speed circuits offers significant benefits. Where suitable data links are in use for service transmission, these could be utilized. Data terminals and modems capable of transmission speeds in the range 600 to 2400 bits per second should be sufficient but higher speeds could be used. For manual/mechanical systems, data received on data terminals can be reproduced as page copy for the production of customer billing. For computer based accounting systems, data transmission offers the possibility of complete automation of the process by computer-to-computer transfer.

4 Specific recommendations

4.1 It is recommended that:

4.1.1 where possible, data transferred in printed form should be placed in the order shown in § A.2 of Annex A;

4.1.2 for transfer of data in encoded form the standard data record format detailed in the Annex should be followed;

4.1.3 transmission of data in encoded form be by the following means:

- a) use of the telex system;
- b) use of data transmission over telephone circuits, dedicated telegraph circuits or special data links;

4.1.4 transmission speeds, operating practices and technical standards should be agreed between the Administrations concerned and should conform with the appropriate CCITT Recommendations.

5 Code maintenance

The Secretariat of the CCITT is responsible for maintenance of the record of codes used for Items 1, 2, 6 and 7 of the Detail Record shown in Annex A.

New codes can be allocated by the authority of the Director of the CCITT. Applications should be made through the CCITT Secretariat who will arrange for the notification of new codes in the *Operational Bulletin*.

ANNEX A

(to Recommendation D.176)

Telephone reversed charge billing information Fixed record formats

A.1 Batch header

Item Number	Contents	Field size	Justification	Fill	Comments
1	Record type identification number	3	—	—	Always <u>HDR</u>
2	Batch sequence number	3	Right	Zero	For a specific combination of two Administrations. Reset to 1 after 999
3	Service type	2	Right	Zero	Always 01 for telephone reversed charge data
4	Administration sending data	6	Left	Space	Code as agreed bilaterally between the sending and receiving Administrations
5	Creation date	6	—	—	Year, month and day on which data tape was created YYMMDD (January 01)
6	Administration receiving data	6	Left	Space	As for item 4
7	Filler	38	—	—	Space fill to give fixed size records

A.2 Detail record

Item Number	Contents	Field size	Justification	Fill	Comments
1	Record sequence	5	Right	Zero	Number all messages in numerical sequence 0001 through 9999
2	Reserved charge type code	1	—	—	1. Collect 2. Credit card 3. Third party paying 4. Collect pay phone 5. International Freephone service 6. Automated credit card service ^{a)}
3	Service date	4	—	—	Month and day of service in place of origin — MMDD (January 01)
4	Calling party number	11	Left	Space	National (significant) number
5	Called party number	11	Left	Space	National (significant) number

A.2 Detail record (end)

Item Number	Contents	Field size	Justification	Fill	Comments
6	Rate level 1	1	—	—	1. Personal rate 2. Station rate
7	Rate level 2	1	—	—	1. Full rate 2. Reduced rate A ^{b)} 3. Reduced rate B ^{b)}
8	Charged duration				
8 a)	Charged duration — minutes	3	Right	Zero	Time to be paid for
8 b)	Charged duration — seconds	2	Right	Zero	Time for determining charges and/or establishing settlement accounts Individual calls of over 999 minutes to be handled manually
9	Connect time	4	—	—	Time call connected in the place of origin 0000 through 2359
10	Charged number/credit card	15	Left	Space	National (significant) number of credit card number use when charges are not to called number (item 4)
11	Called country	3	Left	Space	Indicates the country code of the called country ^{c)}
12	Charged amount	7	Left	Space	Specifies charged amount. Can include decimal point ^{d) e) f) g)}
13	Additional charges	1	—	—	Additional charges to be collected: ADC (advice of duration of call) Space to fill to indicate no additional charge
14	Route	6	Left	Space	To indicate primary route has been used, record no data against this item (space fill still required). To indicate a route other than the primary, use the appropriate country code: — include the 3rd digit for country code 21. — include NPA code (and NPX code, if necessary) for World Numbering Zone I

^{a)} See Recommendation D.120 on collection charges applied to automated telephone credit cards.

^{b)} For telephone only.

^{c)} For the countries within World Zone 1, no entry is necessary, as the terminating location can be determined by the digits contained within the called number.

^{d)} To allow the originating Administration to determine the charges for calls where it, rather than the receiving Administration, determines the charges.

^{e)} The currency of the charged amount will be expressed in SDR's or in gold francs. The billing Administration will also convert the charged amount into local currency for customer billing purposes.

^{f)} Includes all amounts the originating administration expects to receive, including but not limited to service charges, surcharges, taxes, etc.

^{g)} Consistent with its national policies, the billing Administration may levy additional charges and/or taxes that may apply, if any, for this type of service.

A.3 Batch trailer

Item Number	Contents	Field size	Justification	Fill	Comments
1	Record type identification	3	—	—	Always <u>TRL</u>
2 - 6	(As for Batch header)	23	—	—	
7	Number of details records in batch	6	Right	Zero	
8	Control total	7	Right	Zero	Total of all items 7 in <i>detail record</i>
9	Filler	25	—	—	Space fill to give fixed size records

Note 1 — New codes can be obtained from the Director of the CCITT. (Refer to § 5 of this Recommendation.)

Note 2 — Items not used should be space or zero filled as appropriate.

Note 3 — In telex transmissions, records may be followed by “new line” function characters. Records may also be terminated at the end of significant data by “new line” function characters and the remainder of the record will then be interpreted by the Administration receiving the data as space or zero fill as appropriate.

Recommendation D.177

ADJUSTMENT OF CHARGES AND REFUNDS IN THE INTERNATIONAL TELEX SERVICE

(Melbourne, 1988)

1 If a subscriber claims a reduction in charges as a result of difficulties or irregularities during the call, he may be requested by his Administration to supply copies of the message in question as transmitted and received. If the faults are clearly attributable to either of the subscribers, no reduction of the charge shall be made. If the difficulty was due to the telex service, the chargeable duration of the call shall be reduced to the total period during which telex conditions were satisfactory.

2 Any complaint made after the completion of the call shall be investigated by the international exchange of origin. According to circumstances, the international exchange or exchanges concerned shall communicate directly to the international exchange of origin the information that may be necessary for the inquiry.

3 When a refund must be granted, the international exchange responsible for charging is entitled to modify the entries in the documents used for the establishment of international accounts, if necessary after agreement with the international exchanges affected.

4 In the case of refusal by the calling station or in the absence of a reply from the latter when it is called, the cost of one minute of ordinary private call exchanged between the two stations concerned during the charge period in which the refusal or non-reply took place shall be payable. This charge shall not be posted in the international accounts. However, Administrations and recognized private operating agencies concerned may, by special agreement, collect total charges different from those mentioned above.

5 A call booked to a wrong number and established with the station having that number shall be charged as for a call with a correct number.

6 However, if the international telex position is advised by the calling subscriber immediately after the establishment of the call, the charge payable for the call to the wrong number may be an amount not exceeding the cost of one minute's telex call for the charge period during which the request for the call to the wrong number was made.

7 The amount of this charge shall not be entered in the international accounts.

Recommendation D.178

MONTHLY ACCOUNTS FOR SEMI-AUTOMATIC TELEPHONE CALLS (ORDINARY AND URGENT CALLS, WITH OR WITHOUT SPECIAL FACILITIES)

(Malaga-Torremolinos, 1984)

The CCITT,

considering

a) that a trend has been observed in various countries over the past few years whereby it is becoming less and less common, in international telephone operation, for the operator of the country of destination and in some cases of transit to be requested to set up telephone calls;

b) that the operator of the country of origin therefore plays a predominant role in establishing the connection between the calling and called subscribers;

c) that this trend makes it necessary to modify the former accounting rules based on the principle of "accounting revenue division";

d) that those countries whose operators effectively participate in setting up the call need to be remunerated on a more equitable basis;

e) that international telephone accounting should be simplified;

recommends that in international semi-automatic operation:

1) for calls, with the exception of collect and/or credit card calls, the only item to be entered in international accounts should be the effective conversation time determined according to the 3 + 1 or 1 + 1 charging systems. Special charges (such as the surcharge for station-to-station and personal calls) would remain with the Administration of the country of origin;

2) as far as collect calls are concerned, subject to agreement between the Administrations concerned, the Administration of the country of destination should pay, in addition to the normal share relating to the call (regarded as an outgoing call), a flat-rate charge per call to be fixed by bilateral agreement. The purpose of this flat-rate charge would be to cover the costs incurred for the establishment of the call in the country of origin¹⁾.

¹⁾ The accounting methods described above could be applied to credit card calls, subject to bilateral agreement between the Administrations concerned.

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SECTION 13

INTERNATIONAL SOUND- AND TELEVISION-PROGRAMME TRANSMISSIONS

Recommendation D.180

OCCASIONAL PROVISION OF CIRCUITS FOR INTERNATIONAL SOUND- AND TELEVISION-PROGRAMME TRANSMISSIONS

1 General

In most cases, circuits used for sound- and television-programme transmissions are owned by Administrations although in some countries national broadcasting organizations own all or part of the circuits within national boundaries.

The provision of circuits for transmissions between two or more countries requires the closest cooperation between:

- the broadcasting organizations¹⁾ concerned in a sound- or television-programme transmission, either as users or owners of sound-programme and television circuits or both, and
- the Administrations concerned.

It is therefore recommended that the following principles for ordering and charging should be observed for the occasional provision of sound or television circuits.

This Recommendation is intended to cover the provision of circuits for sound- and television-programme transmissions only and not other types of transmissions.

This Recommendation does not include provisions for the leasing for periods of one day or more of sound- and television-programme circuits, which are subject to the provisions of Recommendation D.4 and Recommendation D.310 R.

Provisions governing the technical aspects and maintenance of sound and television programmes and associated circuits are contained in the J, M and N Series Recommendations.

2 Definitions

The terms used in connection with sound- and television-programme transmissions, as defined below, apply to all cases of the occasional provision of sound or television circuits.

¹⁾ Any reference to broadcasting organizations in this Recommendation applies equally to other users.

2.1 programme booking centre (PBC)

F: service centralisateur

S: centro de reserva de programas (CRP)

The office of an Administration (or broadcasting organization where circuits are provided for international service by such an organization) which receives orders for international sound and/or television circuits from broadcasting organizations in its own country or from a broadcasting organization in another country or from the PBC of another Administration and is charged with the task of making appropriate arrangements for providing the ordered circuits.

2.2 international sound programme centre (ISPC)

F: centre radiophonique international (CRI)

S: centro radiofónico internacional (CRI)

A centre at which at least one international sound-programme circuit terminates and in which international sound-programme connections can be made by the interconnection of international and/or national sound-programme circuits.

The ISPC is responsible for setting up, lining up and maintaining international sound-programme connections and for the supervision of the transmissions made on them.

2.3 international television programme centre (ITPC)

F: centre télévisuel international (CTI)

S: centro internacional de televisión (CIT)

A centre at which at least one international television circuit terminates and in which international television connections can be made by the interconnection of international and/or national television circuits.

The ITPC is responsible for setting up, lining up and maintaining international television connections and for the supervision of the transmissions made on them.

The centre at the end of an international satellite television circuit is sometimes referred to as the satellite international television-programme centre (SITPC).

2.4 broadcasting organization

F: organisme de radiodiffusion

S: organismo de radiodifusión

A broadcasting organization is an organization which is concerned with sound and/or television broadcasting.

Most of the customers ordering facilities for sound- and television-programme transmissions are broadcasting organizations, and for convenience, the term "broadcasting organization" is used in this Recommendation to denote activity of any user or customer, and where so used, is equally applicable to any other customer requiring sound- or television-programme circuits.

2.5 Categories of transmissions

2.5.1 regular transmissions are those which take place at regular intervals, at fixed times between the same points. Some regular transmissions may be subject to special contractual arrangements.

2.5.2 occasional transmissions are all those which do not fall within the definition of regular transmissions.

Some occasional transmissions may be subject to special contractual arrangements.

2.5.3 simple transmissions are one-way transmissions from a point of origin in one country to a receiving point in another.

2.5.4 multiple-destination transmissions are those transmissions which originate in one or more countries, from one or more points of origin, and are transmitted simultaneously to two or more countries.

2.6 Categories of circuit

2.6.1 **sound-programme circuit** is a unidirectional circuit for the transmission of a sound programme or a sound component of a television programme²⁾. The various types of audio circuits are described in § 3.

2.6.2 **television circuit** is a unidirectional circuit for the transmission of the video component of a television programme.

2.6.3 **control circuit** is a telephone-type circuit which may be used by a broadcasting organization for the supervision and/or coordination of a sound- or television-programme transmission.³⁾

2.7 Constitution of sound- and television-programme connections

2.7.1 An international sound- or television-programme connection consists of one or more unidirectional circuits between broadcasting organizations and comprises:

- the point to be regarded as that of the origin of the transmission (Point A of Figures 1/D.180 and 2/D.180);
- the outgoing national circuit which connects Point A to the first ISPC or ITPC (Point B);
- an international circuit comprised of any combination of international or national terrestrial, submarine cable, radio or satellite circuits or circuit sections. (A satellite circuit consists of a satellite section, including the earth stations, extended by terrestrial means to the ISPCs or ITPCs at the ends of the satellite circuit);
- the incoming national circuit which connects the last ISPC or ITPC (Point C) to Point D;
- the point of destination of the transmission (Point D).

The various parts of international connections are illustrated in Figures 1/D.180 and 2/D.180.

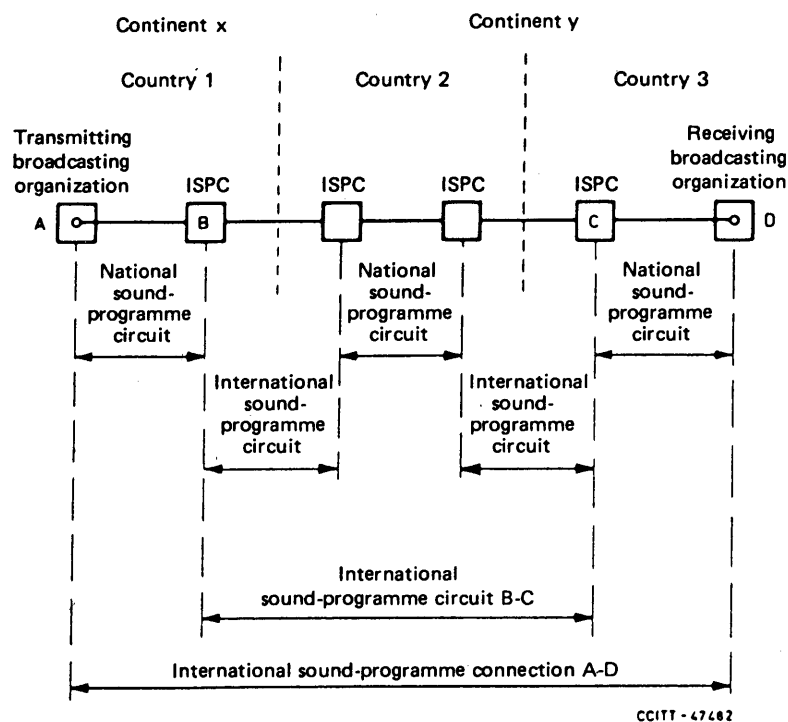


FIGURE 1/D.180

Example of an international sound-programme connection

²⁾ More than one such sound-programme circuit may be required for association with a single television circuit.

³⁾ More than one such control circuit may be required for association with a single television circuit.

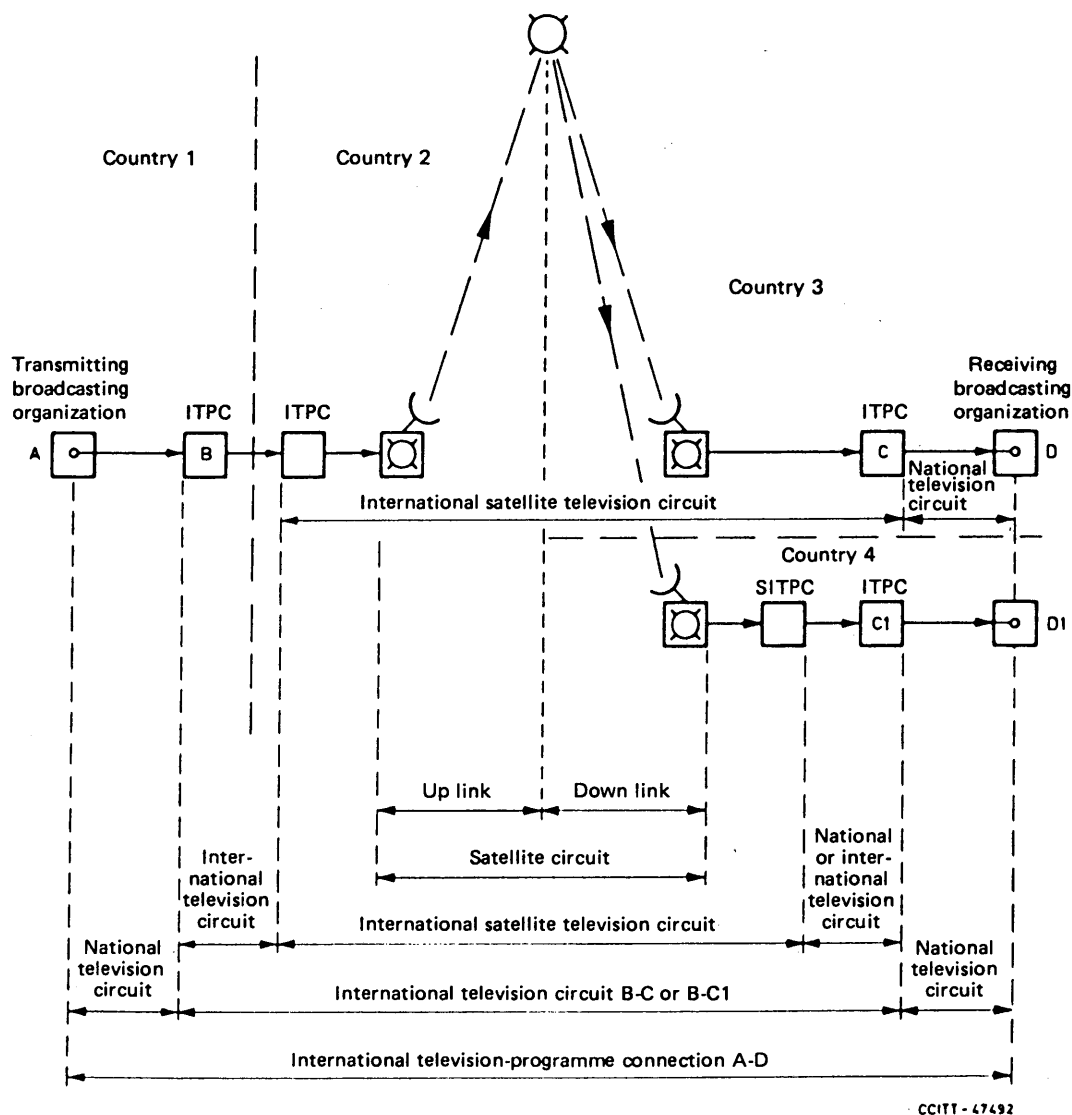


FIGURE 2/D.180

Example of an international television-programme connection involving a satellite circuit

2.7.2 The complete chain between A and D, including the international circuit B-C and the national circuits (A-B and C-D) is the *international sound- or television-programme connection*.

2.7.3 Points A and D are, as a general rule, under the control of the transmitting and receiving broadcasting organizations.

Points B and C are, in principle, under the control of the Administrations of the corresponding countries.

The circuit B-C is generally under the control of the Administrations but certain of its component parts (which may be national or international circuits) and some ISPCs and ITPCs may be owned or operated by broadcasting organizations.

The national circuits A-B and C-D may be under the control of either an Administration or a broadcasting organization, or both jointly, according to the actual arrangements in the countries concerned.

3 Types of sound-programme circuits

3.1 The types of sound-programme circuits that may be provided for sound-programme transmissions or the sound component of a television-programme transmission are referred to as follows for ordering and charging purposes:

	<i>Approximate bandwidth</i>
Narrow-band	3 kHz
Medium-band	5 kHz
Wide-band	10 kHz
Very wide-band	15 kHz
Stereophonic pair	2 at 15 kHz each

Detailed technical parameters of some types are given in the J and N Series Recommendations.

A stereophonic pair consists normally of two very wide-band circuits, which must be carefully matched. Each circuit of a stereophonic pair may also be used separately for monophonic transmissions.

3.2 Narrow-band sound-programme circuits may be telephone-type circuits. They are provided in varying forms, but are routed through the ISPC for setting-up and maintenance. When provided on a 4-wire basis, the return path may be used as an unidirectional control circuit.

3.3 The five types of circuit in § 3.1 above provide for the continued use of existing facilities (e.g. circuits with a top nominal transmitted frequency of 6.4 kHz, both "old" and "new" types, would be medium-band circuits as well as those with a top nominal frequency of 5 kHz) as well as future requirements, and apply equally:

- for both sound- and television-programme transmissions, and
- for terrestrial, submarine cable, radio and satellite circuits.

3.4 Administrations may decide to provide of the five types of sound circuits, only those for which sufficient customer demand is indicated.

3.5 When an Administration cannot provide the type of circuit that is ordered, if time permits, it will inform the broadcasting organization of the type of circuit that can be made available. When time does not permit consultation with the broadcasting organization, the Administration should provide a circuit of the nearest suitable type available.

4 Ordering of circuits and conditions of acceptance

4.1 Orders

4.1.1 Orders for the use of circuits for sound- and television-programme transmissions should normally be addressed by a broadcasting organization to the Administration of its country. The broadcasting organizations concerned should coordinate their arrangements before placing orders for circuits. Orders for all the circuits to be established and, wherever possible in practice, for any automatic telephone set required, should usually be placed by the broadcasting organization which is to receive the transmission.

4.1.2 With prior agreement of the broadcasting organizations concerned, and particularly for some multiple-destination transmissions, orders may be placed with the Administration of the country in which the transmission will originate or of any intermediate transit country.

4.1.3 Coordinated Universal Time (UTC)⁴⁾ should be used for bookings.

⁴⁾ For operational purposes, Coordinated Universal Time can be considered equivalent to Greenwich Mean Time (GMT).

4.1.4 When agreement has been reached on the orders to be placed, the transmitting broadcasting organization should provide its Administration with a list, for information purposes, of all the circuits to be established.

Provision of this list does not constitute an order for circuits. In addition, if the broadcasting organizations concerned have appointed a coordinating centre for a transmission, it should send a list of all circuits to be established to the Administration concerned (see Recommendation N.52 [1]).

4.1.5 Each order, which should be clearly identified as such, carries with it an undertaking to pay all the charges relating to the use of the facilities ordered, including any cancellation fee or special expenses which may be incurred in connection with the order.

If time permits after an order has been placed, an estimate of any special expenses which are likely to be a major part of the total should be given to the broadcasting organization.

4.1.6 Orders for the use of circuits will be met subject to availability of facilities. The Programme Booking Centre (PBC) receiving orders should confirm acceptance and availability of circuit as soon as possible unless special arrangements have been made nationally between the Administration and the broadcasting organization which has placed the order. When time permits, orders and confirmations should normally be in written form (e.g. telex).

4.1.7 It is in the interest of both broadcasting organizations and Administrations that orders should be placed as soon as possible, preferably at least 24 hours before the provision of circuits is scheduled to take place. Administrations should always do their best to provide circuits at shorter notice. Broadcasting organizations should always do their best to place orders as early as possible, particularly in those cases where special construction of facilities will be required.

4.2 *Handling of orders received by Administrations*

4.2.1 The Administration receiving an order is responsible for passing the order to all other Administrations concerned and for obtaining from them confirmation of the availability of the circuits and facilities required.

4.2.2 Facilities for sound- and television-programme transmissions should be allocated in the sequence in which orders are received.

4.2.3 For the provision of television circuits via satellite:

- a) the Administration receiving the order is responsible for arranging the circuits between the broadcasting organization and the appropriate ITPC at the end of the satellite circuit (SITPC);
- b) the Administration operating this ITPC is responsible for confirming the availability of the satellite circuit and for ordering its portion of that circuit; and
- c) the Administration operating the ITPC at the other end of the satellite circuit is responsible for ordering its portion of the satellite circuit and for arranging the circuits between its ITPC and the other broadcasting organization.

This procedure normally applies also to sound-programme and control circuits provided by means of satellite channels specially assigned for use in association with television transmissions but not necessarily to other sound-programme circuits provided via the satellite or to sound-programme circuits provided by any other means, e.g. submarine cable.

4.3 *Cancellations*

4.3.1 A cancellation fee may be charged by Administrations if, for reasons not within their control, the order is cancelled:

- a) less than 24 hours, but more than 2 hours, before the time scheduled for the beginning of the provision of circuits (see § 4.3.2 below); or
- b) 2 hours or less before the time scheduled for the beginning of the provision of circuits (see § 4.3.3 below).

The time to be considered in determining these limits is the time at which the broadcasting organization submits its cancellation request to the PBC which received the original order.

4.3.2 The fee with regard to a) above should be such as to cover the administrative expenses already incurred by Administrations following receipt of the order. This should provide some incentive to broadcasting organizations to cancel orders in sufficient time for the circuits concerned to be made available to another customer. This fee should not be charged unless the order has been accepted and confirmed by the Administration concerned.

4.3.3 The fee with regard to b) above should be such as to cover, in addition to the expenses referred to in 4.3.2, any additional preparation for the provision of circuits, and to compensate in part for loss of revenue which might have been obtained by making the circuit available to another customer. This fee may be charged whether or not the order has been confirmed by the Administration concerned.

4.3.4 In all cases, Administrations may require reimbursement of any documented special expenses incurred, e.g. in the provision of specially engineered circuits, even when the transmission is cancelled with more than 24 hours notice.

4.4 *Alterations in orders*

An alteration to an order for which the Administrations are not responsible should be considered as a new order which cancels the original one. The original order is therefore subject to the cancellation fee referred to in § 4.3 above when the alteration request is made within the specified time limit, except that no fee is payable in respect of:

- a) a change of less than a total of 2 hours in the time scheduled for the beginning of the use of the circuit, regardless of the number of individual alterations;
- b) a change in the scheduled time such that the new period of use overlaps the original period;
- c) a change in the overall duration of the use of circuits;
- d) a change in the routing of circuits beyond the extremities of the international circuit provided that no alteration whatsoever is requested in the international circuit.

5 **Charging principles**

The total charge for the provision of circuits for an international sound- or television-programme transmission is the sum of the charges for the various circuit sections (see § 2.7 above and Figures 1/D.180 and 2/D.180).

The international charges should normally have two basic elements:

- 1) a fixed charge designed to cover preparation and operation, and
- 2) a charge based on duration of the provision of the circuit.

The fixed charge may include a minimum duration of the provision of the circuit.

In view of the great disparity in the cost of the various components of, on the one hand, terrestrial circuits of the type used mainly within continents and, on the other hand, satellite and long-distance submarine cable circuits used mainly for intercontinental relations, it is not possible to recommend one single method for developing the charges for each individual section.

Administrations which of necessity operate using more than one method of charging should define the interconnection points for the application of the different methods. This should normally be an ISPC or an ITPC.

Whenever possible the same method of charging should be used within the same region.

5.1 *Charging for the provision of circuits for international sound- and television-programme transmissions except those via satellite, radio or intercontinental submarine cable circuits*

5.1.1 The charge normally should be made up of the following elements:

- a) a fixed charge for the preparation and operation per provision of circuits and per country having an interconnection point (whatever the number of interconnecting points within the terminal and transit countries);

- b) a charge per minute of provision of circuits per terminal country, which may be expressed differently for:
 - a sending terminal,
 - a receiving terminal,
 - a branching terminal in a multiple-destination transmission;
- c) a charge per minute of provision of circuits and per interconnection point in a transit country;
- d) a charge per minute of provision of circuits based on the length of line;
- e) any special expenses incurred in the setting up of special circuits to connect with existing circuits and, wherever possible in practice, for the installation of any automatic telephone set required, any special charges for use of national facilities not covered by the charges of a) and d) above.

5.1.2 The provision of a sound-programme circuit established on a subcarrier of a channel used for television transmission is charged as for a sound circuit provided for an independent sound-programme transmission.

When a Sound-In-Sync (SIS) facility is used, no additional amount is added to the accounting rates. Any remuneration for extra expenses incurred by an Administration is a national matter between that Administration and its broadcasting organization.

5.1.3 In principle, use of different types of sound-programme circuits to make up an international sound-programme connection should be avoided. However, if it is necessary to use different types of circuits for any section of the connection, the charge applicable to all sections would be that for the lowest quality type used. The sharing of charges between Administrations should be on the basis of the lowest charges applied.

If a broadcasting organization orders a higher quality sound-programme circuit for a particular section of the connection, the charges for that higher quality type would apply to that section.

5.1.4 If a telephone-type circuit is provided for use as a sound-programme circuit, items b), c) and d) in § 5.1.1 above may be combined in a charge related to the charge for an appropriate telephone call in the relation concerned.

Note – This does not obviate the need to pay the charges of a) and e) as appropriate.

When a narrow-band circuit provided on a 4-wire basis is used as a sound-programme circuit in one direction and as a control circuit in the other direction (see § 3.2 above) an additional charge may be made.

5.1.5 International circuits which are part of a network providing multiple-destination transmissions, where the programme is received simultaneously in several countries, are considered, from the charging point of view, as separate circuits:

- from the point of origin to the first receiving terminal;
- from the first receiving terminal to the next receiving terminal, and so on;
- from a branching point to the next receiving terminal.

5.1.6 Broadcasting organizations should arrange among themselves which will pay charges for the common use of circuits in multiple-destination transmissions. The diagram in Figure 3/D.180 illustrates how such arrangements and the principles in § 5.1.5 above should be applied.

In Figure 3/D.180, it is assumed that the broadcasting organization in B, which broadcasts the transmission coming from A, pays the charge for the circuit A-B, that the broadcasting organization in F pays the charge for the circuit B-F, while the broadcasting organizations in G, H and J pay for the circuits F-G, F-H and F-J respectively.

As C is not broadcasting the transmission, the broadcasting organizations in D and E should arrange in advance which of them will pay the charge for the circuit B-C. If, for example, the broadcasting organization in D agrees to pay the charge for the circuit B-C, the charges to be collected in D and in E should be based, respectively, on the use of circuits B-C-D and C-E.

If, during the use of a circuit an additional broadcasting organization is connected to any part of the international circuit, that broadcasting organization will be responsible for all additional charges concerned in that connection.

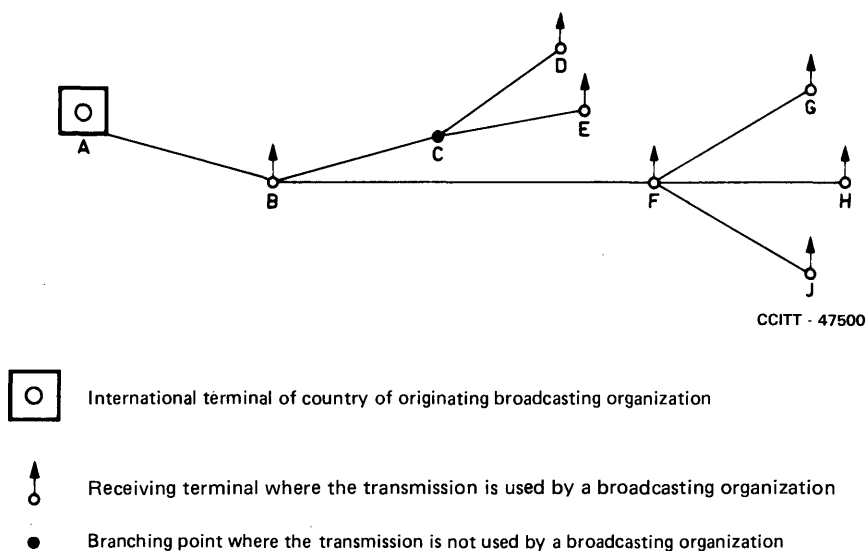


FIGURE 3/D.180

Example of the use of a network of international circuits
for multiple-destination transmissions

5.1.7 When several different routes exist in any given relation the total charge for each of the routes is the sum of the shares due to each country for the actual route followed. The choice of route is normally left to the discretion of Administrations. However, a broadcasting organization may request a specific route, which should be provided by the Administration concerned if possible.

In the case of direct transit of a country where the transmission is not used and when there is more than one route through that country, its Administration should normally fix a uniform transit charge for transit of its country in a given relation.

5.1.8 There is a minimum chargeable duration of three minutes for the provision of circuits used for sound- and television-programme transmissions.

5.1.9 The same charge should apply in principle to circuits used for both colour and monochrome television transmissions and normally at all times of the day and night.

5.1.10 Where a telephone-type circuit is provided for use as a control circuit, the appropriate telephone charge between the two terminal countries should be applied. Where additional facilities are provided in connection with such a circuit, Administrations may make appropriate charges for such facilities.

5.1.11 When the vertical blanking interval is used to transmit special signals specified by the CCIR (such as VITS, VIRS, DIS and captions for the deaf) no additional charge should be levied provided that the information is directly related to the switching, quality control or content of the TV signal.

5.1.12 The clauses applied in certain regions of the world are given in the corresponding regional Recommendations found in the D.xxxR Series Recommendations. In regions for which no Recommendation has been adopted, the appropriate clauses of the D.xxxR Series Recommendations could possibly be applied.

5.2 *Charging for sound- and television-programme circuits furnished by means of satellite, radio or intercontinental submarine cable and used for international sound- and television-programme transmissions*

5.2.1 For the provision of television circuit, a minimum charge should be made covering an initial period of 10 minutes hereinafter referred to as the *initial period charge*, plus a per-minute charge for each minute or part minute thereafter.

5.2.2 The charge for a satellite television circuit is made up of an *up part* and a *down part* charge, each including its terrestrial extension to the ITPC.

Each Administration should establish a charge for the part which it controls.

5.2.3 For the provision of circuits for sound-programme transmissions, the charge should normally have two basic elements:

- 1) a fixed charge designed to cover preparation and operation, and
- 2) a charge based on the duration of the connection which may be related to, but not necessarily the same as, the station-to-station telephone call rate.

5.2.4 For the consecutive use of the same satellite television circuit by different broadcasting organizations, only one initial period charge may be made, as though the circuit was being used by one broadcasting organization only. The duration of each of the consecutive transmissions should then be considered, for purposes of calculating the charges, at least as long as an initial chargeable period.

5.2.5 For the use of satellite circuits for multiple-destination transmissions via satellite involving:

- one part between the point of origin and the satellite (up-link);
- several parts between the satellite and the receiving earth station (down-link) of each country receiving the transmission,

the charge for the up-link normally should be divided amongst the receiving earth station countries based on the time of usage of each down-link. When this charge varies according to the point of destination, the highest charge should be applied.

The Administration providing the up-link may levy a surcharge for the common use of a satellite circuit to cover the additional costs of preparation. This surcharge should be shared by the receiving countries in proportion to their time of usage.

The same procedure may apply to any charges for circuits upstream to the connection.

5.2.6 For the provision of circuits whose direction of transmission alternates between two points in a given period, the individual durations may be summed to determine the chargeable duration in each direction.

5.2.7 When the vertical blanking interval is used to transmit special signals specified by the CCIR (such as VITS, VIRS, DIS and captions for the deaf) no additional charge should be levied provided that the information is directly related to the switching, quality control or content of the TV signal.

5.2.8 Administrations may offer services under special contractual arrangements to meet individual customer requirements such as:

- a) periodic provision of circuits at fixed times and with fixed points of origination and termination;
- b) provision of circuits without requirements for fixed times or fixed points of origination and termination;
- c) provision of circuits during off-peak hours.

5.2.9 Administrations may apply a charge for a television-associated sound-programme circuit established by Administrations on a subcarrier of a channel used for television connection.

5.3 *Determination of the chargeable duration*

5.3.1 The ISPCs and ITPCs concerned in providing circuits should come to an agreement between themselves and broadcasting organizations at the end of each period of use of circuits as to the chargeable duration:

- a) the time at which the ordered connection was placed at the disposal of the broadcasting organization (beginning of the chargeable duration) – this is also the beginning of the preparatory period (see Recommendations N.4 [2] and N.54 [3]);
- b) the time at which the ordered connection was released by the broadcasting organization (end of chargeable duration) – sometimes referred to as the “goodnight time”.
- c) when necessary, the time and duration of any interruption which may have occurred.

The time at the beginning and end of the chargeable duration, as well as the time of any occurrence and duration of any interruptions are entered on a report. This report should be sent, preferably on the same day, to the office responsible for coordinating all the details necessary for the establishment of international accounts. In addition, details relative to interruptions are noted on the report sent periodically to the technical services concerned.

5.3.2 In case of disagreement, the opinion of the Administration in the receiving country on the duration of use of circuits and the duration of interruptions shall prevail, except with regard to orders which are placed and paid for at the transmitting end when the opinion of the Administration at that end shall prevail as regards the start and end times (though not as regards the duration of interruptions).

5.3.3 The start time for the use of a circuit is the time scheduled when the order is placed, unless the circuit is handed over to the customer earlier at his request. It may be later than the scheduled time only if the Administrations have failed to provide the circuit in good working order on time.

5.3.4 There should be no obligation upon Administrations to monitor transmissions continuously. Consequently broadcasting organizations should be requested always to report at once if they are not satisfied with the quality of a circuit or if there is any interruption; Administrations, however, are not responsible for notifying broadcasting organizations of interruptions.

5.4 *Interruptions – allowances*

5.4.1 If during the period of use of circuits, an interruption, even of short duration, occurs:

- whether on the connection, or
- in a section of that connection, or
- in one or more of the sound circuits associated with a television-programme transmission, or
- in the video circuit only of a television-programme transmission,

a credit allowance corresponding to the duration of the interruption shall be given to the broadcasting organizations affected by the interruption.

Where multiple-destination transmissions are involved, interruptions of one or more video or sound circuits receiving the television transmission shall not be considered as an interruption of the associated video or sound transmitting circuit if such video or sound transmitting circuit is continued in use for reception at another point.

5.4.2 The general test of whether an allowance is in order should be: Was the circuit used?

This implies that broadcasting organizations must decide whether to use or refuse an ordered connection.

In general, if a broadcasting organization continues to broadcast or record the programme transmission, the charges in respect of any circuits it uses remain payable in full. If, however, as a result of a fault or interruption on the circuit, no signals or faulty signals are received by one or more participating broadcasting organizations, an allowance in respect of the circuits serving each of these broadcasting organizations may be given. Each circuit used by any broadcasting organization which continues to broadcast or record the transmission remains payable in full.

Similarly, if in such circumstances broadcasting or recording of either the video or sound components of the programme (but not both) is discontinued by any broadcasting organization, an allowance in respect of the television or sound circuit concerned (but not both) may be given at that broadcasting organization's request (see also § 5.4.6 below).

5.4.3 Any interruption should be reported by the broadcasting organization; however, in cases of facility failures known to the Administration, such reports may not be required. While broadcasting organizations are normally required specifically to request allowances for interruptions, such requirement may be waived at the discretion of and according to the national practices of Administrations.

5.4.4 It will be for the Administration of the country of the receiving broadcasting organization to assess the validity of any claim for allowances and to assess the allowance to be made, where necessary in consultation with the other Administrations concerned. In the event of disagreement, the opinion of the Administration of the country of the receiving broadcasting organization shall prevail over that of the other Administrations concerned.

5.4.5 Credit for interruptions should be allowed on any transmission, regardless of the interval between the receipt of the order and the start of the use of circuits.

5.4.6 It is accepted that an interruption of either the video or the sound component of a programme may render the whole transmission valueless to the customer. However, the charges for any connection which continues to be used by the customer for broadcasting or recording remain payable in accordance with § 5.4.2 above.

5.4.7 All Administrations concerned in the provision of circuits should make the allowances for interruptions, regardless of where they took place.

5.4.8 No allowance will be given when the interruption is due to the negligence of the broadcasting organization or the failure of facilities provided by the broadcasting organization.

5.4.9 When a circuit failure makes it impossible to provide a connection on the planned route, or causes an interruption in a circuit, an alternative routing should be established whenever possible, provided that the broadcasting organization undertakes to pay additional charges that may apply. However, for those sound-programme circuits which can be readily rerouted, the broadcasting organization should pay the same total charge that would have applied if no failure had occurred.

5.5 *Measurement of distances for terrestrial circuits*

5.5.1 When part or all of the charge for the provision of circuits is based on the length of circuit, the distance is normally taken as:

- in the case of the terminal country, the crowflight distance between the ISPC or ITPC and the point where the circuit crosses the frontier;
- in the case of the transit country, the crowflight distance between the points of crossing the frontier by the circuit;
- in both cases, in order to take better account of the cost actually incurred with a radio-relay link, the point midway between the two stations on either side of the frontier may be used instead of the actual point of crossing of the section of the link straddling the frontier.

5.5.2 However, the relatively high cost of television circuits and the wide disparity in many relations between crowflight and actual distances could make it desirable to base distance measurement for television circuits on the actual distance.

Similarly, it might be appropriate to round up the actual distance in small rather than large steps (in some regions, actual distances are rounded up to the next 10 km).

It is recommended that regions should decide whether to use actual distance within their region or whether to retain the system of measurement described in § 5.5.1 above for terrestrial television circuits.

6 **Accounting**

6.1 *Collection of charges*

In principle, the Administration with which the order was placed is responsible for collecting the charge for the provision of circuits from the broadcasting organization which placed the order.

6.2 *Remuneration of Administrations*

The Administration with which the order for the provision of circuits is placed is responsible for ensuring that the remuneration to other Administrations is entered into the international accounts in accordance with the provisions of Recommendation D.170. Unless otherwise agreed, the consolidated monthly accounts should be accompanied by supporting documents which will allow each provision of circuits to be separately identified.

6.3 For the provision of circuits for sound-programme transmissions as stated in § 5.2 above, the accounting rate shall be established by agreement between the Administrations concerned. The accounting rate based on the duration, which normally corresponds to the station-to-station telephone call accounting rate, should be shared between terminal Administrations and, where appropriate, with transit Administrations in the same manner as the accounting rates for telephone calls. In addition, each Administration shall be remunerated by the predetermined amount corresponding to its part of the fixed charge as described in § 5.2.3.

7 **Directory for handling orders for international sound- and television-programme circuits**

To ensure speedy and reliable arrangements for the provision of international sound- and television-programme circuits, it is essential that detailed information regarding the PBCs all over the world which handle orders for such circuits should be readily available to those concerned. This also applies to appropriate technical services and to the broadcasting organizations themselves.

A directory of this information has been established and kept up to date by the General Secretariat of the ITU, to which a request can be sent to obtain the necessary copies. In order that this directory be kept up-to-date and complete, each Administration should draw up an information sheet for every programme booking centre (PBC), international sound-programme centre (ISPC) and international television-programme centre (ITPC) under its control. It is recommended that broadcasting organizations which handle orders for international circuits should also draw up information sheets.

To this end, up-to-date information sheets should be sent to the General Secretariat of the ITU.

The information sheets should include, where applicable, the following basic particulars:

- name of country;
- name of office for which information is given (PBC, ISPC, broadcasting organization, etc.);
- name of Administration or broadcasting organization;
- postal address;
- telephone number(s);
- telex number and answerback;
- telegraphic address;
- office hours (UTC);
- languages spoken;
- senior staff and deputies;
- contact outside office hours and on holidays;
- office handling orders for leased circuits (if not PBC);
- earth station;
- local time reference UTC;
- name(s) of customer(s) for which orders are normally handled.

References

- [1] CCITT Recommendation *Multiple television transmissions and coordinating centres*, Vol. IV, Rec. N.52.
- [2] CCITT Recommendation *Definition and duration of the line-up period and the preparatory period*, Vol. IV, Rec. N.4.
- [3] CCITT Recommendation *Definition and duration of the line-up period and the preparatory period*, Vol. IV, Rec. N.54.

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SECTION 14

CHARGING AND ACCOUNTING FOR INTERNATIONAL SATELLITE SERVICES

Recommendation D.185

GENERAL TARIFF AND ACCOUNTING PRINCIPLES FOR INTERNATIONAL ONE-WAY POINT-TO-MULTIPOINT SATELLITE SERVICES

(Melbourne, 1988)

The CCITT,

considering

(a) the development at world and regional levels of satellite systems permitting the provision of international multi-destination services;

(b) the need to meet customers' requirements by offering a wide range of services, in particular, a service to find a replacement for the HF Press Broadcast Service;

(c) the capital invested by the Administrations in satellite systems on which they expect an acceptable return, but which should not hinder the development of these multi-destination telecommunication services;

(d) the provisions of CCITT Recommendation F.140 regarding the definition and provision of these services and their characteristics;

(e) the interest to achieve as far as possible a certain degree of harmonization in general tariff and accounting principles for the provision of such services;

(f) finally, the need to adopt principles which are flexible enough to take into account the different technical possibilities in the provision of these services as well as the national legislations governing the status of earth stations,

recommends

to the Administrations to apply the following tariff and accounting principles for international multi-destination satellite services.

1 Preamble

1.1 The present Recommendation contains general tariff and accounting principles applicable to one-way point-to-multipoint satellite services¹⁾, ²⁾.

¹⁾ Multipoint-to-point and two-way multiple access services are not yet addressed in this Recommendation, and are for further study.

²⁾ The application of the provision of this Recommendation to one-way point-to-multipoint services involving communications with mobiles is for further study.

1.2 In the provision of those services a distinction may be drawn if necessary between tariff and accounting principles applying respectively to:

- the space segment,
- the transmitting earth station (including associated equipments which may include the control management centre),
- the receiving earth stations (including associated equipments),
- and, when appropriate, the extensions between earth stations and customers' premises.

1.3 When applying the present Recommendation the Administrations should also take into account the general provisions of CCITT Recommendation D.1.

1.4 This Recommendation does not apply to sound and television transmission services as may be provided under CCITT Recommendations D.4 and D.180.

2 Definitions

2.1 The **international point-to-multipoint telecommunications service via satellite** consists of making one or more analogue or digital international telecommunication links available to a customer³⁾ exclusively dedicated to the use for which they have been authorized on the terms and conditions set out in a lease agreement between the customer and the Administrations of the countries at each end of the link. The Administrations are in no way responsible for transmission content or enforcement of copyright laws.

2.2 This service may be provided in the following basic categories, subject to the agreement of the Administrations concerned:

- a) point-to-multipoint;
- b) full-time, part-time, occasional;
- c) non-pre-emptible protected, non-pre-emptible unprotected, and pre-emptible, taking into account the availability of the space segment to the Administrations.

2.2.1 *Full-time use*

The links are established 24 hours per day, seven days per week for a specified contract period. In determining such a period, Administrations may take into account the conditions established by the organizations managing the satellite system.

2.2.2 *Part-time*

The links are made available according to a pre-arranged schedule of discrete transmission intervals reserved over a period of one or more months or years.

2.2.3 *Occasional*

The links are established on an ad hoc basis with prior reservation for a minimum period agreed upon between the Administrations concerned.

2.2.4 *Non-pre-emptible*

A service which may not be interrupted or terminated for the provision of a service to another customer.

There are two types of non-pre-emptible services:

- a) protected – a service for which restoration is guaranteed, and,
- b) unprotected – a service for which restoration is not guaranteed and which may only be restored subject to availability of an alternate facility.

2.2.5 *Pre-emptible*

A service which may be interrupted to provide a service of higher priority.

³⁾ For the purposes of this Recommendation the customer is the individual or entity that leases one or more international links from an Administration and is responsible for payment of all charges or rentals due to that Administration.

3 Charging principles

3.1 *Tariff components*

In determining their collection charges, the Administrations should take the following principles into account.

3.1.1 *Space segment*

The utilization charge for the space segment is determined by a number of factors such as the cost, the power, the bandwidth, the bit rate made available and the number of participating countries, whether use is full time, part time or occasional, and the pre-emptibility/protection status afforded the service.

3.1.2 *Earth stations (including associated equipments)*

3.1.2.1 *Use of earth stations owned and operated by the Administrations*

The provision of service through earth stations owned and operated by the Administrations entails the payment of a rental. The level of that charge applied by each Administration concerned is established according to the service rendered.

3.1.2.2 *Use of earth stations installed and operated by the customer*

In countries where it is permitted by national law, the competent authorities may authorize customers to install and/or operate earth stations. Such authorizations may entail the collection of charges or fees for the licence granted to the customer(s).

3.1.3 *Service extensions*

When the earth stations are located in the Administrations premises, the charging in the terminal countries of the extensions from/to these earth stations is subject to the principles adopted by the Administrations of the countries concerned.

3.1.4 *Service reservation*

For the reservation of facilities by customers, prior to service initiation, Administrations may establish and notify, as appropriate, reservation fees and their conditions of application.

3.1.5 *Service cancellation*

At the ordering of the service the Administrations notify to customers, when appropriate, the level and the conditions of application of cancellation charges.

3.2 *Collection charges*

The establishment of collection charges is a national matter.

3.3 *Methods of collection of charges*

3.3.1 Charges for the use of the space segment may be collected according to either of the following procedures.

3.3.1.1 Each Administration involved in the provision of the service collects its charges for the service provided to the customer(s) situated in its own country.

3.3.1.2 The Administration of the transmitting country collects the total charges for the service provided to the customer.

3.3.2 Charges for fees relating to the earth stations (including associated equipment and extensions where applicable) may be collected as follows:

3.3.2.1 The Administrations providing and operating the earth stations collect their charges for the provision of the service required by the customer(s).

3.3.2.2 When the earth stations are installed and operated by the customer(s), their use does not usually entail the application of charges. However the Administrations may levy a fee for the granting of the license covering the installation and operation of the station.

3.3.3 The Administration of the transmitting country may collect the total charges for the service (space segment, earth station(s) and extensions) in one or more country(ies), subject to the agreement of the Administrations concerned.

3.3.4 When charging the customer, the Administrations may combine the relevant components in one sum or may charge them separately.

4 Accounting

4.1.1 Charges levied under the provisions mentioned in § 3.3.1.1 above do not entail the establishment of international accounts. Each Administration pays its share of remuneration due to the organization managing the satellite system.

4.1.2 When the Administration of the transmitting country collects the total charges for the space segment, as mentioned in § 3.3.1.2 above, the Administrations involved in the provision of the service may agree:

- a) either that the Administration of the transmitting country credits the organization managing the satellite system used with the full remuneration due for the space segment; or
- b) that they establish accounts between themselves, every Administration paying its share due for the space segment utilization to the organization managing the satellite system used.

4.2.1 The charges and fees which may be levied as indicated in § 3.3.2 above do not involve international accounts.

4.2.2 When the Administration of the transmitting country collects charges as indicated in § 3.3.3 above, the collecting Administration credits the concerned Administration(s) through the international accounts.

SECTION 15

TRANSMISSION OF MONTHLY INTERNATIONAL ACCOUNTING INFORMATION

Recommendation D.190

TRANSMISSION IN ENCODED FORM OF MONTHLY INTERNATIONAL ACCOUNTING INFORMATION¹⁾

(Geneva, 1976)

1 Introduction

1.1 Under the provisions of Recommendations D.42, D.67 and D.170, Administrations engage in international accounting for telephone, telegram and telex traffic handled each month.

1.2 A growing number of Administrations are processing this monthly international accounting data using computer based accounting systems. Information is drawn from traffic history tapes or manually encoded from data such as inward international accounts and statistical summaries prepared by manual abstraction from copies of telegrams and telephone and telex tickets.

1.3 It is usual at present to complete computer processing by producing conventional printed accounts following the specifications described in the various accounting Recommendations (D.42 for telegram; D.67 for telex; D.170 for telephone). Where the receiving Administration also uses computer facilities, however, this information has to be re-encoded for processing through its system.

1.4 Transmission of data in encoded form avoids the decoding/re-encoding step. It also offers a faster transfer of information than by printed forms through the mail. The latter remains true even if the forwarding Administration has prepared the data by manual/mechanical means.

2 Aim

2.1 The aim of this Recommendation is:

2.1.1 to enable Administrations using computer based accounting systems to transfer information to each other in encoded form, without the need for decoding into conventional printed form and subsequent encoding into machine-readable form;

2.1.2 to enable other Administrations, if they so desire, to benefit from the greater efficiency of speedier transfer of information to them and to prepare themselves for the introduction of computer working by introducing transmission of data in encoded form in advance of installation of a computer.

¹⁾ For the transmission in encoded form of maritime telecommunications accounting information, see Recommendation D.91.

2.1.3 to facilitate provision of printed output from computer based systems in a format suitable for manual/mechanical processing where it is to be forwarded to Administrations not using computer facilities;

2.1.4 to facilitate provision of printed output from manual/mechanical accounting systems in a format suitable for data encoding where it is to be forwarded to Administrations employing computer processing.

3 Method

3.1 *Data record*

3.1.1 The aim of this Recommendation can be met by use of a standard data record format for the various elements of information to be transferred. The information elements and their sequence must be compatible with the provisions of the various accounting Recommendations so that decoding to and encoding from printed output for exchange of information with Administrations using manual/mechanical systems will be as simple as possible.

3.1.2 Between Administrations operating computer based accounting systems, adherence to the standard data record format for data transmission purposes will ensure that only one interface programme will be needed to enable any one computer installation to generate suitable input for, and accept output from, other computer installations.

3.2 *Data transfer*

3.2.1 Procedures already exist for transfer of data in conventional (printed) form through the mails. Data in encoded form could be transferred by mailing of magnetic or paper tapes, paper tape transmission by telex or data transmission over circuits utilized for this purpose.

3.2.2 While mailing of tapes avoids the encoding task for the receiving Administration there can be delays and loss in transit. In addition, there can be difficulties caused by the fragility of paper tape and incompatibility of various forms of magnetic tape recording.

3.2.3 Transfer of data via the telex service using paper tape transmission and reception can be advantageous for Administrations whether they have computer based accounting systems or manual/mechanical systems. As both page copy and punched paper tape can be generated at the receiving point users of either type of accounting system can benefit. Page copy can be used for checking paper tape, with the latter becoming input to a computer. Page copy can also be used as the incoming international account avoiding the need for use of the postal service.

3.2.4 Where large volumes of data are to be exchanged, transmission over higher speed circuits offers significant benefits. Where suitable data links are in use for service transmissions these could be utilized. Data terminals and modems capable of transmission speeds in the range 600 to 2400 bits per second should be sufficient but higher speeds could be used. For manual/mechanical systems data received on data terminals can be reproduced as page copy representing an incoming international account. For computer based accounting systems data transmission offers the possibility of complete automation of the process by computer-to-computer transfer.

4 Specific recommendations

4.1 It is recommended that:

4.1.1 where possible data transferred in printed form should be placed in the order shown in § A.2;

4.1.2 for transfer of data in encoded form, the standard data record format detailed in Annex A should be followed;

4.1.3 transmission of data in encoded form should be by the following means:

- a) use of the telex system;
- b) use of data transmission over telephone circuits, dedicated telegraph circuits or special data links;

4.1.4 transmission speeds, operating practices and technical standards should be agreed between the Administrations concerned and should conform with the appropriate CCITT Recommendations.

5 Code maintenance

The CCITT Secretariat is responsible for maintenance of the record of codes used for Item 3 of the Batch header and Items 5, 6, 7, 8 (except tariff indicators, see Recommendation F.31 [1]), 11 and 12 of the Detail Record shown in Annex A.

New codes can be allocated by the authority of the Director of the CCITT. Applications should be made through the CCITT Secretariat which will arrange for notification of the new codes in the *Operational Bulletin*.

ANNEX A

(to Recommendation D.190)

Monthly international accounting information Fixed record formats

A.1 Batch header

Item number	Contents	Field size	Justification	Fill	Comments
1	Record type identifier	3	—	—	Always <i>HDR</i>
2	Batch sequence number	3	Right	Zero	For a specific combination of two Administrations. Reset to 1 after 999
3	Service type	2	Right	Zero	02 — Telephone 03 — Telex 04 — Telegram 05 — Facsimile 06 — Switched Data
4	Accounting month	4	—	—	Year and month of account — YYMM (January 01)
5	Administration sending data	6	Left	Space	Code as agreed bilaterally between the sending and receiving Administrations
6	Creation data	6	—	—	Year, month and day on which data tape created — YYMMDD
7	Administration receiving data	6	Left	Space	As for item 5
8	Filler	50	—	—	Space fill to give fixed size records

Note — The header and trailer length should be equal to the detail record length in order to simplify the data processing.

A.2 Detail record

Item number	Contents	Field size	Justification	Fill	Comments
1	Origin	4	Left	Space	F.96 [2] telegram country codes (and city codes if required). Use for telegram, telex and telephone services
2	Destination	4	Left	Space	F.96 [2] telegram country codes (and city codes if required). Use for telegram, telex and telephone services
3	Route in	2	Left	Space	F.96 [2] telegram country codes. Use for telegram, telex and telephone services. Route in: applicable only for transit traffic
4	Route out	2	Left	Space	F.96 [2] telegram country codes. Use for telegram, telex and telephone services. Route in: applicable only for transit traffic
5	Year and month of service	4	—	—	Calendar year and month (January 01) — YYMM
6	Payment indicator	1	—	—	1. Sent paid 2. Reversed charge (telephone)
7	Service sub-type	1	—	—	<i>For telephone</i> 1. Telephone 2. Sound programme 3. Television — video 4. Television — sound 5. Transit rentals <i>For telex</i> 1. Telex <i>For the telegraph service</i> 1. Telegraph <i>For Facsimile</i> 1. Phototelegraph 2. Bureau fax service <i>For switched data</i> 1. Packet switching 2. Circuit switching
8	Rate level 1	1	—	—	<i>Telephone</i> 1. Personal rate 2. Station rate 3. International subscriber dialling rate <i>Sound programme</i> 1. Medium passband 2. Wide passband <i>Telegraph</i> Tariff class indicator (see Rec. F.31 [1]) <i>Phototelegraph</i> 1. Public station to public station 2. Public station to private station 3. Private station to public station 4. Private station to private station <i>Bureau fax</i> 1. A4 size page 2. Other size page <i>Switched data</i> 1. Segment

A.2 Detail record

Item number	Contents	Field size	Justification	Fill	Comments
9	Rate level 2	1	—	—	<i>For telephone or telex</i> 1. Full rate 2. Reduced rate A ^{a)} 3. Reduced rate B ^{a)}
10	Number of telegrams or sessions	8	Right	Zero	If required can also be used in conjunction with item 14 to record number of surcharges, etc.
11	Number of minutes, words or pages	8	Right	Zero	
12	Number of segments	8	Right	Zero	
13	Monetary unit	1	—	—	1. SDR 2. Gold franc 3. Pound sterling 4. US dollar
14	Surcharges and other additional charges	1	—	—	Use this item in conjunction with a separate detail record and with total value recorded in item 16 1. Personal call telephone surcharges or fixed component of binary telegram charges 2. Conference call telephone charges 3. Messenger telephone charges 4. Reply paid telegram charges
15	Accounting rate	7	Right	Zero	Accounting rate share or other per unit charge due receiving Administration — 2 integer and 5 decimal places
16	Line value	11	Right	Zero	Accounting rate (item 15) × number of units (items 10, 11 and 12) — or lump sum associated with additional charge code in item 14. Nine integer and 2 decimal places
17	Gross accounting revenue	11	Right	Zero	Nine integer and 2 decimal places

^{a)} For telephone only.

A.3 Batch trailer

Item number	Contents	Field size	Justification	Fill	Comments
1	Record type identifier	3	—	—	Always <i>TRL</i>
2-6	(As for Batch header)	27	—	—	
7	Number of detail records in batch	6	Right	Zero	
8	Control total	12	Right	Zero	Hash total of all items 16 in detail records — 10 integer and 2 decimal places
9	Filler	36	—	—	Space fill to give fixed size records

Note 1 — New codes can be obtained from the Director of the CCITT. (Refer to § 5 of the Recommendation.)

Note 2 — Items not used should be “space” or “zero” filled as appropriate.

Note 3 — In telex transmissions, records may be followed by “new line” function characters. Records may also be terminated at the end of significant data by “new line” function characters and the remainder of the record will then be interpreted by the Administration receiving the data as “space” or “zero” fills as appropriate.

References

- [1] CCITT Recommendation *Telegram transmission system*, Vol. II, Rec. F.31.
- [2] CCITT Recommendation *List of destination indicators*, Vol. II, Rec. F.96.

SECTION 16

PRIVILEGE TELECOMMUNICATIONS

Recommendation D.193

SPECIAL TARIFF PRINCIPLES FOR PRIVILEGE TELECOMMUNICATIONS

(Melbourne, 1988)

The CCITT,

considering

(a) that according to Article 28 of the International Telecommunication Convention (Nairobi, 1982), the various cases in which free services are accorded are set forth in the Administrative Regulations annexed to the Convention;

(b) that No. 601 of Article 77 of the International Telecommunication Convention (Nairobi, 1982) mentions franking privileges as one of the procedural rules of the conferences and meetings of the ITU;

(c) that in response to the Articles of the Convention referred to in (a) and (b) above, the World Administrative Telegraph and Telephone Conference (Geneva, 1973) indicated in its Opinion No. 1 (Telegraph and Telephone Regulations [1]) more concrete rules on the franking privileges which should be observed by administrations and as far as possible by recognized private operating agencies;

(d) that provisions on the privilege telecommunications in the International Telecommunication Regulations [2] adopted by the World Administrative Telegraph and Telephone Conference (Melbourne, 1988) reflect the basic principles derived from the rules stipulated in the Opinion No. 1 of the World Administrative Telegraph and Telephone Conference (Geneva, 1973) [1];

(e) that additional provisions are needed in a CCITT Recommendation to complement the draft regulatory principles;

(f) that the Administration of the country in which the conferences and meetings of the ITU are held would normally need to agree on a reciprocal basis with the Administrations concerned in order to forego international accounting for privilege telecommunications,

(g) that more detailed accounting and operational aspects specific to the various services are covered in various D, E and F Series Recommendations,

recommends

1 During the conferences and meetings of the ITU, members of delegations, representatives of Members of the Administrative Council, senior officials of the permanent organs of the Union and their authorized colleagues attending such conferences and meetings, may be granted the privilege of exchanging their communications by telephone, telex, facsimile, teletex, data transmission or telegram free of charge with their Administration or the ITU relating either to matters under discussion by such conferences and meetings or to public international telecommunications, subject to arrangements made between the Administration of the country in which such conferences and meetings are held and the Administrations concerned.

2 During the conferences and meetings of the ITU, members of delegations, representatives of Members of the Administrative Council, senior officials of the permanent organs of the Union attending such conferences and meetings and staff of the secretariat of the Union seconded to such meetings and conferences may be granted the privilege of telephoning their country of residence free of charge within the limits of either one six-minute call per week or of two three-minute calls per week subject to arrangements made between the Administration of the country in which such conferences and meetings are held and the Administrations concerned.

3 Similarly, the persons referred to in § 2 may send telegrams free of charge to their country of residence within the limits of one telegram of up to 100 words or two telegrams of up to 50 words per week. Such telegrams shall bear the service indication CONFERENCE.

4 To facilitate the arrangements to be made between Administrations under §§ 1, 2 and 3 above, the Administrations of the countries in which conferences and meetings of the ITU are held should announce by means of the ITU Operational Bulletin their intention to provide privilege telecommunications.

5 Those Administrations that are unable to forego inclusion in international accounting of their share of the accounting rate for providing any of the telecommunications as specified in §§ 1, 2 and 3 above, should so notify the ITU General Secretariat, which will keep an up-to-date list of the restrictions announced. Failing an indication to the contrary from each Administration concerned, these restrictions shall continue to apply.

6 Administrations may notify a general exception to the provisions of this Recommendation.

References

- [1] *Final Acts of the World Administrative Telegraph and Telephone Conference, Telegraph Regulations, Telephone Regulations*, ITU, Geneva, 1973. (See also Preliminary Note No. 3, page XIV.)
- [2] *Final Acts of the World Administrative Telegraph and Telephone Conference, International Telecommunication Regulations*, ITU, Melbourne, 1988.

SECTION 17

SETTLEMENT OF INTERNATIONAL TELECOMMUNICATION BALANCES OF ACCOUNTS

Recommendation D.195

SETTLEMENT OF INTERNATIONAL TELECOMMUNICATION BALANCES OF ACCOUNTS

(Geneva, 1980; amended Melbourne 1988)

The CCITT,

considering

(a) that the Plenipotentiary Conference of the International Telecommunication Union (Nairobi, 1982) adopted the monetary unit of the International Monetary Fund (IMF) and the gold franc as monetary units to be used in the composition of accounting rates for international telecommunication services and in the establishment of international accounts;

(b) that the monetary unit of the IMF is at present the Special Drawing Right (SDR) and that international accounts may henceforth be established either in SDRs or in gold francs;

(c) that the final provisions for applying Article 30 of the International Telecommunication Convention (Nairobi, 1982) will have to be established in the administrative regulations;

(d) that the conference competent to revise these regulations cannot take place until 1988;

(e) that, in the meantime, interim provisions are required to apply Article 30 of the Convention;

(f) that Articles 30 and 31 of the International Telecommunication Convention (Nairobi, 1982) empower Administrations and recognized private operating agencies (RPOAs) to enter into special arrangements;

(g) provisions of § 6.3 (Monetary unit) of the International Telecommunication Regulations [1] and § 3.2 (Determination of the amount of payment) of its Appendix 1, covering the settlement of international telecommunication balances of accounts which have been adopted by the World Administrative Telegraph and Telephone Conference 1988 (WATTC 88),

having noted

the Resolution No. 70 by the Plenipotentiary Conference of the International Telecommunication Union (Nairobi, 1982) to the effect that, pending the decisions of the Conference competent to revise the Administrative Regulations [2], the parity rate between the gold franc and the SDR shall be that provided by the appropriate CCITT Recommendation,

recommends

in order to meet the varying requirements of all ITU member Administrations and RPOAs, until the entry into force of the new Regulations as adopted by WATTC for provisions of § 6.3 (Monetary unit) and § 3.2 (Determination of the amount of payment) of its Appendix 1:

1 the application of the following interim method for the conversion of gold franc balances into currencies of payment:

the use of the Special Drawing Right (SDR) as valued by the IMF as the basis for arriving at settlements in the specified currency. The method to be applied is as follows:

- i) convert the balance in gold francs into an amount of SDRs using a linking coefficient of 3.061 gold francs = 1 SDR;
- ii) adopt the following provisions for the conversion of the amount in SDRs into an amount in the currency of payment:
 - for currencies for which the SDR exchange rate is published by the IMF, use the exchange rate on the day prior to payment or the most recent rate published;
 - for other currencies, calculate the amount due in the the currency of payment as follows:
 - as a first stage*, convert the amount in SDRs into an intermediate currency for which the value is published daily by the IMF in terms of the SDR, using the exchange rate on the day prior to payment or the most recent rate published;
 - as a second stage*, convert the result thus obtained into the currency of payment, applying the latest rate of exchange quoted on the exchange market of the debtor country;

2 The application only of the method given in point ii) above, in the case where accounts are already established in SDRs.

Note – The present Recommendation shall not affect the establishment of special arrangements for mutually agreeable coefficients which Administrations are empowered to enter into in accordance with Articles 30 and 31 of the International Telecommunication Convention (Nairobi, 1982).

References

- [1] *Final Acts of the World Administrative Telegraph and Telephone Conference, International Telecommunication Regulations*, ITU, Melbourne, 1988.
- [2] *Final Acts of the World Administrative Telegraph and Telephone Conference, Telegraph Regulations, Telephone Regulations*, ITU, Geneva, 1973. (See also Preliminary Note No. 3, page XIV.)

SECTION 18

CHARGING AND ACCOUNTING FOR INTERNATIONAL TELECOMMUNICATION SERVICES PROVIDED OVER THE INTEGRATED SERVICES DIGITAL NETWORK (ISDN)

Recommendation D.210

GENERAL CHARGING AND ACCOUNTING PRINCIPLES FOR INTERNATIONAL TELECOMMUNICATION SERVICES PROVIDED OVER THE INTEGRATED SERVICES DIGITAL NETWORK (ISDN)

(Melbourne, 1988)

Preamble

This Recommendation sets out the general principles for charging and accounting to be applied by Administrations for the provision of international telecommunication services over an Integrated Services Digital Network (ISDN). These services are defined in the relevant CCITT Recommendations.

Charging and accounting principles for interworking between services provided over the ISDN and services provided over other networks are contained in other Recommendations in the Series D.200.

The CCITT,

considering

(a) that an Integrated Services Digital Network (ISDN) provides digital connections between user-network interfaces, enabling Administrations to offer integrated access to a wide range of international services in association with a multi-service signalling system;

(b) that it is desirable to achieve as far as practicable the harmonization of charging and accounting principles for the international services to be provided over the ISDN;

(c) that charging and accounting principles and structures for the ISDN should be flexible enough to accommodate the variety of ISDN implementation and regulatory approaches that apply in different countries;

(d) that it is desirable to adopt charging and accounting structures, which are as simple and easy to understand as is practicable with the wide range of services envisaged;

(e) that the installation of the ISDN in various countries will in all probability take place in several stages known as the "transition phase" during which ISDN and other networks will coexist and interwork, and that during this phase due account should be taken of charging and accounting structures and levels for services provided over other networks,

1 General principles

The charging and accounting principles applicable to the services to be provided over the ISDN should:

- a) take into account the provisions of existing D-Series and other pertinent CCITT Recommendations;
- b) take into account the different categories of service as defined in CCITT Recommendations I.210, I.211 and I.212 (see Annex A);
- c) take into account the network resources and the functions required for the provision of the services requested and their degree of utilization;
- d) not be discriminatory, i.e. should not depend on the type of information transmitted except where the costs incurred by the Administrations differ;
- e) ensure for Administrations a revenue which is commensurate with the costs borne by them;
- f) be based on the principle that each subscriber who authorized a specific service component would be billed by that subscriber's Administration.

2 Collection charges

2.1 Collection charges are a national matter.

2.2 Components

Collection charges for the ISDN may be divided into two fundamental components:

- the access component;
- the utilization component.

2.2.1 Access component

This component is intended to compensate Administrations for the facilities required for a customer to access a service or services, (i.e. those facilities specifically provided to that customer), and is independent of utilization.

Network access charges will be determined by national policy and may take account of the type of access provided and the type of services to which the customer subscribes.

2.2.2 Utilization component

2.2.2.1 Utilization charges should be in accordance with the service(s) requested by the customer and the basis of provision (demand, reserved¹⁾ or permanent¹⁾ basis).

These charges should in principle be determined on the basis of the network resources and any additional functions required to provide the service requested by the customer.

2.2.2.2 In principle, there should be no discrimination between telecommunication services which require the same resources and/or functions to provide them.

Additional charges may be raised for some supplementary services.

2.2.2.3 Utilization charges normally depend on one or more of the following parameters:

- service requested;
- basis of provision;
- duration of communication and/or the volume of data transmitted by the user;
- distance between correspondents;
- time of usage (to allow for modulation of tariffs according to peak/off-peak periods);
- call set-up;
- call attempts (for further study).

¹⁾ Principles for the permanent basis and reserved basis are for further study.

3 Accounting

3.1 Where applicable, Administrations should, by agreement, establish the accounting rate(s) for a given relation for a given telecommunications service.

3.2 International accounting rates should relate to the utilization of the network and should in principle be determined by the network resources and functions required to provide the service(s) requested by the customer.

3.3 In principle there should also be no discrimination between the level of accounting rate for services which require the same network resources and functions to provide them.

3.4 The accounting rate may be supplemented by additional components where additional functions in the network of the country of destination and/or transit are required to support requested teleservice and supplementary services (i.e. in addition to the supporting bearer capability).

Note – Transition phase: During the transition phase, Administrations may make adjustments to the application of the provisions of this Recommendation (see Recommendation D.251) in order to take into account:

- the arrangements that will have to be made to ensure interworking between the ISDN and other networks;
- the structures and levels of the charges in force and the effect of the evolution of tariffs on Administrations' income;
- provisions contained in relevant CCITT Recommendations particularly with respect to accounting.

ANNEX A

(to Recommendation D.210)

Summary description of bearer services, teleservices and supplementary services

The different categories of service as defined in CCITT Recommendations I.210, I.211 and I.212, and the relationship between them are summarized as follows:

Figure A-1/D.210 shows in a simplified graphic manner the scope of these service categories and the relationships between them.

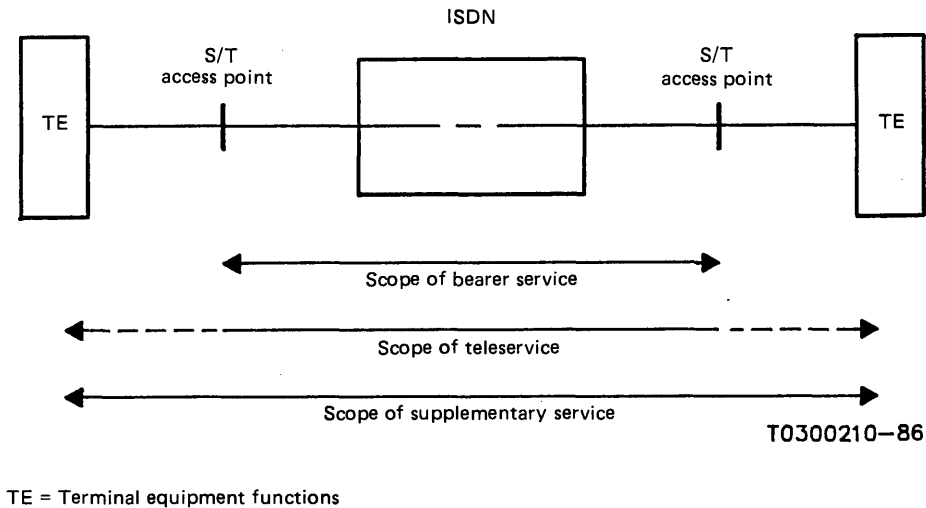


FIGURE A-1/D.210

Bearer services provide for information transfer between ISDN access points. They are characterized by a set of low layer attributes including information transfer and access attributes depicting the bearer capability associated with each bearer service, and general attributes. The attribute method of characterizing services is described in Recommendation I.130.

Teleservices provide the full capability for communication by means of terminal equipment functions and network functions and possibly functions provided by dedicated centres. Teleservices are characterized by the low layer attributes used to describe bearer services, and a set of high level attributes. The high level attributes generally relate to the functions and protocols of layers 4 to 7 of the Open Systems Interconnection (OSI) model.

Supplementary services modify or supplement bearer services and teleservices. They cannot be offered as stand alone services and must be offered in association with bearer services or teleservices.

Recommendation D.211

INTERNATIONAL ACCOUNTING FOR THE USE OF THE SIGNAL TRANSFER POINT (STP) IN CCITT SIGNALLING SYSTEM No. 7

(Melbourne, 1988)

The CCITT,

considering

(a) that in CCITT Signalling System No. 7 (SS No. 7), the signalling need not follow the same path as the traffic, but may be routed via an STP provided by a third Administration;

(b) that in SS No. 7, user-to-user information and inter-Administration data may be passed over the signalling system in addition to call control data;

(c) that although STP facilities are likely to be limited initially, as use of SS No. 7 grows, it is likely to become a common and important feature both for primary and reserve signalling;

(d) that use of STPs will increase network reliability and resilience, and enable the advantages offered by common channel signalling to be fully realized. Accounting should therefore be on as simple and reasonable basis as possible, so as not to discourage STP working;

(e) that the ISDN offers the capability of non-traffic-related information transfer, and user-to-user information transfer, which could be expected to have considerable impact on the signalling network in general, and the STP in particular, and therefore may in the longer term justify a more precise method of accounting;

(f) that it will be necessary to measure the levels and types of traffic routed via an STP not only for international accounting purposes, but also for route dimensioning and STP capacity purposes.

recommends

1 that in the interests of simplicity and of minimizing costs, no accounting should take place until a threshold of traffic pre-determined by the STP provider has been attained. Thereafter, STP providers should be remunerated on a flat rate basis. The level of remuneration will be determined by the STP provider, on the basis of an apportionment of the various cost elements;

2 that where STP facilities are provided by Administrations on a reciprocal basis including temporary routing via STP facilities, for example in the case of network failure, Administrations may bilaterally agree to dispense with international accounting;

3 that as the usage of STP facilities increases, and experience of the pattern of traffic over the signalling system is gained, a requirement to account according to traffic volumes may emerge. Hence it should be possible to monitor STP usage so that the levels and types of traffic concerned can be kept under review.

**CHARGING AND ACCOUNTING PRINCIPLES TO BE APPLIED
TO INTERNATIONAL CIRCUIT MODE DEMAND BEARER SERVICES
PROVIDED OVER THE INTEGRATED SERVICES DIGITAL NETWORK (ISDN)**

(Melbourne, 1988)

Preamble

This Recommendation sets out the general principles for charging and accounting to be applied by Administrations for the provision of international circuit mode demand bearer services provided over the ISDN. These services are defined in the relevant CCITT Recommendations.

The CCITT,

considering

(a) Recommendation D.210;

(b) that the following circuit mode bearer services have been categorized thus far as essential for demand international service:

- speech (for voice),
- 3.1 kHz audio (voice or voiceband data up to 9.6 kbit/s),
- 64 kbit/s unrestricted (voice and/or high speed data);

recommends

1 General principles

In principle, there should be no charging and accounting discrimination between bearer services which require the same network resources and/or functions to provide the service requested by the customer.

2 Collection charges

2.1 Collection charges should be in accordance with the bearer service requested by the customer.

2.2 If the network resources necessary to support the requested services are different:

2.2.1 the basic utilization charges for a service requiring 64 kbit/s unrestricted may in principle be at a rate higher than those for a service requiring 3.1 kHz audio,

2.2.2 the basic utilization charges for a service requiring 3.1 kHz audio may in principle be higher than those for a service requiring speech only.¹⁾

2.3 Measurement of a call for charging purposes should in principle be based on duration and should commence when the information channel is open for communication.¹⁾

3 Accounting

3.1 Administrations should, by agreement, establish the accounting rate(s) applicable in a given relation.

The accounting rate should be divided into terminal shares payable to the Administrations of the terminal countries and, where applicable, into transit shares payable to the transit Administration. These shares should be established in accordance with the relevant provisions of the Administrative Regulations [1] [2] and the CCITT Recommendations.

¹⁾ These points are further study.

3.2 The accounting rate should, in principle, relate to the network resources and functions required to provide the service requested.

3.3 Measurement of traffic for accounting purposes should in principle be based on duration and take into account other relevant CCITT Recommendations.

References

- [1] *Final Acts of the World Administrative Telegraph and Telephone Conference Telegraph Regulations, Telephone Regulations*, ITU, Geneva, 1973. (See also Preliminary Note No. 3, page XIV.)
- [2] *Final Acts of the World Administrative Telegraph and Telephone Conference, International Telecommunication Regulations*, ITU, Melbourne, 1988.

Recommendation D.230

**GENERAL CHARGING AND ACCOUNTING PRINCIPLES
FOR SUPPLEMENTARY SERVICES ASSOCIATED WITH INTERNATIONAL
TELECOMMUNICATION SERVICES PROVIDED OVER THE INTEGRATED
SERVICES DIGITAL NETWORK (ISDN)**

(Melbourne, 1988)

Preamble

This Recommendation sets out the general principles for charging and accounting to be applied by Administrations for the provision of supplementary services associated with international telecommunication services provided over the ISDN. These services are defined in the relevant CCITT Recommendations.

The relevant provisions for certain specific supplementary services are to be found in separate D-series Recommendations.

The CCITT,

considering

- (a) the general provisions of Recommendations D.210 and D.220;
- (b) that the introduction of ISDN enables Administrations to offer a range of supplementary services;
- (c) that supplementary services are associated with telecommunication services (bearer services or tele-services) which they complement or modify, and cannot be offered as stand alone services;
- (d) that provision of supplementary services may be inherent to call establishment procedures in the ISDN or may require implementation of additional resources or functions provided by:
 - network capabilities;
 - terminal capabilities;
 - capabilities of dedicated service centres;
 - or, some combinations of these capabilities;
- (e) that although the establishment of charging structures and levels is a national matter, a harmonized approach to certain charging principles is desirable in order to encourage the understanding and use of supplementary services by customers.

recommends

1 Collection charges

1.1 the establishment of the collection charges is a national matter.

1.2 In addition to those charges relating to the provision of telecommunication services (bearer services or teleservices), Administrations may apply extra charges to cover additional costs incurred when providing supplementary services.

1.3 Depending on the supplementary services offered, additional charges may be raised by one of the following methods:

- a) through a rental or subscription charge for supplementary services whose costs do not depend on their level of utilization;
- b) by applying utilization charges for supplementary services whose costs of provision depend on their level of utilization;
- c) when appropriate, by a combination of methods described under a) and b) above;
- d) without additional charge.

1.4 Administrations may also provide groups of supplementary services either:

- a) without additional charge, or
- b) by collecting a single charge for the group of services provided.

2 Accounting

2.1 When additional costs associated with the provision of supplementary service are incurred by the Administration of the destination country and if appropriate by the Administration(s) of the transit country(ies), Administrations should establish additional remuneration by agreement.

2.2 This additional remuneration should supplement the accounting rate(s) for telecommunication service(s) (bearer services or teleservices). This may be:

- a) usage dependent (duration, volume, per call),
- b) usage independent.

Recommendation D.231

CHARGING AND ACCOUNTING PRINCIPLES RELATING TO THE USER-TO-USER INFORMATION (UUI) SUPPLEMENTARY SERVICE

(Melbourne, 1988)

Preamble

The present Recommendation deals only with user-to-user information exchanged over the signalling channel in association with a communication on the information channel [B-channel(s)]. The question of the offering of services on the signalling channel independently of the use of the information channel is for further study.

The CCITT,

considering

(a) that a limited volume of user-to-user information may be exchanged over the signalling channel during the call set-up and clear down phases;

(b) that a limited volume of user-to-user information may be exchanged over the signalling channel during the call set-up phase, even if a call subsequently fails to mature on the information channel [B-channel(s)];

(c) that user-to-user information may also be exchanged over the signalling channel throughout the duration of a call over the information channel;

(d) that the exchange of user-to-user information over the signalling channel will occupy channel capacity, involve a degree of processing and will impact on signalling network dimensioning, and thereby represent an additional cost to Administrations;

(e) that the possibility to exchange user-to-user information over the signalling channel represents an additional, and chargeable supplementary service within ISDN for customers,

and recognizing

(a) that although collection charges are essentially a national matter, a harmonised approach towards charging and accounting principles is desirable;

(b) that initially, the volumes of traffic are likely to be small, and a flexible approach towards the options for raising a charge for this supplementary service is desirable until traffic patterns are established and experience gained,

recommends

1 Charging principles

1.1 User-to-user information exchanged over the signalling channel during call set-up and clear down as well as during clear set-up only, should be charged by one of the following methods:

- a) by inclusion in the subscription or rental charges raised against customers;
- b) by setting an appropriate minimum call charge for communications originated over the information channel;
- c) by a per call fee¹⁾ (for further study);
- d) when appropriate, by a combination of methods a) and b) or a) and c) above;
- e) for the user-to-user information exchanged during call set-up it may also be appropriate to charge according to the volume of information exchanged.^{2), 3)}

1.2 User-to-user information exchanged over the signalling channel while a call is in progress over the information channel should, in principle, be charged according to the volume of information (data) exchanged over the signalling channel.^{2), 3)}

2 Accounting

2.1 To minimise the costs associated with recording and processing, it is desirable that the traffic units used for accounting purposes should be compatible with those used for customer charging.

2.2 User-to-user information exchanged over the signalling channel during call set-up and clear down or during set-up only should be accounted for by one of the following methods to be agreed between Administrations, as a supplement to the normal accounting rates for the bearer service, or teleservice, with which the user-to-user information supplementary service is associated:

- a) a monthly flat rate (for further study),
- b) a per call rate.

2.3 User-to-user information exchanged over the signalling channel while the associated bearer service or teleservice communication is in progress should, in principle, be accounted for according to the volume of information exchanged over the signalling channel. Alternatively, Administrations may agree to adopt the method 2.2 a) or b) above for this category of user-to-user information.

2.4 The accounting rate established by agreement between Administrations should be divided into terminal shares and, when appropriate, into transit shares.

2.5 Administrations may bilaterally agree not to account for user-to-user information service (or mode).

¹⁾ In principle, this charge should not apply to unsuccessful call attempts due to congestion or a fault in the Administration's equipment.

²⁾ The determination of the volume unit is for further study. One simple solution would be to charge for the number of user-to-user data blocks exchanged.

³⁾ In practice, the introduction of a charge will be determined by the extent to which user-to-user information actually will be exchanged, and initially at least, Administrations may deem the facility to be covered by the normal bearer service or teleservice charges, or by the subscription or rental charges raised against customers.

Recommendation D.250

GENERAL CHARGING AND ACCOUNTING PRINCIPLES FOR NON-VOICE SERVICES PROVIDED BY INTERWORKING BETWEEN THE ISDN AND EXISTING PUBLIC DATA NETWORKS

(Melbourne, 1988)

The CCITT,

considering

- (a) that, during the transition period, it is essential that Administrations provide interworking between existing public data networks and the ISDN in order to continue providing users with non-voice services;
- (b) that, it is desirable to adopt general charging and accounting principles for these services when their provision needs interworking between ISDN and existing public data networks;
- (c) that, in principle, the interworking between these networks should take place in the ISDN country or in the country of origin (if ISDN is available in both terminal countries);
- (d) the relevant D-series Recommendations,

recommends

1 General interworking principles

See Recommendation D.15 concerning the general charging and accounting principles for non-voice services provided by interworking between public data networks.

2 Specific interworking principles

Specific applications for interworking not addressed by the general principles of Recommendation D.15 are for further study.

Recommendation D.251

GENERAL CHARGING AND ACCOUNTING PRINCIPLES FOR THE BASIC TELEPHONE SERVICE PROVIDED OVER THE ISDN OR BY INTERCONNECTION BETWEEN THE ISDN AND THE PUBLIC SWITCHED TELEPHONE NETWORK

(Melbourne, 1988)

The CCITT,

considering

- (a) that, during the transition period, it is essential that Administrations provide interconnection between the public switched telephone network (PSTN) and the ISDN in order to continue providing users with a basic telephone service;

(b) that it would thus be advisable to adopt general charging and accounting principles to be applied to this service irrespective of whether it is provided over the ISDN, the PSTN or by interconnection between these networks;

(c) the relevant CCITT Recommendations,

recommends

1 Charging principles for the basic telephone service

1.1 Collection charges are a national matter.

1.2 *Basic telephone service provided by interconnection between the ISDN and the PSTN*

In any given relation there should, in principle, be a common collection charge for the basic telephone service provided by interconnection of the ISDN and the PSTN, and the telephone service provided over the PSTN.

1.3 *Basic telephone service provided over the ISDN*

The collection charge should take account of charges for similar services on the PSTN, in addition to commercial and network developmental objectives.

2 International accounting

2.1 The Administrations may agree to apply the same accounting rates for the basic telephone service irrespective of whether it is provided over the ISDN, the PSTN or by interconnection between these two networks.

2.2 The possibility of applying a different accounting rate for the basic telephone service provided over the ISDN is for further study.

PART II

Recommendations D.300 R to D.606 R

RECOMMENDATIONS FOR REGIONAL APPLICATION

STANDARD RATES APPLICABLE IN THE INTERNATIONAL TELECOMMUNICATION SERVICES

NOTE

The geographical scope of the Recommendations of this Part is normally limited, in the plan of the CCITT, to the region concerned which is generally specified in the title of the Recommendation. Naturally the Recommendations may be considered by Administrations of other regions as useful material for information and comparison, particularly for the purpose of international tariff studies.

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SECTION 1

RECOMMENDATIONS APPLYING IN EUROPE AND THE MEDITERRANEAN BASIN

Recommendation D.300 R

DETERMINATION OF ACCOUNTING RATE SHARES AND COLLECTION CHARGES IN TELEPHONE RELATIONS BETWEEN COUNTRIES IN EUROPE AND THE MEDITERRANEAN BASIN¹⁾

Introduction

When, in full exercise of their sovereignty, the Administrations of the countries of Europe and the Mediterranean Basin negotiate among themselves agreements for determining the accounting rate shares and when they fix the collection charges to be applied in their telephone relations, it is recommended that they take into consideration:

- for the determination of accounting rate shares and accounting rates, the provisions of § 2 (Determination of accounting rates) of this Recommendation;
- for fixing the collection charges, the provisions contained in § 3 of this Recommendation;
- for fixing tariffs for frontier relations, the provisions contained in § 4 of this Recommendation.

In accordance with Article 30 of the *International Telecommunication Convention*, Nairobi, 1982, the standard rates given in this Recommendation are expressed in the monetary unit of the International Monetary Fund (IMF), the Special Drawing Right (SDR), and in gold francs (G. Fr.).

1 Explanation of some of the terms used in this Recommendation

An explanation of some of the terms used in this Recommendation is given in Recommendation D.000.

2 Determination of accounting rate in telephone relations between countries in Europe and the Mediterranean Basin

2.1 General

2.1.1 Since the setting up of any international call involves both the international network and the national networks of the terminal countries, the accounting rate share due to each country is derived from three basic elements, to which separate standard rates are applied:

- the *line* (transmission) part of the international network, which includes the various transmission systems used and is a function of the distance;
- the international exchange, i.e. the *switching* part of the international circuit, plus the terminal transmission equipment;
- the *national extension*, which denotes that part of the national network of each terminal country involved in completing the connection.

¹⁾ Countries in the Mediterranean Basin are countries not belonging to Europe but bordering the Mediterranean Sea.

2.1.2 In special cases where the *line* (transmission) part of an international connection is:

- a tropospheric scatter link, or
- a radio link,

the provisions of this Recommendation with regard to the determination of an accounting rate share in relation to the length of the international circuit are not applicable and accounting rate shares should be agreed upon between the Administrations concerned.

Cases in which the *line* (transmission) part of a connection is a satellite link are dealt with in Annex D to this Recommendation.

2.1.3 When a reduced rate is introduced in a given relation, the accounting rates remain fixed in accordance with the provisions below, except in the case of special agreement. Each Administration of origin will determine the collection charges for its outgoing traffic.

2.2 *Charging zones*

For calculating accounting rate shares, each country may be divided into charging zones. If need be, different charging zones may be fixed in a given country for traffic exchanged with different countries.

It is desirable that the number of charging zones for international traffic, in any one country, should be reduced to a minimum. As a general rule, in services between non-adjacent countries, each country should constitute one single zone.

2.3 *Calculation of distances (line part)*

2.3.1 *Distances to be taken into consideration*

2.3.1.1 *General case*

2.3.1.1.1 In determining the share payable to a country for the use of international circuits, the distance to be taken into consideration is:

in a terminal country

- the *crowflight distance* between:
 - a) the point at which the international circuit crosses the frontier, and
 - b) the international exchange at which the circuit terminates;

in a transit country

- the *crowflight distance* between the two frontier points at which the international circuit enters and leaves the country in question.

2.3.1.1.2 The same provisions apply to the determination of crowflight distances for groups, supergroups, mastergroups and supermastergroups.

The above provisions for the calculation of distances apply to international circuits both on land cables and on radio-relay links.

2.3.1.2 *Special cases*

2.3.1.2.1 *Radio-relay links crossing the sea or a third country*

When a frontier is crossed by a radio-relay section of an international circuit passing over a third country or over the sea, without an intermediate relay station, the frontier point for measuring the circuit length shall be the point midway between the two relay stations on either side of the frontier.

2.3.1.2.2 *Submarine cables*

With regard to international circuits which are routed in submarine cables, the distance to be used for accounting will be calculated as follows:

- a) for the land section of the circuit to the submarine cable station, the distance shall be calculated in accordance with the general principles (i.e. the crowflight distance), it being assumed that the point at which the circuit crosses the frontier is the cable station;
- b) for the submarine cable section, the distance used shall be the actual route distance between the submarine cable stations as determined and agreed by the joint owners of the cable; the distance will be divided appropriately (normally 50/50) between the countries at the extremities of the cable.

2.3.1.2.3 *Special itineraries*

In exceptional circumstances, multiplication factors may be applied to the crowflight distance, from which the terminal and transit shares are calculated, to take account of special itineraries. For example, in the case of a direct transit country, the crowflight distance between the points on the frontier at which the circuit enters and leaves the country may (in exceptional circumstances) be replaced by a length representing the sum of two crowflight segments making up a broken line, etc.

2.3.2 *Possibility of weighting distances*

For calculation of the crowflight distances for the international section a weighting according to the number of circuits is normally applied in a given relation to simplify accounting:

- when there are several international arteries with different itineraries terminating at an international exchange;
- when there are several international exchanges in a country for the relation concerned.

This weighting serves to determine a length (crowflight distance) for fixing the accounting rate share relating to the international section and it would remain in force as long as the structure of the network was not significantly changed. This length of the international section would then be used to fix the *international section* element for the charges for international telephone and telegraph circuits, groups, supergroups, mastergroups and supermastergroups.

2.3.3 *Rounding off distances*

2.3.3.1 Distances less than 50 km shall be rounded up to 50 km.

Example: distance of 24 km rounded up to 50 km.

2.3.3.2 Other distances shall be rounded to the nearest multiple of 50 km.

Examples:

- distance of 72 km rounded to 50 km;
- distance of 126 km rounded to 150 km;
- distance of 175 km rounded to 200 km.

2.3.3.3 This rounding rule applies to the distances in each of the terminal countries and in each of the transit countries and is applied to the total distance calculated for any one country. It is applicable to the remuneration of Administrations both on the basis of a flat-rate price for the facilities made available and on the basis of traffic units.

2.3.3.4 When distances are weighted in accordance with the provisions of § 2.3.2 above, the rounding shall be applied only after the weighted distance has been calculated.

2.3.4 *Existence of several routes in a given relation*

When in a given relation there are several routes traversing different countries, these transit countries shall in all cases receive the share or flat-rate price normally due to them for the distance between the points of entry and exit; any cost of equalizing collection charges in a relation comprising different routes shall be borne solely by the Administration of the country of origin and no deduction shall be made from the remuneration due to the transit countries.

2.4 Standard rates to be applied for international accounting²⁾

For international accounting purposes, there are two methods of remuneration for the facilities made available by Administrations:

- on the basis of traffic units;
- on the basis of a flat-rate price for the facilities made available.

2.4.1 Remuneration on the basis of traffic units

To determine the accounting rate shares due to each country, the following standard rates, *per minute of conversation time*, are recommended:

1) International network

a) Manual operation

	SDR	G.Fr
– per 100 km of international circuit (excluding any national circuit required for connecting the international exchange to the national exchange serving the subscriber) ^{a)}	0.013	0.04
– for the manual international exchange in the country of origin or destination ^{b)}	0.653	2.00
– for a manual international exchange in a transit country ^{b)}	0.653	2.00

b) Semi-automatic and automatic operation

	SDR	G.Fr
– per 100 km of international circuit (excluding any national circuit required for connecting the international exchange to the national exchange serving the subscriber) ^{a)}	0.006	0.02
– for the semi-automatic international exchange in the country of origin ^{b)}	0.588	1.80
– for the automatic international exchange in the country of origin ^{b)}	0.059	0.18
– for the automatic and semi-automatic international exchange in the country of destination (including code 11 and 12 operator service) ^{b)}	0.036	0.11
– for an automatic international transit exchange (in a transit country) ^{b)}	0.052	0.16

^{a)} The standard rates adopted for the *line* element per 100 km of circuit and per minute may not be appropriate to some small capacity submarine cables. In these cases the rates should be fixed by agreement among the parties concerned.

^{b)} This share includes the cost of the transmission equipments for one extremity in terminal operation and for two extremities in transit operation.

²⁾ Use of charged time for international accounting instead of conversation time

According to their equipment, some Administrations may have to use charged time data for international accounts instead of conversation time, the charged time being given, for example, by the operator's ticket. In such a case, the Administration of origin will consult the Administration of destination and, when necessary, the Administration of transit countries, to see whether it is necessary to adjust the number of minutes entered in the international accounts to make allowance for the small difference which may exist between the charged time they use and the conversation time they should use for accounting according to Recommendation D.150 and the present Recommendation.

2) *National extension*

An amount may be added to cover the costs of the extension of calls over the national network.

Taking into account:

- the (weighted average) number of national exchanges by which an outgoing or incoming international call is routed,
- the (weighted average) number of terminal transmission equipments (component *A*)³⁾ by which an outgoing or incoming international call is routed,
- the (weighted average) crowflight length of the national circuit used for setting up an outgoing or incoming international call,
- the cost per minute of use of a national exchange in an international call,
- the cost per minute of use of a terminal transmission equipment (component *A*)³⁾ in an international call;
- the cost per minute of use of 100 km (crowflight) of national circuit in an international call,
- the administrative cost per minute of an outgoing or incoming international call.

Administrations are recommended, when determining the remuneration of their national extension per minute of international call, not to exceed the maximum values indicated below:

- a) for outgoing traffic: 0.131 SDR or 0.40 G. Fr.;
- b) for incoming traffic: 0.114 SDR or 0.35 G. Fr.

2.4.2 *Remuneration on the basis of a flat-rate price for the facilities made available*

2.4.2.1 *Remuneration of a direct transit country*

2.4.2.1.1 To determine the flat-rate price for remuneration for the transmission facilities made available by Administrations, the following standard rates are recommended.

	Per year and per 100 km of transmission channel (line part)	
	SDR	G.Fr
– for a telephone circuit ^{a), b)}	392	1 200
– for a group ^{a), b)}	3 920	12 000
– for a supergroup ^{a), b)}	16 335	50 000
– for a mastergroup ^{b)}	65 338	200 000
– for a supermastergroup ^{b)}	179 680	550 000

^{a)} To allow for the small capacity of some submarine cables, a correction factor may be applied to these rates.

^{b)} Including the use of modulation and demodulation equipments or throughband filters in the direct transit country, when the transit transmission facilities are given by complete unit.

³⁾ The cost of international telecommunication circuits should be expressed in the form $A + B \times \frac{l}{100}$. *A* represents all costs relating to terminal transmission equipment for one end of the international circuit, *B* represents the costs per 100 km (crowflight distance) of the circuit.

2.4.2.1.2 When a circuit leased to a private user passes through a direct transit country, the Administration of this country will be remunerated by the Administrations of the terminal countries with a flat-rate price on the same basis as if the circuit were an ordinary public service circuit applying the rates in § 2.4.2.1.1 above.

The same rule applies to the lease to a private user of groups, supergroups, etc.

2.4.2.2 Remuneration of a country of destination

To determine the flat-rate price for remuneration of countries of destination for facilities made available by Administrations, the following standard rates are recommended:

1) For the transmission channel (line part)

	Per year and per 100 km	
	SDR	G.Fr
– for a telephone circuit ^{a)}	392	1 200
– for a group ^{a)}	3 920	12 000
– for a supergroup ^{a)}	16 335	50 000
– for a mastergroup	65 338	200 000
– for a supermastergroup	179 680	550 000

^{a)} To allow for the small capacity of some submarine cables a correction factor may be applied to the above rates.

2) For the international exchange (including the terminal transmission equipment)

– per year and per international circuit connected:

<i>Manual operation</i>	<i>Automatic operation</i>
$0.653^a) \times 30\,000^b)$ or $2.00^a) \times 30\,000^b)$ = 19 590 SDR = 60 000 G.Fr	$0.036^a) \times 65\,000^c)$ or $0.11^a) \times 65\,000^c)$ = 2340 SDR = 7150 G.Fr

3) For the national extension

– per year and per international circuit connected:

<i>Manual operation</i>	<i>Automatic operation</i>
$PN^d) \times 30\,000^b)$	$PN^d) \times 65\,000^c)$

^{a)} The cost of the transmission equipment for one extremity is included in the amounts of 0.653 SDR and 0.036 SDR or 2.00 and 0.11 G.Fr.

^{b)} Average number of minutes of traffic routed per year and per manual international telephone circuit.

^{c)} Average number of minutes of traffic routed per year and per semi-automatic or automatic international telephone circuit.

^{d)} PN represents the amount, per minute of conversation time, of the share to be fixed by each Administration for the extension of the connection on national territory.

- 4) The remuneration for terminal transmission equipment has been included in the above rates [2) of § 2.4.2.2] based on annual costs per extremity of:
- 9800 SDR or 30 000 G. Fr. for a supermastergroup;
 - 5227 SDR or 16 000 G. Fr. for a mastergroup;
 - 2189 SDR or 6 700 G. Fr. for a supergroup;
 - 1045 SDR or 3 200 G. Fr. for a group;
 - 425 SDR or 1 300 G. Fr. for a circuit.

2.4.3 All the amounts given in § 2 above are reproduced in the three tables in Annexes A, B and C.

2.5 *Remuneration for facilities made available for the extension of intercontinental circuits*

In principle the rates mentioned in § 2 above apply also to the remuneration of facilities made available for the extension of intercontinental cable or satellite circuits.

2.6 *Extension of submarine cables*

For the extension of submarine cables through their national territory, Administrations may offer to countries using such submarine cables alternative charging conditions in the form of special transit charges called “rights of way” (ROW). One specific “ROW” charging method is described in Annex E to this Recommendation, but it is recognized that other “ROW” charging methods, the composition and method of application of which shall be determined by bilateral agreement, could be offered by direct transit countries.

3 **Determination of collection charges in telephone relations between countries in Europe and the Mediterranean Basin**

3.1 *General*

The establishment of the collection charge is a national matter. Whilst, in general, Administrations correlate collection charges and accounting rates, the two will not necessarily be the same for a number of reasons, for example:

- a) in most countries, collection charges and accounting rates will be expressed in different currencies;
- b) collection charges and accounting rates may be based on different traffic units;
- c) the value of national currencies may fluctuate in relation to the SDR or the gold franc;
- d) collection charges may be influenced by government fiscal policies;
- e) Administrations frequently establish common collection charges for geographical zones or groups of countries;
- f) in many relations there will be different routes with different accounting rates to which a single collection charge will be applied.

3.2 *Charging zones*

For fixing collection charges each country may be divided into charging zones. If need be, different charging zones may be fixed in a given country for traffic exchanged with different countries.

It is desirable that the number of charging zones for international traffic, in any one country, should be reduced to a minimum. As a general rule, in services between non-adjacent countries, each country should constitute one single zone.

The fixing of zones for collection charges does not imply the same for zones for accounting rate shares which can be weighted appropriately to make allowances for a zonal structure. Similarly, the fixing of zones for accounting rate shares (§ 2.2) does not imply any requirement for fixing zones for collection charges.

3.3 *Determination of collection charges*

3.3.1 The collection charge, in principle, should be the equivalent in national currency of the accounting rate. If, taking into account the factors in §§ 3.1 and 3.2 above, an Administration wishes to fix a collection charge at a higher or lower amount than the direct equivalent of the accounting rate, this Administration may apply a multiplication factor K. This factor K should not be more than 1.8 when applied to the total accounting rate in the relation concerned.

As a general principle, Administrations should make every effort to avoid too large a dissymmetry between the collection charges applicable in each direction of the same relation and should endeavour to agree upon application of the same factor K. Collection charges should be fixed at reasonable levels and the factor $K = 1.8$ is a maximum which should not be automatically applied. The factor K may be different for the different relations operated by an Administration.

Note – It is emphasized that the application of a factor K should not affect international accounting.

3.3.2 In considering the collection charges for a relation in which automatic and semi-automatic working both exist, each Administration should decide to fix its charges:

- either by establishing different charges for each method of operation;
- or by establishing a single collection charge weighted according to the volume of each type of traffic.

3.3.3 To recover the costs of operator assistance, Administrations may levy additional charges per call, the level of which is a national matter.

4 **Frontier relations between countries in Europe and the Mediterranean Basin**

The conditions governing the establishment and operation of frontier relations depend largely on the structure of the national networks in the frontier areas. These conditions tend to alter, particularly as a result of network automation, which leads in turn to automation of frontier relations. Consequently, the collection charges applied to these relations are tending to become increasingly subject to the limitations imposed by the automatic charging equipments used. The collection charges and accounting rates to be applied to frontier relations should therefore be fixed by agreement between the Administrations concerned.

Whenever the situation permits, there should be no exchange of international accounts for frontier calls, the entire charge being retained by the Administration which collects it. The latter should, however, supply all frontier traffic information required to the Administration of the country of destination.

ANNEX A

(to Recommendation D.300 R)

Standard rates to be applied in Europe and the Mediterranean Basin in determining accounting rate shares in the telephone service (traffic unit basis)

A – Accounting rate shares applicable in *terminal countries* per *minute* of conversation time

Direction of operation	Manual operation				Semi-automatic operation				Automatic operation			
	Transmission (per 100 km of circuit) ^{a)}		International exchange ^{b)}		Transmission (per 100 km of circuit) ^{a)}		International exchange ^{b)}		Transmission (per 100 km of circuit) ^{a)}		International exchange ^{b)}	
	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr
Outgoing	0.013	0.04	0.653	2.00	0.006	0.02	0.588	1.80	0.006	0.02	0.059	0.18
Incoming	0.013	0.04	0.653	2.00	0.006	0.02	0.036	0.11	0.006	0.02	0.036	0.11

B – Accounting rate shares applicable in *transit countries* per *minute* of conversation time

Direct transit				Switched transit							
Manual		Automatic		Manual				Automatic			
Transmission (per 100 km of circuit) ^{a)}		Transmission (per 100 km of circuit) ^{a)}		Transmission (per 100 km of circuit) ^{a)}		International exchange ^{b)}		Transmission (per 100 km of circuit) ^{a)}		International exchange ^{b)}	
SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr
0.013	0.04	0.006	0.02	0.013	0.04	0.653	2.00	0.006	0.02	0.052	0.16

^{a)} The standard rates adopted for the *line* element per 100 km of circuit and per minute may not be appropriate to some small capacity submarine cables. In these cases the rates should be fixed by agreement among the parties concerned.

^{b)} Including the cost of the transmission equipments for one extremity in terminal operation and for two extremities in transit operation.

ANNEX B

(to Recommendation D.300 R)

**Standard rates to be applied in Europe and the Mediterranean Basin
in remuneration for transmission facilities
made available by Administrations in a direct transit country
(flat-rate price basis)**

Unit element considered ^{a)}	Transmission (line part)	
	Rates per 100 km per annum	
	SDR	G.Fr
Telephone circuit ^{b), c)}	392	1 200
Group ^{b), c)}	3 920	12 000
Supergroup ^{b), c)}	16 335	50 000
Mastergroup ^{c)}	65 338	200 000
Supermastergroup ^{c)}	179 680	550 000

^{a)} The correspondence between the various unit elements considered is as follows, with reference to a 4 kHz bandwidth per telephone circuit:

- a group consists of 12 telephone circuits,
- a supergroup consists of 5 groups, i.e. 60 telephone circuits,
- a mastergroup consists of 5 supergroups, i.e. 300 telephone circuits,
- a supermastergroup consists of 3 mastergroups, i.e. 900 telephone circuits.

^{b)} To allow for the small capacity of some submarine cables a correction factor may be applied to the above rates.

^{c)} Including the use of modulation and demodulation equipments or throughbands filters in the direct transit country, when the transit transmission facilities are given by complete unit.

ANNEX C

(to Recommendation D.300 R)

Standard rates to be applied in Europe and the Mediterranean Basin in remuneration for facilities made available between Administrations in a destination country (flat-rate price basis)

Unit element considered	Transmission (line part)		International exchange		National extension	
	Per 100 km and per year		Operation		Operation	
			Manual	Automatic	Manual	Automatic
	SDR	G.Fr	per year	per year	per year	per year
Circuit ^{a)}	392	1 200	$0.653^b \times 30\,000^c$ $= 19\,590 \text{ SDR}$ or $2.00^b \times 30\,000^c$ $= 60\,000 \text{ G.Fr}^a$	$0.036^b \times 65\,000^d$ $= 2\,340 \text{ SDR}$ or $0.11^b \times 65\,000^d$ $= 7\,150 \text{ G.Fr}^a$	$PN^e \times 30\,000^c$	$PN^e \times 65\,000^d$
Group ^{a)}	3 920	12 000	not applicable	not applicable	not applicable	not applicable
Supergroup ^{a)}	16 335	50 000				
Mastergroup	65 338	200 000				
Supermastergroup	179 680	550 000				

^{a)} To allow for the small capacity of some submarine cables a correction factor may be applied to the above rates.

^{b)} The cost of the transmission equipment for one extremity is included in the figures of 0.653 and 0.036 SDR or 2.00 and 0.11 G.Fr and was based on annual costs of 425 SDR or 1300 G.Fr for a circuit, which amount includes an allowance for the terminal equipment of a group (1045 SDR or 3200 G.Fr) and supergroup (2189 SDR or 6700 G.Fr).

^{c)} Average number of minutes of traffic routed per year and per manual international telephone circuit.

^{d)} Average number of minutes of traffic routed per year and per semiautomatic or automatic international telephone circuit.

^{e)} PN represents the amount, per minute of conversation time, of the share to be fixed by each Administration for the extension of the connection on national territory beyond the international exchange.

ANNEX D

(to Recommendation D.300 R)

Remuneration for the facilities used to set up telephone-type satellite circuits (Intelsat system) via an earth station in Europe and the Mediterranean Basin

D.1 Flat-rate charges for the provision of telephone-type circuits set up via a foreign European earth station

Preliminary note

The charges are the same, whether the telephone-type circuit is used in an intra-European or an intercontinental relation.

When an Administration operates a direct satellite telephone-type circuit set up via a foreign European earth station, the following standard rates are recommended for the remuneration of the facilities provided by the country operating the earth station:

D.1.1 for the remuneration of the international circuit section between the border of the outgoing terminal country and the international exchange of the country operating the earth station⁴⁾:

- in accordance with the standard rates set out in § 2.4.2.2, 1) of this Recommendation, 392 SDR or 1200 G. Fr. per 100 km of transmission channel (*line part*) per annum;
- where appropriate, the amount laid down in § 2.4.2.2, 4) of this Recommendation, to pay for the terminal equipment (component *A*)⁵⁾ in the international exchange.

D.1.2 for the remuneration of the earth station and the national extension from the international exchange mentioned in § D.1.1, above, to that station:

- 9800 SDR or 30 000 G. Fr. per telephone-type circuit and per annum.

D.1.3 for the remuneration of the space segment, the amount fixed by Intelsat and usually payable directly to that organization.

D.2 Traffic unit price applicable in telephone relations between countries of Europe and the Mediterranean Basin, for traffic routed via satellite links

Preliminary note

The same standard rates are used to determine the accounting rate shares payable to terminal and transit (switched transit) countries.

D.2.1 Routing via satellite links only ⁶⁾

When, in a given relation, all traffic is routed using international satellite links, the terrestrial distance between the respective international terminal or transit exchanges is disregarded. The costs to be taken into account for determining the terminal or transit shares relating to the use of the link are:

- the cost of the earth station and the national terrestrial extension to the international exchange in the same country (including a component *A*)⁵⁾ in the exchange);
- the cost of the space segment.

The accounting rate shares applicable per minute are as follows:

- for the earth station and the national terrestrial extension to the international exchange in the same country (including a component *A*)⁵⁾ in the exchange): 0.15 SDR or 0.46 G. Fr.
- for the space segment: 0.06 SDR or 0.18 G. Fr.

⁴⁾ Part of the circuits provided at the expense of the Administration operating the earth station.

⁵⁾ The cost of international telecommunication circuits should be expressed in the form $A + B \times \frac{l}{100}$. *A* represents all costs relating to terminal transmission equipment for one end of the international circuit, *B* represents the costs per 100 km (crowflight distance) of the circuit.

⁶⁾ The figures in § D.2.1 were calculated using 65 000 minutes per circuit.

D.2.2 Routing via satellite and terrestrial links

When, in a given relation, international traffic is routed via both satellite and terrestrial links, account should be taken of the provisions of § 2.3 of Recommendation D.300 R concerning the calculation of terrestrial circuit distances, as well as of the cost elements involved in satellite routing specified in § D.2.1 above. When these two components have been calculated separately, a weighting factor based on the number of circuits set up on each transmission medium is applied to determine the transmission (*line* part) element of the accounting rate.

Note — To take account of the relatively low utilization factor of certain earth stations, a correction factor may be applied to the standard rates given in the present Annex D by the Administrations owning the stations concerned.

ANNEX E

(to Recommendation D.300 R)

Special charging conditions for the extension of submarine cables (§ 2.6 of this Recommendation)

Example of an agreement on the purchase of rights of way

A bilateral agreement between Administrations for the purchase of rights of way may, for example, be included on the following basis:

a) Contract aspects

Under such an agreement, the Administrations or operating agencies concerned would be granted rights of way across a national territory on the basis of a contract concluded for a fixed period, such as for fifteen years, and renewable on expiry. In the event of withdrawal of the cable from service, an option for repurchase of the rights of way could be included.

The rights of way could be granted in accordance with needs expressed, and the timetable for granting them need not be linked to that for the purchase of circuits in the submarine cable.

Note — The contract would not cover dedicated facilities; the Administration or agency granting rights of way could, if necessary, use all the facilities of its network to provide for the extension of submarine cable circuits on its territory.

b) Financial aspects

Purchase of rights of way through a national network would be calculated, for each terminal Administration, in relation to half the crowflight distance between the submarine cable landing point and the border crossing point of the transit Administration.

Payment for rights of way by each terminal country could consist of:

- a flat-rate price for the initial assignment per circuit and per kilometre, determined on the basis of the average cost per kilometre of the telecommunication arteries of the national network concerned;
- an annual maintenance and operation charge fixed on a flat-rate basis at a percentage of the initial assignment rate corresponding to the level of maintenance and operation costs incurred by the Administration concerned.

Tariff rebates could be granted for groups of circuits purchased at the same time, under the conditions set out in § 2.4.2.1 of this Recommendation.

**DETERMINATION OF ACCOUNTING RATE SHARES AND COLLECTION CHARGES
IN TELEX RELATIONS BETWEEN COUNTRIES
IN EUROPE AND THE MEDITERRANEAN BASIN¹⁾**

Introduction

When, in full exercise of their sovereignty, the Administrations of the countries of Europe and the Mediterranean Basin negotiate among themselves agreements for determining the accounting rate shares and when they fix the collection charges to be applied in their telex relations, it is recommended that they take into consideration:

- for the determination of accounting rate shares and accounting rates, the provisions of § 2 of this Recommendation;
- for fixing the collection charges, the provisions contained in § 3 of this Recommendation.

In accordance with Article 30 of the *International Telecommunication Convention*, Nairobi, 1982, the standard rates given in this Recommendation are expressed in the monetary unit of the International Monetary Fund (IMF) which is the Special Drawing Right (SDR) and in gold francs (G. Fr.).

1 Explanation of some of the terms used in this Recommendation

An explanation of some of the terms used in this Recommendation is given in Recommendation D.000.

2 Determination of accounting rates in telex relations between countries in Europe and the Mediterranean Basin

2.1 General

2.1.1 Since the setting up of any international call involves both the international network and the national networks of the terminal countries, the accounting rate share for each country is derived from three basic elements, to which separate standard rates are applied:

- the *line* (transmission) part of the international network, which includes the various transmission systems used and is a function of the distance;
- the international exchange, i.e. the *switching* part of the international circuit, plus the terminal transmission equipment;
- the *national extension*, which denotes that part of the national network of each terminal country involved in completing the connection.

2.1.2 In special cases where the *line* (transmission) part of an international connection is:

- a tropospheric scatter link, or
- a radio link,

the provisions of this Recommendation with regard to the determination of an accounting rate share in relation to the length of the international circuit are not applicable and accounting rate shares should be agreed upon between the Administrations concerned.

Cases in which the *line* (transmission) part of a connection is a satellite link are dealt with in Annex D to this Recommendation.

¹⁾ Countries in the Mediterranean Basin are countries not belonging to Europe but bordering the Mediterranean Sea.

2.2 *Calculation of distances (line part)*

2.2.1 *Distances to be taken into consideration*

2.2.1.1 *General case*

In determining the share payable to a country for the use of international circuits, the distance to be taken into consideration is, in principle:

in a terminal country

- the *crowflight distance* between:
 - a) the point at which the international circuit crosses the frontier, and
 - b) the international exchange at which the circuit terminates;

in a transit country

- the *crowflight distance* between the two frontier points at which the international circuit enters and leaves the country in question.

The above provisions for the calculation of distances apply to international circuits both on land cables and on radio-relay links.

2.2.1.2 *Special cases*

2.2.1.2.1 *Radio-relay links crossing the sea or a third country*

When a frontier is crossed by a radio-relay section of an international circuit passing over a third country or over the sea, without an intermediate relay station, the frontier point for measuring the circuit length shall be the point midway between the two relay stations on either side of the frontier.

2.2.1.2.2 *Submarine cables*

With regard to international circuits which are routed in submarine cables, the distance to be used for accounting will be calculated as follows:

- a) for the land section of the circuit to the cable station, the distance shall be calculated in accordance with the general principles (i.e. the *crowflight distance*), it being assumed that the point at which the circuit crosses the frontier is the cable station;
- b) for the submarine cable section, the distance used shall be the actual route distance between the submarine cable stations, as determined and agreed by the joint owners of the cable; the distance will be divided appropriately (normally 50/50) between the countries at the extremities of the cable.

2.2.1.2.3 *Special itineraries*

In exceptional circumstances, multiplication factors may be applied to the *crowflight distance*, from which the terminal and transit charges are calculated, to take account of special itineraries. For example, in the case of a direct transit country, the *crowflight distance* between the points on the frontier at which the circuit enters and leaves the country may (in exceptional circumstances) be replaced by a length representing the sum of two *crowflight* segments making up a broken line, etc.

2.2.2 *Possibility of weighting distances*

For calculation of the *crowflight distances* for the international section a weighting according to the number of circuits is normally applied in a given relation to simplify accounting:

- when there are several international arteries with different itineraries terminating at an international exchange;
- when there are several international exchanges in a country for the relation concerned.

This weighting serves to determine a length (*crowflight distance*) for fixing the accounting rate shares relating to the international section and it would remain in force as long as the structure of the network was not significantly changed. The length of the international section would then be used to fix the *international section* element for the shares for international telex circuits.

2.2.3 Rounding off distances

2.2.3.1 Distances less than 50 km shall be rounded up to 50 km.

Example: distance of 24 km rounded up to 50 km.

2.2.3.2 Other distances shall be rounded off to the nearest multiple of 50 km.

Examples:

- distance of 72 km rounded off to 50 km;
- distance of 126 km rounded off to 150 km;
- distance of 175 km rounded off to 200 km.

2.2.3.3 This rounding rule applies to the distances in each of the terminal countries and in each of the transit countries and is applied to the total distance calculated for any one country. It is applicable to the remuneration of Administrations both on the basis of a flat-rate price for the facilities made available and on the basis of traffic units.

2.2.3.4 When distances are weighted in accordance with the provisions of § 2.2.2, the rounding shall be applied only after the weighted distance has been calculated.

2.2.4 Existence of several routes in a given relation

When in a given relation there are several routes traversing different transit countries, these transit countries shall in all cases receive the share or flat-rate price normally due to them for the distance between the points of entry and exit; any cost of equalizing collection charges in a relation comprising different routes shall be borne solely by the Administration of the country of origin and no deduction shall be made from the remuneration due to the transit countries.

2.3 Standard rates to be applied for international accounting

For international accounting purposes there are two methods of remuneration for the facilities made available by Administrations:

- on the basis of traffic units;
- on the basis of a flat-rate price for the facilities made available.

2.3.1 Remuneration on the basis of traffic units

To determine the accounting rate shares for each country, the following standard rates, *per minute of telex call*, are recommended:

1) International network

a) Manual operation

	SDR	G.Fr
– <i>per 100 km</i> of international circuit (excluding any national circuit required for connecting the international exchange to the national exchange serving the subscriber) ^{a), b)}	....	....
– for the manual international exchange in the country of origin or destination ^{b), c)}	0.817	2.50
– for a manual international exchange in a transit country ^{b), c)}	0.817	2.50

b) *Semi-automatic and automatic operation*

	SDR	G.Fr
– <i>per 100 km</i> of international circuit (excluding any national circuit required for connecting the international exchange to the national exchange serving the subscriber) ^{a), b)}	....	....
– for the semi-automatic international exchange in the country of origin: ^{b)}	0.784	2.40
– for the automatic international exchange in the country of origin ^{b), c)}	0.029	0.09
– for the automatic international exchange in the country of destination ^{b), c)}	0.029	0.09
– for an automatic international exchange in a transit country ^{b), c)}	0.039	0.12

^{a)} The rate for the *line* element was calculated at 0.0008 and 0.0003 SDR or at 0.0026 and 0.00115 G.Fr per 100 km and per minute for manual and automatic operation respectively. Because of these relatively low amounts, the cost of the *line* element was included in the rate shares for the international exchange, taking into account an average distance of 500 km for incoming and outgoing terminal traffic and of 1000 km for transit traffic. As a consequence, direct transit traffic can only be charged for on the basis of the flat-rate procedure.

^{b)} The standard rates mentioned for the *line* element per 100 km of circuit and per minute as set out in footnote ^{a)} above may not be appropriate to some small capacity submarine cables. In these cases the rates should be fixed by agreement among the parties concerned.

^{c)} This amount includes the cost of the transmission equipment for one extremity in terminal operation and for two extremities in transit operation.

2) *National extension*

An amount may be added to cover the cost of the extension of calls over the national network, taking into account:

- the (weighted average) number of national exchanges by which an outgoing or incoming international call is routed,
- the (weighted average) number of terminal transmission equipments (component *A*)²⁾ by which an outgoing or incoming international call is routed,
- the (weighted average) crowflight length of the national circuit used for setting up an outgoing or incoming international call,
- the cost per minute of use of a national exchange in an international call,
- the cost per minute of use of a terminal transmission equipment (component *A*)²⁾ in an international call,
- the cost per minute of use of 100 km (crowflight) of national circuit in an international call,
- the administrative cost per minute of an outgoing or incoming international call.

Administrations are recommended, when determining the remuneration of their national extension per minute of international call, not to exceed the maximum values indicated below:

- a) for outgoing traffic: 0.088 SDR or 0.27 G. Fr.;
- b) for incoming traffic: 0.082 SDR or 0.25 G. Fr.

²⁾ The cost of international telecommunication circuits should be expressed in the form $A + B \times \frac{l}{100}$. *A* represents all costs relating to terminal transmission equipment for one end of the international circuit; *B* represents the costs per 100 km (crowflight distance) of the circuit.

2.3.2 Remuneration on a basis of flat-rate price for the facilities made available

2.3.2.1 Remuneration of a direct transit country

2.3.2.1.1 To determine the flat-rate price for remuneration for the transmission facilities made available by Administrations, the following standard rates are recommended:

		Per year and per 100 km of transmission channel (line part)	
		SDR	G.Fr
— per telegraph channel (VFT or TDM)	50 bauds ^{a), b)}	14.7	45
	100 bauds ^{a), b)}	29.4	90
	200 bauds ^{a), b)}	58.8	180
	300 bauds	68.6	210
— per telegraph carrier circuit ^{a), b)}		392	1200

^{a)} To allow for the small capacity of some submarine cables, a correction factor may be applied to the above rates.

^{b)} Where, in order to establish a circuit, two telegraph channel in a direct transit country are connected, an additional charge shall be made for the lease of the transmission equipment for two telegraph channel extremities, irrespective of the number of such connections in the direct transit country, as follows:

$216 \times 2 = 432$ SDR or $660 \times 2 = 1320$ G.Fr for a 50-baud circuit,

$294 \times 2 = 588$ SDR or $900 \times 2 = 1800$ G.Fr for a 100-baud circuit,

$441 \times 2 = 882$ SDR or $1350 \times 2 = 2700$ G.Fr for a 200-baud circuit,

$719 \times 2 = 1438$ SDR or $2200 \times 2 = 4400$ G.Fr for a 300-baud circuit.

2.3.2.1.2 When a circuit leased to a private user passes through a direct transit country, the Administration of this country will be remunerated by the Administrations of the terminal countries with a flat-rate price on the same basis as if the circuit were an ordinary public service circuit applying the rate in § 2.3.2.1.1.

2.3.2.2 Remuneration of a country of destination

To determine the flat-rate price for remuneration of the country of destination for the facilities made available by Administrations, the following standard rates are recommended:

1) *For the transmission channel (line part)*

		Per year and per 100 km	
		SDR	G.Fr
– per telegraph channel (VFT or TDM)	50 bauds	(see ^{a)} below)	
	100 bauds ^{b)}	29.4	90
	200 bauds ^{b)}	58.8	180
	300 bauds ^{b)}	68.6	210
– per telephone carrier circuit ^{b)}		392	1200

2) *For the international exchange (including terminal transmission equipment)*

– per year and per 50-baud international circuit connected:

<i>Manual operation</i>	<i>Automatic operation</i>
$0.817^{c)} \times 18\,000^{d)}$ or $2.50^{c)} \times 18\,000^{d)}$ = 14 706 SDR = 45 000 G.Fr	$0.029^{c)} \times 40\,000^{e)}$ or $0.09^{c)} \times 40\,000^{e)}$ = 1160 SDR = 3600 G.Fr

3) *For the national extension*

– per year and per 50-baud international circuit connected:

<i>Manual operation</i>	<i>Automatic operation</i>
$PN^{f)} \times 18\,000^{d)}$	$PN^{f)} \times 40\,000^{e)}$

^{a)} Included in the international exchange price [see note a) of § 2.3.1].

^{b)} To allow for the small capacity of some submarine cables, a correction factor may be applied to the above rates.

^{c)} The cost of the terminal telex transmission equipment for one extremity is included in the amounts of 0.817 and 0.029 SDR or 2.50 and 0.09 G.Fr.

^{d)} Average number of minutes of traffic routed per year and per manual international telex circuit.

^{e)} Average number of minutes of traffic routed per year and per semi-automatic or automatic international telex circuit.

^{f)} PN represents the amount, per minute of telex call, of the share to be fixed by each Administration for the extension of calls on national territory.

4) The rentals for telegraph channel transmission terminal equipment, per year, per terminal, determined in relation to costs are as follows:

- 216 SDR or 660 G. Fr. per 50-baud telegraph channel,
- 294 SDR or 900 G. Fr. per 100-baud telegraph channel,
- 441 SDR or 1350 G. Fr. per 200-baud telegraph channel,
- 719 SDR or 2200 G. Fr. per 300-baud telegraph channel.

The remuneration of the international exchange given in point 2) of § 2.3.2.2 takes into account an amount of 216 SDR or 660 G. Fr. relating to 50-baud terminal equipment.

2.3.3 All the amounts contained in § 2 above are reproduced in the three tables in Annexes A, B and C.

2.4 *Remuneration for facilities made available for the extension of intercontinental circuits*

In principle, the rates mentioned in § 2 above apply also to the remuneration of facilities made available for the extension of intercontinental cable or satellite circuits.

3 **Determination of collection charges in telex relations between countries in Europe and the Mediterranean Basin**

3.1 *General*

The establishment of the collection charge is a national matter. Whilst, in general, Administrations correlate collection charges and accounting rates, the two will not necessarily be the same for a number of reasons, for example:

- a) in most countries, collection charges and accounting rates will be expressed in different currencies;
- b) collection charges and accounting rates may be based on different traffic units;
- c) the value of national currencies may fluctuate in relation to the SDR or the gold franc;
- d) collection charges may be influenced by government fiscal policies;
- e) Administrations frequently establish common collection charges for geographical zones or groups of countries;
- f) in many relations there will be different routes with different accounting rates to which a single collection charge will be applied.

3.2 *Determination of collection charges*

3.2.1 The collection charge, in principle, should be the equivalent in national currency of the accounting rate. If, taking into account the factors in § 3.1 above, an Administration wishes to fix a collection charge at a higher or lower amount than the direct equivalent of the accounting rate, it may apply a multiplication factor K. This factor K should not be more than 1.8 when applied to the accounting rate in the relation concerned.

As a general principle, Administrations should make every effort to avoid too large a dissymmetry between the collection charges applicable in each direction of the same relation and should endeavour to agree upon application of the same factor K. Collection charges should be fixed at reasonable levels and the factor $K = 1.8$ is a maximum which should not be automatically applied. The factor K may be different for the different relations operated by an Administration.

Note — It is emphasized that the application of a factor K should not affect international accounting.

3.2.2 In considering the collection charges for a relation in which automatic and semi-automatic working both exist, each Administration should decide to fix its charges:

- either by establishing different charges for each method of operation; or
- by establishing a single collection charge weighted according to the volume of each type of traffic.

3.2.3 To recover the costs of operator assistance, Administrations may levy additional charges per call, the level of which is a national matter.

ANNEX A

(to Recommendation D.301 R)

Standard rates to be applied in Europe and the Mediterranean Basin in determining accounting rate shares in the telex service (traffic unit basis)

A – Accounting rate shares applicable in *terminal countries* per *minute* of telex call

Direction of operation	Manual operation				Semi-automatic operation				Automatic operation			
	Transmission (per 100 km of circuit) ^{a)}		International exchange ^{c)}		Transmission (per 100 km of circuit) ^{a)}		International exchange ^{c)}		Transmission (per 100 km of circuit) ^{a)}		International exchange ^{c)}	
	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr
Outgoing	.... ^{b)}	.... ^{b)}	0.817 ^{b)}	2.50 ^{b)}	.... ^{b)}	.... ^{b)}	0.784 ^{b)}	2.40 ^{b)}	.... ^{b)}	.... ^{b)}	0.029 ^{b)}	0.09 ^{b)}
Incoming	.... ^{b)}	.... ^{b)}	0.817 ^{b)}	2.50 ^{b)}	.... ^{b)}	.... ^{b)}	0.029 ^{b)}	0.09 ^{b)}	.... ^{b)}	.... ^{b)}	0.029 ^{b)}	0.09 ^{b)}

B – Accounting rate shares applicable in *transit countries* per *minute* of telex call

Switched transit							
Manual				Automatic			
Transmission (per 100 km of circuit) ^{a)}		International exchange ^{c)}		Transmission (per 100 km of circuit) ^{a)}		International exchange ^{c)}	
SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr
.... ^{b)}	.... ^{b)}	0.817 ^{b)}	2.50 ^{b)}	.... ^{b)}	.... ^{b)}	0.039 ^{b)}	0.12 ^{b)}

^{a)} The standard rates mentioned for the *line* element per 100 km of circuit and per minute as set out in footnote ^{b)} below may not be appropriate to small capacity submarine cables. In these cases, the rates should be fixed by agreement among the parties concerned.

^{b)} The rate for the *line* element was calculated at 0.0008 and 0.0003 SDR or 0.0026 and 0.00115 G.Fr per 100 km and per minute for manual and automatic operation respectively. Because of these relatively low amounts, the cost of the *line* element was included in the rate shares for the exchange, taking into account an average distance of 500 km for incoming and outgoing terminal traffic and of 1000 km for transit traffic. As a consequence, direct transit traffic can no longer be accounted for on the basis of the traffic-unit price procedure, taking into account the rates indicated in this Recommendation.

^{c)} Including the cost of the transmission equipments for one extremity in terminal operation and for two extremities in transit operation.

ANNEX B

(to Recommendation D.301 R)

Standard rates to be applied in Europe and the Mediterranean Basin in remuneration for transmission facilities made available by Administrations in a direct transit country (flat-rate price basis)

Unit element considered		Transmission (line part)	
		Rates per 100 km per annum	
		SDR	G.Fr
Telegraph carrier circuit ^{a), b)}		392	1200
Telegraph channel	50 bauds ^{a), c)}	14.7	45
	100 bauds ^{a), c)}	29.4	90
	200 bauds ^{a), c)}	58.8	180
	300 bauds ^{a), c)}	68.6	210

^{a)} To allow for the small capacities of some submarine cables, a correction factor may be applied to the above rates.

^{b)} Including, wherever applicable, use of modulation and demodulation equipment or through-band filters in the direct transit country.

^{c)} Where, in order to establish a circuit, telegraph channels in a direct transit country are connected, an additional charge is made for the lease of transmission equipment for two telegraph channel extremities, irrespective of the number of such connections in the direct transit country, as follows:

– $216 \times 2 = 432$ SDR or $660 \times 2 = 1320$ G.Fr for a 50-baud circuit,

– $294 \times 2 = 588$ SDR or $900 \times 2 = 1800$ G.Fr for a 100-baud circuit,

– $441 \times 2 = 882$ SDR or $1350 \times 2 = 2700$ G.Fr for a 200-baud circuit,

– $719 \times 2 = 1438$ SDR or $2200 \times 2 = 4400$ G.Fr for a 300-baud circuit.

ANNEX C

(to Recommendation D.301 R)

Standard rates to be applied in Europe and the Mediterranean Basin in remuneration for facilities made available between Administrations in a destination country (flat-rate price basis)

Unit element considered	Transmission (line part)		International exchange		National extension	
	Per 100 km and per year		Operation		Operation	
			Manual	Automatic	Manual	Automatic
	SDR	G.Fr	per year	per year	per year	per year
Per international telegraph circuit:						
— 50 bauds	a)	a)	$0.817^b \times 18\,000^c$ = 14 706 SDR or $2.50^b \times 18\,000^c$ = 45 000 G.Fr ^{b)}	$0.029^b \times 40\,000^d$ = 1160 SDR or $0.09^b \times 40\,000^d$ = 3600 G.Fr ^{b)}	$PN^e \times 18\,000^c$	$PN^e \times 40\,000^d$
— 100 bauds	29.4	90	not applicable	not applicable	not applicable	not applicable
— 200 bauds	58.8	180				
— 300 bauds	68.6	210				
Per telegraph carrier circuit	392	1200				

a) Included in the international exchange prices [see footnote ^{b)} of Annex A].

b) The cost of telex terminal transmission equipment for one extremity is included in the amounts of 0.817 and 0.029 SDR or 2.50 and 0.09 G.Fr.

c) Average number of minutes of traffic routed per year and per manual international telex circuit.

d) Average number of minutes of traffic routed per year and per semi-automatic or automatic international telex circuit.

e) PN represents the amount, per minute of telex call, of the share to be fixed by each Administration for the extension of the connection on national territory.

ANNEX D

(to Recommendation D.301 R)

Remuneration for the facilities used to set up telegraph-type satellite circuits (Intelsat system) via an earth station in Europe and the Mediterranean Basin

D.1 *Flat rate charges for the provision of telegraph-type circuits set up via a foreign European earth station*

Preliminary note

The charges are the same, whether the telegraph-type circuit is used in an intra-European or an intercontinental relation.

When an Administration operates a direct satellite (VFT/TDM) telegraph-type circuit set up via a foreign European earth station, the following standard rates are recommended for the remuneration of the facilities provided by the country operating the earth station:

D.1.1 for the remuneration of the international circuit section between the border of the outgoing terminal country and the international exchange of the country operating the earth station³⁾, the rates set out in § 2.3.2.1.1 of the present Recommendation apply.

D.1.2 for the remuneration of the earth station and the national extension from the international exchange mentioned in § D.1.1, above, to that station:

		SDR	G.Fr
– per telegraph channel (VFT or TDM) per annum	50 bauds	350	1 071
	100 bauds	700	2 142
	200 bauds	1400	4 285
	300 bauds	1640	5 020
– per telegraph carrier circuit per annum		9800	30 000

D.1.3 for the remuneration of the space segment:

– per telegraph channel (VFT or TDM) per annum	50 bauds	1/26	of the Intelsat charge for a telegraph carrier circuit
	100 bauds	1/13	
	200 bauds	1/6	
	300 bauds	1/5	

³⁾ Part of the circuits provided at the expense of the Administration operating the earth station.

The remuneration of the space segment for a full telegraph carrier circuit is normally payable directly to Intelsat;

D.1.4 for the remuneration of the two terminal equipments (components *A*) ⁴⁾ interconnecting the land line extensions mentioned in §§ D.1.1 and D.1.2 above, the amounts set out in § 2.3.2.1.1, b) of the present Recommendation.

D.2 *Traffic unit price applicable in telex relations between countries of Europe and the Mediterranean Basin, for traffic routed via satellite links*

Preliminary note

The same standard rates are used to determine the accounting rate shares payable to terminal and transit (switched transit) countries.

D.2.1 *Routing via satellite links only*

When, in a given relation, all traffic is routed using international satellite links, the terrestrial distance between the respective terminal or transit exchanges is disregarded. In addition to the amounts quoted in § 2.3.1 of the present Recommendation, it is recommended that the following remuneration for the satellite link be applied in order to determine the terminal or transit shares relating to the use of that link:

– 0.012 SDR or 0.036 G. Fr.⁵⁾

D.2.2 *Routing via satellite and terrestrial links*

When, in a given relation, international traffic is routed via both satellite and terrestrial links, the additional remuneration is calculated by applying a weighting factor based on the number of circuits set up on each transmission medium to the transmission (*line part*) element.

Note – To take account of the relatively low utilization factor of certain earth stations, a correction factor may be applied to the standard rates given in the present Annex D by the Administrations owning the stations concerned.

⁴⁾ The cost of international telecommunication circuits should be expressed in the form $A + B \times \frac{l}{100}$. *A* represents all costs relating to terminal transmission equipment for one end of the international circuit; *B* represents the costs per 100 km (crowflight distance) of the circuit.

⁵⁾ These figures were calculated using 26 telex circuits per carrier circuit and 40 000 minutes per year.

**DETERMINATION OF THE ACCOUNTING RATE SHARES AND COLLECTION
CHARGES FOR THE INTERNATIONAL PUBLIC TELEGRAM SERVICE APPLICABLE
TO TELEGRAMS EXCHANGED BETWEEN COUNTRIES IN EUROPE
AND THE MEDITERRANEAN BASIN¹⁾**

Introduction

When, in full exercise of their sovereignty, the Administrations of the countries of Europe and the Mediterranean Basin negotiate among themselves agreements for determining the accounting rate shares and the collection charges to be applied to telegrams exchanged between them, it is recommended that they take into consideration:

- for the determination of accounting rate shares and accounting rates, the provisions of § 2 of this Recommendation;
- for fixing the collection charges, the provisions contained in § 3 of this Recommendation.

§ 4 of the Recommendation contains special provisions concerning charges and accounting for certain telegrams or special services.

In accordance with Article 30 of the *International Telecommunication Convention* (Nairobi, 1982), the standard rates given in this Recommendation are expressed in the monetary unit of the International Monetary Fund (IMF), the Special Drawing Right (SDR), and in gold franc (G. Fr.).

1 Explanation of some of the terms used in this Recommendation

An explanation of some of the terms used in the Recommendation is given in Recommendation D.000.

2 Determination of accounting rate shares applicable to telegrams exchanged between countries in Europe and the Mediterranean Basin

Preliminary remarks

Through a cost study undertaken in 1982 relative to this Region, it was found that in the per word tariff system the cost price per word per terminal country is 0.363 SDR or 1.11 G. Fr. and that in the binary tariff system the cost price per terminal country is 4.90 SDR or 15 G. Fr. for the fixed charge of a telegram and 0.18 SDR or 0.55 G. Fr. for the charge per word.

However, since such an increase of the accounting rates would necessarily lead to a rather sharp increase of the collection charges, Administrations have decided on an exceptional basis to recommend only a lower increase of the accounting rates at this time.

¹⁾ Countries in the Mediterranean Basin are countries not belonging to Europe but bordering the Mediterranean Sea.

2.1 *Standard rates to be applied for international accounting*

The accounting rate shares may be determined either on the basis of a rate per word system or by applying a binary tariff system. The recommended standard rates for both systems are given below.

2.1.1 *Accounting rate shares determined by the per word tariff system*

2.1.1.1 *Terminal shares*

For ordinary private telegrams without any special service, the terminal share per word per terminal country is fixed at:

- 0.229 SDR or 0.70 G. Fr.

2.1.1.2 *Transit shares*

For ordinary private telegrams without any special service, the recommended transit share per word, per country, is:

- transit via a gentex transit centre: 0.004 SDR or 0.012 G. Fr.
- manual transit: 0.144 SDR or 0.44 G. Fr.
- transit via a telegram retransmission centre (automatic retransmission of messages)²⁾.

These shares are not cumulative; they are based on an average length of 1000 km for the international transit circuits.

2.1.2 *Accounting-rate shares determined by the binary tariff system³⁾*

2.1.2.1 *General*

To take account of the fact that for every telegram there are two types of cost, viz:

- fixed costs for acceptance and delivery;
- variable costs depending on the length of the text for transmission and reception and for the use of the telegraph network.

The recommended standard rates for the binary tariff system are those given in §§ 2.1.2.2 and 2.1.2.3 below.

2.1.2.2 *Terminal shares*

The shares due to each terminal country for ordinary private telegrams without any special service:

- fixed rate per telegram: 3.10 SDR or 9.50 G. Fr.;
- rate per word: 0.114 SDR or 0.35 G. Fr.

These shares were established on the assumption of an average number of 27 words per telegram.

²⁾ Administrations providing this service indicate the shares they apply for the use of their telegram retransmission centre in the *Table of Rates for Telegrams* [1] published by the ITU.

³⁾ It is pointed out that application of a binary tariff system should normally entail in the relation concerned, if necessary by bilateral arrangements:

- discontinuation of a minimum charge per telegram;
- discontinuation of letter telegrams and press telegrams;
- discontinuation of reduced charges for all telegrams except those concerning persons protected in time of war by the Geneva Conventions of 12 August 1949 (RCT).

2.1.2.3 *Transit shares*

Transit shares are determined in accordance with the provisions of § 2.1.1.2 above.

2.2 *Special provisions concerning transit shares*

Transit facilities are made available to Administrations only on the basis of the flat-rate price procedure.

2.3 *Accounting rate*

Because transit shares for automatic transit are small and because most transit facilities made available among the Administrations of countries in Europe and the Mediterranean Basin are remunerated on a flat-rate basis, it is recommended that a single accounting rate fixed by adding together the shares of the two terminal countries should be applied to telegrams exchanged between those countries. The shares payable to the transit countries, if any, are deducted from the share of the country of origin.

3 **Determination of collection charges applicable to telegrams exchanged between countries in Europe and the Mediterranean Basin**

3.1 *General*

The establishment of the collection charge is a national matter. While, in general, Administrations correlate collection charges and accounting rates, the two will not necessarily be the same for a number of reasons, for example:

- a) in most countries, collection charges and accounting rates will be expressed in different currencies;
- b) the value of national currencies may fluctuate in relation to the SDR or the gold franc;
- c) the collection charges may be based on the per word tariff system and the accounting rate on the binary system or vice versa;
- d) collection charges may be influenced by government fiscal policies;
- e) Administrations may establish common collection charges for geographical zones or groups of countries.

3.2 *Determination of collection charges*

3.2.1 It is recommended that a single telegraph collection charge should be applied for telegrams exchanged among countries in Europe and the Mediterranean Basin. This single collection charge is the sum of the terminal shares of the two terminal countries fixed in accordance with the provisions of §§ 2.1.1.1 and 2.1.2.2 of this Recommendation. Administrations may fix a single charge per word (with or without a minimum charge) or apply a binary collection charge. If they choose the per word system they may nevertheless agree to use the binary system for the establishment of international accounts.

3.2.2 In principle, the collection charge should be the equivalent in national currency of the accounting rate. If, taking into account the factors in § 3.1 above, an Administration wishes to fix a collection charge at a higher or lower amount than the direct equivalent of the accounting rate, it may apply a multiplication factor K. The factor K may be different for the different relations operated by an Administration.

As a general principle, Administrations should make every effort to avoid too large a dissymmetry between the collection charges applicable in each direction of the same relation. Collection charges should be fixed at reasonable levels.

Note – It is emphasized that the application of a factor K should not affect international accounting.

4 Provisions common to accounting rates and collection charges applicable to telegrams exchanged between countries in Europe and the Mediterranean Basin

Having regard to the provisions of the *Telegraph Regulations* [2] and the CCITT Recommendations, the following rules shall be taken into consideration when fixing accounting rates and collection charges:

- a) for urgent telegrams, the charge is equal to twice the charge for an ordinary telegram for the same destination and by the same route;
- b) for telegrams concerning persons protected in time of war by the Geneva Conventions of 12 August 1949 (RCT), the total charge is reduced by 75%;
- c) when a charged service message includes an amount for a prepaid reply (RP), such amount is equivalent to the charge for an ordinary private seven-word telegram for the same destination and by the same route.

References

- [1] *Table of Rates for Telegrams*, ITU, Geneva, 1985.
- [2] *Final Acts of the World Administrative Telegraph and Telephone Conference – Telegraph Regulations, Telephone Regulations*, ITU, Geneva, 1973. (See also the Preliminary Note No. 3, page XIV.)

Recommendation D.303 R

DETERMINATION OF ACCOUNTING RATE SHARES AND COLLECTION CHARGES APPLICABLE BY COUNTRIES IN EUROPE AND THE MEDITERRANEAN BASIN¹⁾ TO THE OCCASIONAL PROVISION OF CIRCUITS FOR SOUND- AND TELEVISION-PROGRAMME TRANSMISSIONS

Introduction

When, in full exercise of their sovereignty, the Administrations of the countries of Europe and the Mediterranean Basin negotiate among themselves agreements for determining the accounting rate shares and when they fix the collection charges to be applied in their relations for the occasional provision of circuits for sound- and television-programme transmissions, it is recommended that they take into consideration:

- the charging principles specified in CCITT Recommendation D.180;
- for the determination of accounting rate shares, the provisions of § 1 of this Recommendation;
- for fixing the collection charges, the provisions contained in § 2 of this Recommendation.

In accordance with Article 30 of the *International Telecommunication Convention* (Nairobi, 1982), the standard rates given in this Recommendation are expressed in the monetary unit of the International Monetary Fund (IMF), the Special Drawing Right (SDR), and in gold francs (G. Fr.).

An explanation of some of the terms used in this Recommendation is given in Recommendations D.180 and D.000.

¹⁾ Countries in the Mediterranean Basin are countries not belonging to Europe but bordering the Mediterranean Sea.

1 Determination of accounting rate shares to be applied to the provision of circuits for sound- and television-programme transmissions between countries in Europe and the Mediterranean Basin

1.1 General

1.1.1 The accounting rate shares due to each terminal and transit country is derived from several elements, to which separate standard rates are applied, such as:

- the preparation and operation of circuits for sound- and television-programme transmissions;
- the terminal equipments in each terminal country, or the interconnection equipments in transit countries, the remuneration of which is a function of the duration;
- the *international line* part, which includes the various transmission systems used and for which the remuneration is a function of the distance and the duration;

1.1.2 In special cases where the *line* (transmission) part of an international connection is:

- a tropospheric scatter link,
- a radio link, or
- a satellite link (see also § 4 of this Recommendation),

the provisions of this Recommendation with regard to the determination of an accounting rate share in relation to the length of the international circuit are not applicable and accounting rate shares should be agreed upon between the Administrations concerned.

1.2 Calculation of distances (line part)

1.2.1 Circuits provided for sound-programme transmissions

In determining the accounting rate share due to a country for the use of international circuits, the distance to be taken into consideration is:

in a terminal country

- the crowflight distance between the point at which the international circuit crosses the frontier and the international sound-programme centre (ISPC)²⁾;

in a transit country

- the crowflight distance between the two frontier points at which the international circuit enters and leaves the country.

In addition, the special provisions in Recommendation D.300 R on the calculation of distances for telephone circuits are applicable. These provisions refer to special cases, to the possibility of weighting distances and to rounding off distances.

1.2.2 Circuits provided for television-programme transmissions

In determining the accounting rate share due to each terminal or transit country, the chargeable distance is based on the actual length of the international circuits rounded up to the nearest 10 km.

For a terminal country A and an adjacent country B, the distance is measured from the international television-programme centre (ITPC)³⁾ in country A to the midpoint of the radio-relay link which connects the radio-relay stations in countries A and B.

For transit country B between two countries A and C, the actual length of the international circuit is measured from the midpoint of the radio-relay link which connects the radio-relay stations in countries A and B, to the midpoint of the radio-relay link which connects the radio-relay stations in countries B and C.

1.3 Standard rates to be applied for international accounting

For remuneration of Administrations for the facilities made available, the traffic unit price procedure is applied. However, when sound-programme circuits pass through a direct transit country, remuneration of the transit country shall normally be based on the flat-rate price procedure.

²⁾ In some countries the distance is measured to the studio and not to the ISPC.

³⁾ In some countries the distance is measured to the studio and not to the ITPC.

1.3.1 *Circuits provided for sound-programme transmissions*

To determine the accounting rate shares due to each country, the following standard rates are recommended:

- 1) *Fixed rate for preparation and operation of monophonic (15 kHz, 10 kHz or narrow-band) or stereophonic circuits (per provision):*

	SDR	G.Fr
– in a terminal country	29.4	90
– in a transit country having an interconnection point (whatever the number of interconnection points in that country)	29.4	90

- 2) *Rate for terminal equipment in a terminal country, per minute of provision:*

	SDR	G.Fr
– 10 kHz or 15 kHz circuit	0.653	2.00
– narrow-band (telephone-type) circuit	telephone rate ^{a)}	
– stereophonic pair	1.31	4.00

- 3) *Rate for interconnection equipment in a transit country, per minute of provision ^{b)}:*

	SDR	G.Fr
– 10 kHz or 15 kHz circuit	1.05	3.20
– narrow-band (telephone-type) circuit	telephone rate ^{a)}	
– stereophonic pair	2.10	6.40

4) *Rate per 100 km of international circuit, per minute, for the provision of:*

	SDR	G.Fr
– a 10 kHz or 15 kHz circuit	0.131	0.40
– a narrow-band (telephone-type) circuit	telephone rate ^{a)}	
– a stereophonic pair	0.327	1.00

^{a)} The charges given in 2), 3) and 4) are combined to form a single rate equivalent to the telephone rate of the relation considered.

^{b)} Usually only one interconnection point is remunerated per transit country.

5) *Fixed surcharge per provision of the circuit to be added to the telephone rate applied in the relation in question for extension through the ISPC (or ITPC) of a narrow-band (telephone-type) circuit used as a sound-programme or control circuit:*

	SDR	G.Fr
– in a terminal country	9.8	30
– in a transit country when there is interconnection	9.8	30

When the telephone circuit is used as a sound-programme (narrow-band) circuit, this fixed surcharge is levied in addition to the fixed rate mentioned in point 1) above.

6) *Any special expenses per provision of the circuit for setting up and clearing down temporary national extensions*

These expenses are calculated on the basis of the national rules in force in each country.

All the values given in § 1.3.1 above also appear in the table in Annex A.

Examples of calculation of the rates for the provision of circuits for sound-programme transmissions are given in Annex B.

Note 1 – The minimum chargeable duration for the provision of circuits for sound-programme transmissions is three minutes.

Note 2 – When a narrow-band (telephone-type) circuit is provided with a 4-wire terminal and is used for any purpose, the fixed surcharge per provision of the circuit given in 5) above is 19.60 SDR or 60 G. Fr.

Note 3 – The use of a sound-programme circuit established on a sub-carrier of a channel used for television transmission is charged as for a 10 kHz or 15 kHz sound programme circuit.

Note 4 – When a *sound-in-sync* (SIS) facility is used, no additional amount is added to the accounting rates. Any remuneration for extra expenses incurred by an Administration is a national matter between that Administration and its broadcasting organization.

1.3.2 Circuits provided for television-programme transmissions

To determine the accounting rate shares due to each country, the following standard rates are recommended:

	SDR	G.Fr
1) <i>Fixed rate for preparation and operation of television circuits (per provision):</i>		
– in a terminal country	49.0	150
– in a transit country having an interconnection point (whatever the number of interconnection points in that country)	49.0	150
2) <i>Rate for terminal equipment in a terminal country, per minute of provision</i>	3.27	10
3) <i>Rate for interconnection equipment and operation in a transit country, per minute of provision^{a)}</i>	5.55	17
4) <i>Rate per 100 km of international circuit, per minute of provision</i>	4.90	15
5) <i>Any special expenses per provision of national extensions beyond the ITPC and for setting up and clearing down temporary extensions</i>		
These expenses are calculated on the basis of the national rules in force in each country.		
The rate for a control circuit provided by extension of a telephone circuit through the ITPC is given in 5) of § 1.3.1 above.		

^{a)} Usually only one interconnection point is remunerated per transit country.

All the values given in § 1.3.2 above also appear in the table in Annex A.

Examples of the calculation of the rates for the provision of circuits for television-programme transmissions are given in Annex B.

Note 1 – The minimum chargeable duration for the provision of circuits for television-programme transmissions is three minutes.

Note 2 – When an Administration provides a transcoder (e.g. PAL to SECAM or vice versa) or a standards converter (e.g. 625 lines PAL to 525 lines NTSC), it may apply an extra charge per minute. Application of this extra charge is left to the discretion of each Administration owning a transcoder or converter.

Note 3 – When a television-programme circuit is used with a *sound-in-sync* (SIS) facility, the conditions of § 1.3.1, Note 4 above apply.

Note 4 – When a television-programme circuit is used and line 16/329 is also used for data transmission associated directly with the programme transmission supervision, remote control and monitoring, no extra charge will be applied.

1.3.3 Cancellation fee

For the cancellations and alterations of bookings provided for in §§ 4.3 and 4.4 of Recommendation D.180, application of the following fees is recommended:

- Half the fixed rate for preparation and operation of the circuits mentioned in 1) of § 1.3.1 and 1) of § 1.3.2 respectively, if the cancellation or alteration of the order is made less than 24 hours, but more than 2 hours before the time scheduled for the beginning of the provision of circuits;

- b) The entire fixed rate for preparation and operation of the circuits mentioned in 1) of § 1.3.1 and 1) of § 1.3.2 respectively, if the cancellation or alteration of the order is made 2 hours or less before the time scheduled for the beginning of the provision of circuits.

2 Determination of collection charges for the provision of circuits for sound- and television-programme transmissions between countries in Europe and the Mediterranean Basin

2.1 General

The establishment of the collection charge is a national matter. While, in general, Administrations correlate collection charges and accounting rates, the two will not necessarily be the same for a number of reasons, for example:

- a) in most countries collection charges and accounting rates will be expressed in different currencies;
- b) the value of national currencies may fluctuate in relation to the SDR or the gold franc;
- c) collection charges may be influenced by government fiscal policies;
- d) Administrations frequently establish common collection charges for geographical zones or groups of countries.

2.2 Determination of collection charges

In principle, the collection charge should be the equivalent in national currency of the accounting rate. If, taking into account the factors in § 2.1 above, an Administration wishes to fix a collection charge at a higher or lower amount than the direct equivalent of the accounting rate, it may apply a multiplication factor K. The factor K may be different for the different relations operated by an Administration.

As a general principle, Administrations should make every effort to avoid too large a dissymmetry between the collection charges applicable in each direction of the same relation. Collection charges should be fixed at reasonable levels.

Note — It is emphasized that the application of a factor K should not affect international accounting.

3 Determination of accounting rate shares to be applied to the provision of circuits for intercontinental sound- and television-programme transmissions to or from the countries of Europe and the Mediterranean Basin

3.1 The rates for the provision of circuits for intercontinental sound- and television-programme transmissions to or from countries in Europe and the Mediterranean Basin, except for the provision of narrow-band circuits, are normally obtained by adding together the rates for the intercontinental and European sections. The rates for each section are calculated in accordance with the tariff rules in force in each of the systems concerned.

3.2 The provision of narrow-band circuits for intercontinental sound-programme transmissions is subject to the same charging rules as for the provision of such circuits for European continental transmissions, namely application of:

- a) the fixed rate for preparation and operation,
- b) the fixed surcharge for making available a narrow-band circuit,
- c) the ordinary telephone rate,
- d) if applicable, the cancellation fee mentioned in § 1.3.3 above.

4 Special provisions determining charges for television transmissions by satellite

In addition to the provisions contained in § 5.2 of Recommendation D.180, the points mentioned below should be taken into account by Administrations when calculating their charges:

The cost study undertaken by the TEUREM Group in the study period 1981-1984 for the provision of terrestrial services within the Region and in the study period 1985-1988 for the provision of earth station facilities for occasional television services via satellite showed that the costs were higher than the charges generally applied.

It was recognized that the increase in charges which would be required to bring provision of the service up to an economic level would be substantial. Nevertheless, in the actual circumstances, it is not recommended to increase these rates.

For the service via satellite, the study showed that the cost per minute for earth station facilities was of the order of 30 SDR or 91 G. Fr. compared with average charges per minute of between 33-42 SDR or 102-128 G. Fr. (based on tariffs of 526/19.60 SDR or 1900/60 G. Fr. and 751/26 SDR or 2300/80 G. Fr. and for an average duration of 31 minutes). However, the latter charges include the space segment and terrestrial circuit from the earth station to the ITPC and ISPC (gateway) as well as the earth station. In 1986, space segment charges were \$ 8 per minute (approximately 6.75 SDR⁴⁾ or 20.5 G. Fr.) and the charge for the terrestrial circuit based on an average distance of 400 km would be 24 SDR or 73.6 G. Fr. at 1985-recommended levels.

For multiple destination services, the charge per receiving country for the down-link part of the international satellite television circuit should be the same as for a single destination service.

For cancellations, it is recommended that charges levied by Administrations should also take into account any space segment charges which may be levied and any other relevant conditions which may apply.

If any additional sound-programme circuits are provided, these should be charged on the same basis as a separate circuit for an intercontinental sound-programme transmission.

⁴⁾ On the basis of 1 SDR = 1.20\$.

ANNEX A

(to Recommendation D.303 R)

Standard rates to be applied in Europe and the Mediterranean Basin for the occasional provision of circuits for sound- and television-programme transmissions

	Sound-programme circuit												Television programme circuit	
	Narrow-band (telephone-type circuit)				Wide-band (at approximately 10 kHz)		Established on a television channel subcarrier		Very wide-band (at approximately 15 kHz)		Stereo- phonic pair			
	2-wire terminal		4-wire terminal											
	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr	SDR	G.Fr
1) Fixed rate for preparation and operation per provision of circuits and per country having an interconnection point (whatever the number of interconnection points within terminal and transit countries)	29.4	90	29.4	90	29.4	90	29.4	90	29.4	90	29.4	90	49	150
2) Rate per minute of provision of circuits per terminal country					0.653	2.00	0.653	2.00	0.653	2.00	1.31	4.00	3.27	10
3) Rate per minute of provision of circuits and per interconnection point in a transit country ^{b)}	tele- phone rate ^{a)}		tele- phone rate ^{a)}		1.05	3.20	1.05	3.20	1.05	3.20	2.10	6.40	5.55	17
4) Rate per 100 km of circuit per minute of provision of circuits					0.131	0.40	0.131	0.40	0.131	0.40	0.327	1.00	4.90	15
5) Fixed surcharge per provision of circuits and per terminal country and per transit country with an interconnection point for the provision of a narrow-band (telephone-type circuit) ^{c)}	9.8	30	19.60	60										

^{a)} The rates given in 2), 3) and 4) refer to the telephone service regardless of the mode of operation.

^{b)} Usually only one interconnection point is remunerated per transit country.

^{c)} This fixed surcharge should be collected in addition to the fixed rate mentioned in 1).

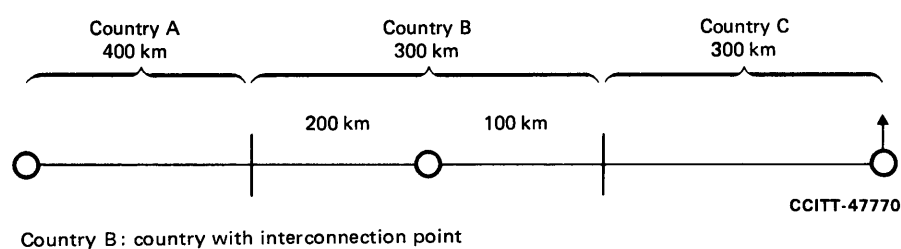
ANNEX B

(to Recommendation D.303 R)

Examples of the calculation of rates for the provision of circuits for occasional sound- and television-programme transmissions

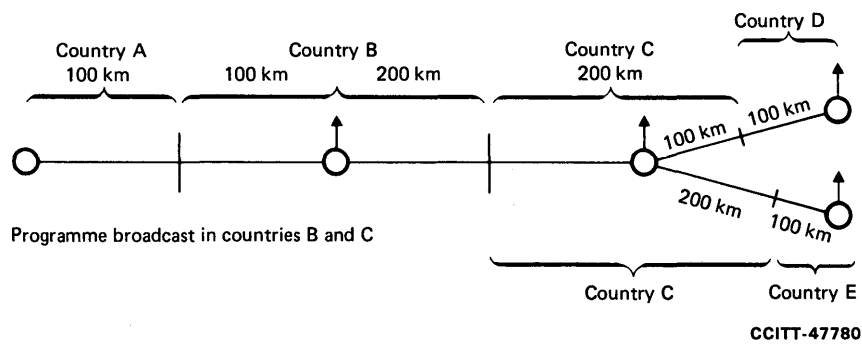
B.1 *Circuits provided for sound-programme transmissions*

Example 1 – Provision of sound-programme circuits: 20 minutes



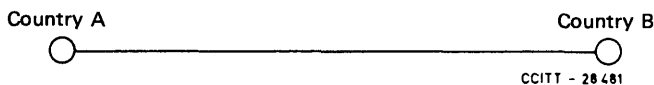
Accounting rate shares	SDR		G.Fr	
Country A	29.4 0.653×20 $0.131 \times 4 \times 20$	52.94	90 2.00×20 $0.40 \times 4 \times 20$	162
Country B	29.4 1.05×20 $0.131 \times 3 \times 20$	58.26	90 3.20×20 $0.40 \times 3 \times 20$	178
Country C	29.4 0.653×20 $0.131 \times 3 \times 20$	50.32	90 2.00×20 $0.40 \times 3 \times 20$	154
Accounting rate		161.52 SDR		494 G.Fr

Example 2 – Provision of sound-programme circuits: 20 minutes



Accounting rate shares	SDR		G.Fr	
Country A	29.4 0.653×20 $0.131 \times 1 \times 20$	45.08	90 2.00×20 $0.40 \times 1 \times 20$	138
Country B	29.4 0.653×20 $0.131 \times 1 \times 20$ 29.4 0.653×20 $0.131 \times 2 \times 20$	92.78	90 2.00×20 $0.40 \times 1 \times 20$ 90 2.00×20 $0.40 \times 2 \times 20$	284
Country C	29.4 0.653×20 $0.131 \times 2 \times 20$ 29.4 0.653×20 $0.131 \times 1 \times 20$ 29.4 0.653×20 $0.131 \times 2 \times 20$	140.48	90 2.00×20 $0.40 \times 2 \times 20$ 90 2.00×20 $0.40 \times 1 \times 20$ 90 2.00×20 $0.40 \times 2 \times 20$	430
Country D	29.4 0.653×20 $0.131 \times 1 \times 20$	45.08	90 2.00×20 $0.40 \times 1 \times 20$	138
Country E	29.4 0.653×20 $0.131 \times 1 \times 20$	45.08	90 2.00×20 $0.40 \times 1 \times 20$	138
Accounting rate		368.50 SDR		1128 G.Fr

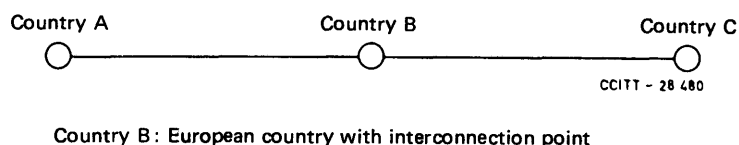
Example 3 – Provision of a narrow-band (direct route) circuit for an intercontinental sound-programme transmission: 20 minutes

Accounting rate shares ^{a)}

	SDR		G.Fr	
<i>Country A</i>				
– fixed rate for preparation and operation ^{b)}	29.40		90	
– fixed surcharge for the provision of a narrow-band circuit ^{c)}	9.80	65.33	30	200
– charge per minute (20 × 1.31 SDR or 20 × 4 G.Fr) ^{d)}	26.13		80	
<i>Country B</i>				
– fixed rate for preparation and operation ^{b)}	29.40		90	
– fixed surcharge for the provision of a narrow-band circuit ^{c)}	9.80	65.33	30	200
– charge per minute (20 × 1.31 SDR or 20 × 4 G.Fr) ^{d)}	26.13		80	
Accounting rate		130.66 SDR		400 G.Fr

- a) In Examples 3 and 4, it is assumed that countries outside Europe apply the same standard rates as the countries of the TEUREM Region.
- b) This charge is not levied if the narrow-band circuit is used only for sound- or television-programme transmission coordination or monitoring.
- c) When a narrow-band circuit is provided with a 4-wire terminal and is used for any purpose, the fixed surcharge is 19.60 SDR or 60 G.Fr.
- d) The regular telephone rate used in Examples 3 and 4 is 2.62 SDR or 8 G.Fr.

Example 4 – Provision of narrow-band circuits (with interconnection in Europe) for an intercontinental sound-programme transmission: 20 minutes



Accounting rate shares^{a)}

	SDR		G.Fr	
<i>Country A (Europe)</i>				
– fixed rate for preparation and operation ^{b)}	29.40		90	
– fixed surcharge ^{c)}	9.80	60.43	30	185
– charge per minute (20 × 1.06 SDR or 20 × 3.25 G.Fr) ^{d)}	21.23		65	
<i>Country B (transit in Europe)</i>				
– fixed rate for preparation and operation ^{b)}	29.40		90	
– fixed surcharge ^{c)}	9.80	49	30	150
– charge per minute (20 × 0.49 SDR or 20 × 1.50 G.Fr) ^{d)}	9.80		30	
<i>Country C (outside Europe)</i>				
– fixed rate for preparation and operation ^{b)}	29.40		90	
– fixed surcharge ^{c)}	9.80	60.43	30	185
– charge per minute (20 × 1.06 SDR or 20 × 3.25 G.Fr) ^{d)}	21.23		65	
Accounting rate		169.86 SDR		520 G.Fr

^{a)} In Examples 3 and 4, it is assumed that countries outside Europe apply the same standard rates as the countries of the TEUREM Region.

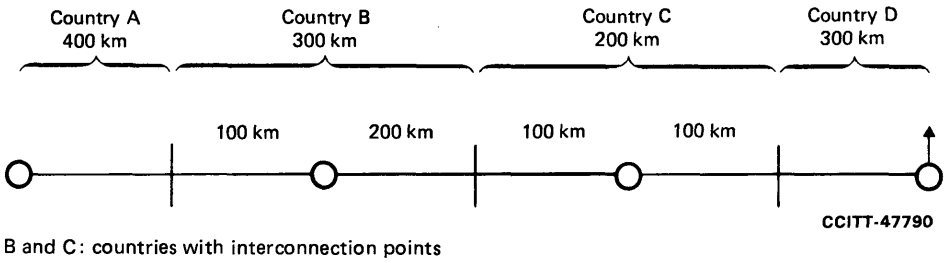
^{b)} This charge is not levied if the narrow-band circuit is used only for sound- or television-programme transmission coordination or monitoring.

^{c)} When a narrow-band circuit is provided with a 4-wire terminal and is used for any purpose, the fixed surcharge is 19.60 SDR or 60 G.Fr.

^{d)} The regular telephone rate used in Examples 3 and 4 is 2.62 SDR or 8 G.Fr.

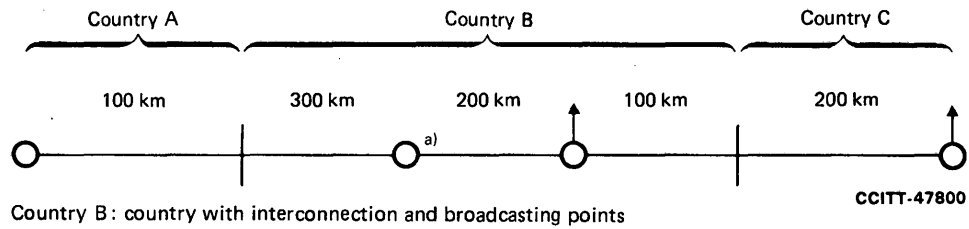
B.2 *Circuits provided for television-programme transmissions*

Example 1 – Provision of television-programme circuits: 30 minutes



Accounting rate shares	SDR		G.Fr	
Country A	49 3.27×30 $4.90 \times 4 \times 30$	735.10	150 10×30 $15 \times 4 \times 30$	2250
Country B	49 5.55×30 $4.90 \times 3 \times 30$	656.50	150 17×30 $15 \times 3 \times 30$	2010
Country C	49 5.55×30 $4.90 \times 2 \times 30$	509.50	150 17×30 $15 \times 2 \times 30$	1560
Country D	49 3.27×30 $4.90 \times 3 \times 30$	588.10	150 10×30 $15 \times 3 \times 30$	1800
Accounting rate		2489.20 SDR		7620 G.Fr

Example 2 – Provision of television-programme circuits: 50 minutes



a) Charging for this point is admitted only when a circuit is tapped at this point, in which case the terminal rate for the tapped circuit should be charged.

Accounting rate shares	SDR		G.Fr	
Country A	49 3.27×50 $4.90 \times 1 \times 50$	457.50	150 10×50 $15 \times 1 \times 50$	1400
Country B	49 3.27×50 $4.90 \times 5 \times 50$ 49 3.27×50 $4.90 \times 1 \times 50$	1895	150 10×50 $15 \times 5 \times 50$ 150 10×50 $15 \times 1 \times 50$	5800
Country C	49 3.27×50 $4.90 \times 2 \times 50$	702.50	150 10×50 $15 \times 2 \times 50$	2150
Accounting rate		3055 SDR		9350 G.Fr

Recommendation D.305 R

REMUNERATION FOR FACILITIES USED FOR THE SWITCHED-TRANSIT HANDLING OF INTERCONTINENTAL TELEPHONE TRAFFIC IN A COUNTRY IN EUROPE OR THE MEDITERRANEAN BASIN

(Malaga-Torremolinos, 1984)

The CCITT,

considering

(a) the widespread development of automatic transit facilities in telephone relations between the countries in Europe and the Mediterranean Basin and non-European countries, and also the necessity of applying in their regard the accounting principles laid down in Recommendation D.150;

(b) the utility and necessity of determining accounting rates and conditions ensuring the equitable remuneration of Administrations for the transit facilities made available, while also allowing for the reasonable remuneration of the terminal countries,

recommends

that the provisions set out below be considered for application to the intercontinental telephone relations involving transit with manual or automatic switching in Europe:

1 The remuneration of transit countries is made up of the following components:

1.1 the remuneration relating to the half of one (or two) intercontinental circuit(s) on the European side (including the earth station and the extension circuit as far as the international exchange);

1.2 in relations handled via an *automatic* transit exchange, the remuneration relating to this exchange, calculated in accordance with the standard rates applicable to the automatic service as established by Recommendation D.300 R;

1.3 in relations handled via a *manual* transit exchange, the remuneration relating to this exchange, calculated in accordance with the standard rates applicable to the manual service, as established by the provisions of Recommendation D.300 R;

1.4 in relations between a European terminal country and a non-European country, the remuneration of the extension land circuit between the international transit exchange and the European terminal country, made available at its own expense by the Administration of the transit country; this remuneration is calculated in accordance with the standard rates applicable to the automatic service as established by Recommendation D.300 R on the basis of a standard average distance of 500 km;

2 The total remuneration in SDR or gold francs of the European transit country, as established in § 1 above, is given in Table 1/D.305 R.

TABLE 1/D.305 R

Interconnection of a European circuit and an intercontinental circuit				Interconnection of two intercontinental circuits			
Automatic transit		Manual transit		Automatic transit		Manual transit	
SDR	Gold francs	SDR	Gold francs	SDR	Gold francs	SDR	Gold francs
0.43	1.30	1.06	3.25	0.57	1.75	1.34	4.10

The above figures are reference values and may be adjusted, particularly to take into account higher costs for providing this service.

**REMUNERATION OF PUBLIC
PACKET-SWITCHED DATA TRANSMISSION NETWORKS
BETWEEN THE COUNTRIES OF EUROPE AND THE MEDITERRANEAN BASIN**

(Melbourne, 1988)

The CCITT,

considering

(a) the introduction in many countries of Europe and the Mediterranean Basin of packet-switched data transmission networks, and the systematic establishment of links between them and of links connecting them to networks on other continents;

(b) that these networks are not only used for the transfer of computer data, but also as bearer networks for the provision of Telematic services;

(c) that basic financial data on the transmission, switching operational and maintenance facilities involved are needed in order to determine the accounting rate to be applied to the data transmission service, which may also serve as a component of the accounting rate for a Telematic service provided over these networks;

recommends

that the accounting rate shares to be applied on public packet-switched data transmission networks to remunerate the international centre, international transmission and national extension should be as follows:

1 Terminal traffic

Terminal share per kilosegment 1.30 SDR¹⁾ or 3.98 G. Fr.

In normal cases there will be no accounting for the duration component.

By special bilateral agreement, Administrations may account for the volume and duration components, applying the following terminal shares:²⁾

- per kilosegment 0.90 SDR or 2.75 G. Fr.
- per hours 0.63 SDR or 1.94 G. Fr.

2 Transit traffic

Transit share per kilosegment 0.60 SDR or 1.84 G. Fr.

In normal cases there will be no accounting for the duration component.

3 Total accounting rate

The total accounting rate is established by adding the terminal shares and the transit share(s).

4 Collection charge

The establishment of the collection charge is a national matter. It is however recognized that in the public packet-switched service the structure of the collection charge and of the accounting rate may differ. Cost elements not relevant for international accounting would be one of the reasons why a collection charge composed of volume and duration charges, independently of the structure of the accounting rate, might be required.

¹⁾ The amount of 1.30 SDR is composed of the following elements:

- international exchange 0.50 SDR
- international transmission 0.05 SDR
- national extension 0.75 SDR.

²⁾ The figures were calculated using 0.633 remunerated hours per remunerated kilosegment.

REMUNERATION OF DIGITAL SYSTEMS AND CHANNELS USED IN
TELECOMMUNICATION RELATIONS BETWEEN THE COUNTRIES
OF EUROPE AND THE MEDITERRANEAN BASIN¹⁾

(Melbourne, 1988)

The CCITT,

considering

(a) that increasing use is being made of digital systems and channels in land and submarine transmission media, either to make international private telecommunication circuits available to clients, or to extend established digital systems by transoceanic fibre-optic cables or by satellite;

(b) that basic financial data relating to digital transmission and switching media are needed in order to solve the tariff problems of digital telecommunication services and particularly those of the integrated services digital network (ISDN);

(c) the result of the cost study carried out by the TEUREM Group on international digital systems and channels used in telecommunication relations between countries in Europe and the Mediterranean Basin (see Annex A);

recommends

— that, in order to promote digital telecommunication services, Administrations should consider the flat-rate remunerations quoted in Annex A as maximum reference values;

— that, under the above circumstances, in the absence of special agreements between Administrations, the following flat-rate remuneration should be applied:

¹⁾ The Administrations of the Netherlands and the United Kingdom express their reservation with regard to this Recommendation.

Both Administrations oppose higher accounting rates for digital transmission facilities as compared to equivalent analogue facilities as such a practice conflicts with the principle that accounting rates for equivalent facilities are not related to the transmission medium used.

In their view, higher accounting rates for digital transmission facilities could have an adverse impact on the development of a full international digital telecommunication network which would be to the detriment of users and Administrations.

Transmission facilities ("line" part)

Table 1/D.307R gives the remuneration per year and per 100 km crowflight distance for the component B (see Annex A).

TABLE 1/D.307 R

System	Component B per year and per 100 km crowflight distance	
	SDR	G. Fr.
<i>As from 1 January 1989</i>		
565 Mbit/s systems	1 090 920	3 339 306
140 Mbit/s systems	336 367	1 029 620
34 Mbit/s systems	109 092	333 931
8 Mbit/s systems	36 364	111 310
2 Mbit/s systems	12 000	36 732
64 kbit/s channels	600	1 837
<i>As from 1 January 1990</i>		
565 Mbit/s systems	1 000 080	3 061 245
140 Mbit/s systems	308 358	943 884
34 Mbit/s systems	100 008	306 124
8 Mbit/s systems	33 336	102 041
2 Mbit/s systems	11 000	33 671
64 kbit/s channels	550	1 684
<i>As from 1 January 1991</i>		
565 Mbit/s systems	909 120	2 782 816
140 Mbit/s systems	280 312	858 035
34 Mbit/s systems	90 912	278 282
8 Mbit/s systems	30 304	92 761
2 Mbit/s systems	10 000	30 610
64 kbit/s channels	500	1 531

ANNEX A

(to Recommendation D.307 R)

Results of the cost study on international digital systems and channels

A.1 Transmission facilities ("line" part) (see Table A-1/D.307 R)

TABLE A-1/D.307 R

System	Yearly remuneration			
	Component A ^{a)} per equipment		Component B ^{b)} per 100 km crowflight distance	
	SDR	G. Fr.	SDR	G. Fr.
565 Mbit/s systems	20 000	61 220	1 200 000	3 673 200
140 Mbit/s systems	14 000	42 854	370 000	1 132 570
34 Mbit/s systems	5 400	16 529	120 000	367 320
8 Mbit/s systems	2 200	6 734	40 000	122 440
2 Mbit/s systems	1 000	3 061	13 200	40 405
64 kbit/s channels	210	643	660	2 020

^{a)} Component "A" comprises line terminal equipment and multiplex equipment, including the proportion of this equipment used in higher hierarchical systems.

^{b)} Remuneration of Component "B" takes into account consideration of the average costs dependent on distance in a network composed of various transmission facilities (coaxial or fibre-optic land and submarine cables, radio relay systems). It includes the cost of intermediate repeaters and transfer equipment in the transition from one digital system to another.

A.2 Switching (see Table A-2/D.307 R)

TABLE A-2/D.307 R

System	Yearly remuneration ^{a)}	
	SDR	G. Fr.
2 Mbit/s link	6 300	19 284
64 kbit/s channel	300	918

^{a)} Remuneration refers only to automatic operation and includes the proportion of the signalling equipment used (Signalling System No. 7).

**DETERMINATION OF RENTALS FOR THE LEASE OF INTERNATIONAL
PROGRAMME (SOUND- AND TELEVISION-) CIRCUITS AND ASSOCIATED
CONTROL CIRCUITS FOR PRIVATE SERVICE IN RELATIONS BETWEEN
COUNTRIES IN EUROPE AND THE MEDITERRANEAN BASIN¹⁾**

Preamble

This Recommendation, which should be applied in conjunction with the provisions of Recommendations D.1, D.2 and D.4, fixes the rentals for the lease of international sound- and television-programme circuits and associated control circuits for private service in relations between countries in Europe and the Mediterranean Basin.

In accordance with Article 30 of the *International Telecommunication Convention* (Nairobi, 1982), the standard rates given in this Recommendation are expressed in the monetary unit of the International Monetary Fund (IMF), the Special Drawing Right (SDR), and in gold francs (G. Fr.).

1 Rentals for the lease of sound-programme circuits and associated control circuits

1.1 The lease of a sound-programme circuit shall, in principle, last for a minimum of one month.

Nevertheless, sound-programme circuits may be leased for periods of less than one month, by agreement between the Administrations concerned.

1.2 For calculating the duration of the lease the provisions of §§ 2.4, 2.5 and 2.6 of Recommendation D.1 should apply.

1.3 The monthly rental for the lease of a telephone-type circuit for *all uses*²⁾, as provided in Recommendation D.2, with a multiplication coefficient of 1.00, is taken as reference for the determination of the rental for the lease of sound-programme circuits and associated control circuits.

1.4 The following monthly rentals are recommended for the lease of the different types of sound-programme circuit:

- a) narrow-band circuit (telephone-type circuit at approximately 3 kHz) with a 2-wire termination at the user's end:
 - 0.75 times the amount of the monthly rental for the lease of a telephone-type circuit for *all uses*;
- b) narrow-band circuit (telephone-type circuit at approximately 3 kHz) with a 4-wire termination at the user's end, whatever use is made of the circuit.
 - 1.00 times the amount of the monthly rental for the lease of a telephone-type circuit for *all uses*;
- c) sound-programme circuit at approximately 10 kHz:
 - 1.3 times the amount of the monthly rental for the lease of a telephone-type circuit for *all uses*;
- d) sound-programme circuit at approximately 15 kHz:
 - 1.6 times the amount of the monthly rental for the lease of a telephone-type circuit for *all uses*;
- e) stereophonic pair:
 - 3.2 times the amount of the monthly rental for the lease of a telephone-type circuit for *all uses*.

2 Rentals for the lease of television-programme circuits

2.1 *Lease on an annual basis*

2.1.1 The lease of television-programme circuits shall in principle last for a minimum of one year.

¹⁾ Countries in the Mediterranean Basin are countries not belonging to Europe but bordering the Mediterranean Sea.

²⁾ A definition of a telephone-type circuit for *all uses* is given in Recommendation D.2.

2.1.2 The following annual rentals are recommended for the lease of television-programme circuits:

- 40 836 SDR or 125 000 G. Fr. per terminal equipment at each end;³⁾
- 65 338 SDR or 200 000 G. Fr. per 100 kilometres of line.

2.2 *Lease on a monthly basis*

2.2.1 By agreement between the Administrations concerned, television circuits may be leased on a monthly basis.

2.2.2 In calculating the duration of the lease, one month shall mean one calendar month. Moreover, the day on which the circuit is made available ready for service to the customer, shall not be reckoned. The day on which the circuit is withdrawn shall be reckoned as a full day. Thus, a period of lease covering one month or more is calculated as follows:

- a) count the number of days beginning on the day following the day on which the circuit was made available until the end of the month;
- b) thereafter count the number of full calendar months, if any; and
- c) count the number of service days in the last month, including the day on which the circuit was withdrawn.

2.2.3 The monthly rental shall be equal to 1/10 of the annual rental, but the full amount paid by a customer for any one year may not exceed that of the annual rental.

2.2.4 As regards charging:

- full calendar months are subject to the monthly rental,
- fractions of a month shall be subject, for each day of lease, to a daily charge equal to 1/30 of the monthly rental (to determine the chargeable time, see the examples given in § 2.4.2 of Recommendation D.1).

2.3 *Short-term lease*

2.3.1 By agreement between the Administrations concerned, television circuits may be leased for periods of less than one month.

2.3.2 In calculating the life of a temporary lease, one day shall mean a period of 24 consecutive hours.

The life of a lease should be calculated in multiples of 24 hours, the period starting from the hour at which the circuit is made available until the time at which it is withdrawn. If the number of days thus obtained contains a fraction of 24 hours, it should be rounded up to the next whole number (to determine the chargeable time, see the examples given in § 2.5.1 of Recommendation D.1).

2.3.3 In this case (temporary lease), the rentals are calculated according to the provisions of § 2.5.2 of Recommendation D.1.

3 **General leasing conditions**

3.1 The leases referred to above shall generally be based on the uninterrupted provision of the leased circuit for 24 hours per day (subject to the provisions of §§ 1.4 and 1.6 of Recommendation D.1).

3.2 The lease shall be continued thereafter by tacit agreement until cancelled by either party. Notice of cancellation must normally be given seven days in advance of the effective date of cancellation. However, an Administration may require a different period of notice.

³⁾ In a transit country where two circuits are interconnected, the rental for two terminal equipments (i.e. 81 672 SDR or 250 000 G. Fr.) should be applied.

ACCOUNTING SYSTEM IN THE INTERNATIONAL AUTOMATIC
TELEPHONE SERVICE

In the international automatic service in Europe, the charge will, in general, be automatically registered on subscribers' meters and Administrations will no longer have tickets available for working out the distribution of charges on the basis of the chargeable duration of calls.

Although technically possible, the recording, for international accounts, of the chargeable duration of each effective call would require the installation of new equipment which does not seem justified with the sole object of establishing international accounts. The various systems used for charging subscribers would also result in different chargeable durations for the same traffic.

In these circumstances, after the question had been studied in the period 1957-1960, the IInd Plenary Assembly of the CCITT (New Delhi, 1960) recommended the application of certain provisions concerning continental telephone accounts. These provisions, applying only to Europe, were embodied in a Recommendation last published in the *White Book* (Mar del Plata, 1968) as number E.280 [1]. In view of the new international accounting system described in Recommendation D.150, former Recommendation E.280 was revised when Volume II-2 of the *Green Book* (Geneva, 1973) was prepared.

The new provisions, revised in the light of Recommendation D.150, read as follows:

1 International accounts for traffic in automatic service should be drawn up on the basis of the total of all call durations measured in the international exchanges of the country of origin on the appropriate meters or equivalent devices. A charge in gold francs per minute of call duration, valid in both directions of the relation, will be fixed by agreement between Administrations on the basis of the international standard tariffs in Recommendation D.300 R.

Exceptions to this general rule may occur in the following cases:

- a) When the Administrations concerned agree to dispense with accounts or to adopt lump-sum settlement.
- b) When one or both of the Administrations concerned already possess equipment capable of showing the chargeable durations incurred by the subscribers. The accounts prepared on these bases must give the same result as if the call durations had been measured, by applying if necessary the appropriate correction factors.
- c) When in automatic international service either or both of the Administrations concerned use a national type of simplified code-signalling system which makes it impossible to assess the call durations without excessive complications, the Administrations shall measure the total holding time of the outgoing international circuits. In that case, a correction factor shall be applied to the measured holding time values in order to obtain the real call duration which should have been measured as a total on the outgoing international circuits. The correction factors to be applied must be determined by agreement between the Administrations concerned.

2 International accounts for semiautomatic traffic shall be established on the same basis as those for automatic traffic (see Recommendation D.150, § 1.2.2).

3 To take account of the special system of charging for frontier relations (reduced charges between neighbouring frontier zones), special steps will have to be taken to discriminate between automatic calls in frontier relations and other automatic calls. This discrimination will be made every time that frontier traffic is routed wholly or partly (overflow) by international circuits having devices for measuring call duration.

This discrimination will, in general, necessitate:

- a) a more complete analysis of the national (significant) number of the called subscriber than the one which is quoted in Recommendation E.163 [2], and
- b) the determination of the origin of the calls, since frontier charges depend on the distance between the outgoing and the incoming frontier zones.

4 Measurement of the call duration on meters shall be made according to country of destination. When the country of destination comprises several charging zones, these measurements will ordinarily be made according to the charging zone.

5 The measurement of call durations made by the international exchange in the country of origin to a given country of destination shall not distinguish between the routes involving different transit countries, provided that the traffic is transmitted over direct circuits which constitute the normal route. For accounting purposes, the total volume of traffic sent by each route is assumed to be proportional to the number of circuits in service on the 15th of each month on each route.

6 The provisions of Recommendation D.150 shall be applied whenever the traffic is routed via a transit exchange in another country.

It is to be noted that when Recommendation E.280 [1] was prepared in 1960 the following rule was permitted to simplify matters and to avoid the need for an analysis of routes actually taken by a call beyond a transit exchange when several routes passing through different countries to the destination in question are possible from the transit exchange:

“The distribution of transit traffic over these different routes shall be taken to be the same as the distribution of traffic originating at the transit exchange for the destination concerned.”

7 In international accounts the traffic expressed in minutes relating to test calls, service calls and calls terminating at wrong numbers should not be deducted, since the overall duration of these various types of call is very small in relation to the total traffic.

Nevertheless, when the percentage of wrong numbers due to faults in the equipment in the country of destination is greatly in excess of what is regarded as a reasonable percentage in a service of good quality, the Administration in the country of origin will be entitled to make certain deductions, in agreement with the Administration of the country of destination.

When free calls are allowed, for example during international telecommunication conferences, deductions may be made in the international accounts by the Administrations of the country on whose territory the conferences are held.

8 The arrangements concerning the acceptance of international accounts as defined in [3] are applicable to automatic traffic.

Accounts shall be drawn up monthly but, to avoid errors which might be serious in the event of the meters being faulty, the call duration meters shall be read every day.

9 It is not essential that call duration meters be read at midnight on the last day of the month: it will suffice if they are read on the last day of the month at the most convenient time. Should the last day of the month not be a working day, these meters can be read the day before or the day after.

The monthly account forwarded to the other Administrations shall show the day on which meters were read. It ought to be possible to arrange for all meters in an exchange to be read on the same day, since there are relatively few circuits on which call duration meters have to be read.

10 The degree of accuracy of the call duration measurement equipment shall be $\pm 2\%$ with a confidence limit of 95%, on the understanding that the result is obtained for a set of measurements covering an adequate number of calls, which, in light traffic relations, may lead to acceptance of the fact that $\pm 2\%$ accuracy should be obtained on the overall measurements for the year, but not for each of the partial measurements made during that year (monthly measurements, for example, if the monthly interval is retained for the establishment of international accounts).

References

- [1] CCITT Recommendation *Accounting system in the automatic telephone service*, White Book, Vol. II-A, Rec. E.280, ITU, Geneva, 1969.
- [2] CCITT Recommendation *Numbering plan for the international telephone service*, Rec. E.163.
- [3] *Final Acts of the World Administrative Telegraph and Telephone Conference – Telegraph Regulations, Telephone Regulations*, Article 8, Accounting, of the Telephone Regulations, ITU, Geneva, 1973. (See also the Preliminary Note No. 3, page XIV.)

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SECTION 2

RECOMMENDATIONS APPLICABLE IN LATIN AMERICA

Recommendation D.400 R

ACCOUNTING RATES¹⁾ APPLICABLE IN TELEPHONE RELATIONS BETWEEN COUNTRIES IN LATIN AMERICA

When, in full exercise of their sovereignty, the Administrations of the countries of Latin America negotiate agreements to determine the accounting rates to be applied in their telephone relations, it is recommended that they consider the provisions below:

1 Long-distance relations

It is desirable to achieve some coordination and, as far as possible, standardization of the accounting rates applicable in telephone relations over similar distances between countries of the Latin America region. To this end, it has been considered advisable to establish a scale of accounting rates based on distance, with steps corresponding to distance ranges. This scale was established on the basis of:

- a) accounting rates already in use;
- b) the principle that the increase in rate at each step in the tariff scale is proportionately less the greater the distance, since the costs which vary with distance do not do so in direct proportion to the distance;
- c) the fact that the distance ranges become broader with distance;
- d) the adoption of the tariff step corresponding to the greatest distance (more than 4000 km) as the reference step and the application to it of a maximum rate per minute of 12.2440 gold francs;
- e) the attribution of a coefficient to each distance range, the coefficient 1 being attributed to the reference step and a decreasing coefficient to the other steps.

For each step in the tariff scale it is recommended that the maximum accounting rates below be applied:

Distance ranges	Coefficient	Maximum accounting rate per minute of conversation (in gold francs)
0 to 500 km	0.375	4.5915
501 to 1500 km	0.625	7.6525
1501 to 4000 km	0.83	10.1625
over 4000 km	1	12.2440

¹⁾ The accounting rate, as defined in CCITT Recommendation D.000 is the rate unit agreed between Administrations in a given relation that is used for the establishment of international accounts.

Telephone relations between countries of Latin America through direct circuits via satellite are included – for international accounting purposes – in the highest rate above, regardless of the geodesic distance separating the international centres involved.

2 Frontier telephone relations

The determination of accounting rates and collection charges in frontier telephone relations between countries of Latin America should be governed by the following provisions:

a) *Local connections*

For telephone connections using no trunk exchange of any type, the local telephone rates of the *originating* exchange will be applied, with no remuneration of the *receiving end*.

b) *Trunk connections*

For regional telephone connections using some type of trunk exchange, accounting rates and collection charges will be established by agreement between Administrations; collection charges should under no circumstances exceed the collection charges approved for telephone calls between the main exchanges of each of the two countries.

Whenever possible, frontier telephone relations should not entail the exchange of international accounts, and the collecting Administration should keep the entire amount collected. It should undertake, however, to supply all traffic information required to the Administration of the country of destination.

Recommendation D.401 R

ACCOUNTING RATES¹⁾ APPLICABLE TO TELEX RELATIONS BETWEEN COUNTRIES IN LATIN AMERICA

When in full exercise of their sovereignty the Administrations of the countries of Latin America negotiate agreements to determine the accounting rates to be applied in their telex relations, it is recommended that they consider the provisions below:

It is desirable to achieve some coordination and, as far as possible, standardization of accounting rates applicable in telex relations over similar distances between countries of the Latin America region.

To this end it has been considered advisable to establish a scale of accounting rates based on distance, with steps corresponding to distance ranges. This scale was established on the basis of:

- a) accounting rates already in use;
- b) the principle that the increase in rate at each step in the tariff scale is proportionately less the greater the distance, since the costs which vary with distance do not do so in direct proportion to the distance;
- c) the fact that the distance intervals increase with distance;
- d) the adoption of the tariff step corresponding to the greatest distance (more than 2500 km) as the reference step and the application to it of a maximum rate per minute of 9.1830 gold francs;
- e) the attribution of a coefficient to each distance range, the coefficient 1 being attributed to the reference step and a decreasing coefficient to the other steps.

¹⁾ The accounting rate, as defined in CCITT Recommendation D.000 is the rate unit agreed between Administrations in a given relation that is used for the establishment of international accounts.

For each step in the tariff scale, it is recommended that the maximum accounting rates below be applied:

Distance ranges	Coefficient	Maximum accounting rate per minute of conversation (in gold francs)
0 to 500 km	0.466	4.2854
501 to 2500 km	0.766	7.0403
over 2500 km	1	9.1630

Telex relations between countries of Latin America through direct circuits via satellite are included (for international accounting purposes) in the highest rate above, regardless of the geodesic distance separating the international centres involved.

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SECTION 3

RECOMMENDATIONS APPLICABLE IN ASIA AND OCEANIA

Recommendation D.500 R

ACCOUNTING RATES APPLICABLE TO TELEPHONE RELATIONS BETWEEN COUNTRIES IN ASIA AND OCEANIA

(Malaga-Torremolinos, 1984)

When, in full exercise of their sovereignty, the Administrations of the countries in Asia and Oceania negotiate among themselves agreements to determine the accounting rates to be applied in their telephone relations, it is recommended that they give consideration to the provisions detailed below.

1 Determination of accounting rates applicable in telephone relations between countries in Asia and Oceania

1.1 It is desirable to achieve some coordination and, as far as is possible, standardization of the accounting rates applicable in telephone relations over similar distances between countries in Asia and Oceania. To this end, a scale of accounting rates has been established using the "synthetic method" (see § 2.1 of Supplement No. 1), and taking into account:

- a) accounting rates already in use;
- b) the desirability to confine rate standards to an indication of the maximum accounting rates applicable within the region.

1.2 It is recommended to adopt a distance-related zonal pattern rather than adhere to a rigid distance-based pattern.

1.3 For each relation, the following maximum accounting rates are recommended:

<i>Zone</i>	<i>Distance</i>	<i>Maximum accounting rate per minute</i>
1	0 to 3000 km	6 gold francs or 1.96 SDR
2	3001 to 6000 km	7.5 gold francs or 2.45 SDR
3	over 6000 km	9 gold francs or 2.94 SDR

1.4 The distances indicated in the above scale are those between the appropriate international exchanges in the originating and destination countries.

1.5 It is also recommended that each country should normally constitute a single area for the purpose of fixing accounting rates. However in relations between adjacent countries, a country may be divided into several areas. In this case, the number of such areas for international traffic should be reduced to a minimum.

1.6 It is recognized that in some cases, such as transit switched services, Administrations may apply rates which reflect additional costs.

1.7 The present Recommendation may be implemented in a gradual manner, subject to agreements that might be reached bilaterally between the Administrations concerned.

2 Frontier relations between countries in Asia and Oceania

The accounting rates to be applied to frontier relations should be fixed by agreement between the Administrations concerned.

**ACCOUNTING RATES APPLICABLE TO
TELEX RELATIONS BETWEEN COUNTRIES IN ASIA AND OCEANIA**

(Malaga-Torremolinos, 1984)

When, in full exercise of their sovereignty, the Administrations of the countries in Asia and Oceania negotiate among themselves agreements to determine the accounting rates to be applied in their telex relations, it is recommended that they give consideration to the provisions detailed below.

1 Determination of accounting rates applicable in telex relations between countries in Asia and Oceania

1.1 It is desirable to achieve some coordination and, as far as is possible, standardization of the accounting rates applicable in telex relations over similar distances between countries in Asia and Oceania. To this end, a scale of accounting rates has been established using the "synthetic method" (see § 2.1 of Supplement No. 1), and taking into account:

- a) accounting rates already in use;
- b) the desirability to confine rate standards to an indication of the maximum accounting rates applicable within the region.

1.2 It is recommended to adopt a distance-related zonal pattern rather than adhere to a rigid distance-based pattern.

1.3 For each relation, the following maximum accounting rates are recommended:

<i>Zone</i>	<i>Distance</i>	<i>Maximum accounting rate per minute</i>
1	0 to 3000 km	6 gold francs or 1.96 SDR
2	3001 to 6000 km	7.5 gold francs or 2.45 SDR
3	over 6000 km	9 gold francs or 2.94 SDR

1.4 The distances indicated in the above scale are those between the appropriate international exchanges in the originating and destination countries.

1.5 It is also recommended that each country should normally constitute a single area for the purpose of fixing accounting rates. However, in relations between adjacent countries, a country may be divided into several areas. In this case, the number of such areas for international traffic should be reduced to a minimum.

1.6 It is recognized that in some cases, such as transit switched services, Administrations may apply rates which reflect additional costs.

1.7 Ideally, the accounting rate for telex should be less than the corresponding accounting rate for telephone in order that it may reflect the lower cost involved in the provision of facilities for that service.

1.8 The present Recommendation may be implemented in a gradual manner, subject to agreements that might be reached bilaterally between the Administrations concerned.

2 Frontier relations between countries in Asia and Oceania

The accounting rates to be applied to frontier relations should be fixed by agreement between the Administrations concerned.

SECTION 4

RECOMMENDATIONS APPLICABLE TO THE AFRICAN REGION

Recommendation D.600 R

DETERMINATION OF ACCOUNTING RATE SHARES AND COLLECTION CHARGES IN TELEPHONE RELATIONS BETWEEN COUNTRIES IN AFRICA

Introduction

When, in full exercise of their sovereignty, the Administrations of the countries of Africa negotiate among themselves agreements for determining the accounting rate shares and when they fix the collection charges to be applied in their telephone relations, it is recommended that they take into consideration:

- for the determination of accounting rate shares and accounting rates, the provisions of § 2 (Determination of accounting rates) of this Recommendation;
- for fixing the collection charges, the provisions contained in § 3 of this Recommendation;
- for fixing tariffs and remuneration for the facilities used for international telephone traffic routed via satellite, the provisions of § 4 of this Recommendation;
- for fixing tariffs for frontier relations, the provisions contained in § 5 of the Recommendation.

1 Explanation of some of the terms used in this Recommendation

An explanation of some of the terms used in this Recommendation is given in Recommendation D.000.

2 Determination of accounting rate shares in telephone relations between countries in Africa

2.1 General

2.1.1 Since the setting up of any international call involves both the international network and the national networks of the terminal countries, the accounting rate share for each country is derived from three basic elements, to which separate standard rates are applied:

- the *line* (transmission) part of the international network, which includes the various transmission systems used and is a function of the distance;

- the international exchange, i.e. the *switching* part of the international circuit, plus the terminal transmission equipment;
- the *national extension*, which denotes that part of the national network of each terminal country involved in completing the connection.

2.1.2 In special cases where the *line* (transmission) part of an international connection is:

- a tropospheric scatter link,
- a radio link, or
- a satellite link,

the provisions of this Recommendation with regard to the determination of an accounting rate share in relation to the length of the international circuit are not applicable, and accounting rate shares should be agreed upon between the Administrations concerned.

2.2 *Charging zones*

For calculating accounting rate shares, each country may be divided into charging zones. If need be, different charging zones may be fixed in a given country for traffic exchanged with different countries.

It is desirable that the number of charging zones for international traffic, in any one country, should be reduced to a minimum. As a general rule, in services between non-adjacent countries, each country should constitute one single zone.

2.3 *Calculation of distances (line part)*

2.3.1 *Distances to be taken into consideration*

2.3.1.1 *General case*

2.3.1.1.1 In determining the share payable to a country for the use of international circuits, the distance to be taken into consideration is:

in a terminal country

- *the crowflight distance* between:
 - a) the point at which the international circuit crosses the frontier, and
 - b) the international exchange at which the circuit terminates;

in a transit country

- *the crowflight distance* between the two frontier points at which the international circuit enters and leaves the country in question.

2.3.1.1.2 The same provisions apply to the determination of crowflight distances for groups and supergroups.

The above provisions for the calculation of distances apply to international circuits both on radio-relay links and on land cables.

2.3.1.2 *Special cases*

2.3.1.2.1 *Radio-relay links crossing the sea or a third country*

When a frontier is crossed by a radio-relay section of an international circuit passing over a third country or over the sea, without an intermediate relay station, the frontier point for measuring the circuit length shall be the point midway between the two relay stations on either side of the frontier.

2.3.1.2.2 *Submarine cables*

With regard to international circuits which are routed in submarine cables, the distance to be used for accounting shall be calculated as follows:

- a) for the land section of the circuit to the submarine cable station, the distance shall be calculated in accordance with the general principles (i.e. the crowflight distance), it being assumed that the point at which the circuit crosses the frontier is the cable station;
- b) for the submarine cable section, the distance used shall be the actual route distance between the submarine cable stations, as determined and agreed by the owners of the cable; the distance will be divided appropriately (normally 50/50) between the countries at the extremities of the cable.

2.3.1.2.3 *Special itineraries*

In exceptional circumstances, multiplication factors may be applied to the crowflight distance, from which the terminal and transit charges are calculated, to take account of special itineraries. For example, in the case of a direct transit country, the crowflight distance between the points on the frontier at which the circuit enters and leaves the country may (in exceptional circumstances) be replaced by a length representing the sum of two crowflight segments making up a broken line, etc.

2.3.2 *Possibility of weighting distances*

For calculation of the crowflight distances for the international section, a weighting according to the number of circuits is normally applied in a given relation to simplify accounting:

- when there are several international arteries with different itineraries terminating at an international exchange;
- when there are several international exchanges in a country for the relation concerned.

This weighting serves to determine a length (crowflight distance) for fixing the accounting rate shares relating to the international section and it would remain in force as long as the structure of the network was not significantly changed. This length of the international section would then be used to fix the *international section* element for the charges for international telephone circuits, groups and supergroups.

2.3.3 *Rounding off distances*

2.3.3.1 For the determination of accounting rate shares, the distances measured as indicated above shall be rounded up to 50 km or to the *next highest* multiple of 50 km.

2.3.3.2 This rounding rule applies to the distances in each of the terminal countries and in each of the transit countries and is applied to the total distance calculated for any one country. It is applicable to the remuneration of Administrations both on the basis of a flat-rate price for the facilities made available and on the basis of traffic units.

2.3.3.3 When distances are weighted in accordance with the provisions of § 2.3.2 above, the rounding shall be applied only after the weighted distance has been calculated.

2.3.4 *Existence of several routes in a given relation*

When, in a given relation, there are several routes traversing different transit countries, these transit countries shall in all cases receive the share or flat-rate price normally due to them for the distance between the points of entry and exit; any cost of equalizing collection charges in a relation comprising different routes shall be borne solely by the Administration of the country of origin and no deduction shall be made from the remuneration due to the transit countries.

2.4 Standard rates to be applied for international accounting¹⁾

For international accounting purposes, there are two methods of remuneration for the facilities made available by Administrations:

- on the basis of traffic units;
- on the basis of a flat-rate price for the facilities made available.

2.4.1 Remuneration on the basis of traffic units

To determine the accounting rate shares for each country, the following standard rates, *per minute of conversation time*, are recommended; however, these rates represent a maximum which Administrations undertake not to exceed:

1) International network

a) Manual operation

- *per 100 km* of international circuit (excluding any national circuit required for connecting the international exchange to the national exchange serving the subscriber) 17 gold centimes
- for the manual international exchange in the country of origin or destination 60 gold centimes ^{a)}
- for a manual international exchange in a transit country 65 ^{b)} gold centimes ^{a)}

b) Semi-automatic and automatic operation

- *per 100 km* of international circuit (excluding any national circuit required for connecting the international exchange to the national exchange serving the subscriber) 16 gold centimes
- for the semi-automatic international exchange in the country of origin:
 - Operating cost ^{c)} gold centimes
 - Switching cost ^{c)} gold centimes ^{a)}
 - Total 60 gold centimes
- for the automatic international exchange in the country:
 - of origin 46 gold centimes ^{a)}
 - of destination 46 gold centimes ^{a)}
- for an automatic international exchange (in a transit country) 58 gold centimes ^{a)}

^{a)} This share includes the cost of the transmission equipment for one extremity in terminal operation and for two extremities in transit operation.

^{b)} This sum is derived from that relating to the manual international exchange, by adding 5 gold centimes to the latter.

^{c)} These amounts will be provided when the next cost study is made.

2) National extension

When determining the accounting rates, an amount may be added to cover the costs of the extension of calls over the national network. This amount should be determined by the Administration of each country after consideration of the volume and distribution of traffic on the national extension in that country for each relation concerned. It is recommended that as a general rule this amount should not exceed 90 gold centimes per minute. This amount is considered as covering the costs of switching and accounting operations and, normally, of transmission over the national extension.

¹⁾ Use of charged time instead of conversation time for international accounting

According to their equipment, some Administrations may have to use charged time data for international accounts instead of conversation time, the charged time being given, for example, by the operator's ticket. In such a case, the Administration of origin will consult with the Administration of destination and, when necessary, with the Administration of transit countries to see whether it is necessary to adjust the number of minutes entered in the international accounts to make allowance for the small difference which may exist between the charged time they use and the conversation time they should use for accounting according to Recommendation D.150 and the present Recommendation.

2.4.2 Remuneration on the basis of a flat-rate price for the facilities made available

2.4.2.1 Remuneration of a direct transit country

2.4.2.1.1 To determine the flat-rate price for remuneration for the transmission facilities made available by Administrations, the following standard rates are recommended; however, these rates represent a maximum which Administrations undertake not to exceed:

	Per year and per 100 km of transmission channel (line part)
— per supergroup	120 000 gold francs ^{a)}
— per group	40 000 gold francs ^{a)}
— per telephone circuit	4 000 gold francs ^{a)}

^{a)} Including, wherever applicable, the use of modulation and demodulation equipment or throughband filters in the direct transit country.

2.4.2.1.2 When a circuit leased to a private user passes through a direct transit country, the Administration of this country will be remunerated by the Administrations of the terminal countries with a flat-rate price on the same basis as if the circuit were an ordinary public service circuit applying the rate in § 2.4.2.1.1 above.

2.4.2.2 Remuneration of a country of destination

To determine the flat-rate price for remuneration of the country of destination for the facilities made available by Administrations, the following standard rates are recommended; however, these rates represent a maximum which Administrations undertake not to exceed:

1) For the transmission channel (line part)

	Per year and per 100 km
— for a telephone circuit	4 000 gold francs
— for a group	40 000 gold francs
— for a supergroup	120 000 gold francs

2) For the international exchange (including the terminal transmission equipment)

— per year and per international circuit connected

<i>Manual operation</i>	<i>Automatic operation</i>
0.60 ^{a)} × 35 000 ^{b)}	0.46 ^{a)} × 40 000 ^{c)}
= 21 000 gold francs	= 18 400 gold francs

3) For the national extension

— per year and per international circuit connected

<i>Manual operation</i>	<i>Automatic operation</i>
PN ^{d)} × 35 000 ^{b)}	PN ^{d)} × 40 000 ^{c)}

^{a)} The cost of the transmission equipment for one extremity is included in the amounts of 60 and 46 gold centimes.
^{b)} Average number of minutes of traffic routed per year and per manual international telephone circuit.
^{c)} Average number of minutes of traffic routed per year and per semi-automatic or automatic international telephone circuit.
^{d)} PN represents the amount, per minute of conversation time, of the share to be fixed by each Administration for the extension of the connection on national territory.

- 4) The remuneration for terminal transmission equipment has been included in the preceding point 2) based on annual costs per extremity of:
- supergroup ^{e)}
 - group ^{e)}
 - circuits ^{e)}

^{e)} The amounts will be provided when the next cost study is made.

2.4.3 All the amounts given in § 2 above are reproduced in the three tables in Annexes A, B and C.

3 Determination of collection charges in telephone relations between countries in Africa

3.1 General

The establishment of the collection charge is a national matter. Although, in general, Administrations correlate collection charges and accounting rates, the two will not necessarily be the same for a number of reasons, for example:

- a) in most countries, collection charges and accounting rates will be expressed in different currencies;
- b) collection charges and accounting rates may be based on different traffic units;
- c) the value of national currencies may fluctuate relative to the gold franc;
- d) collection charges may be influenced by government fiscal policies;
- e) Administrations frequently establish common collection charges for geographical zones or groups of countries;
- f) in many relations there will be different routes with different accounting rates to which a single collection charge will be applied.

3.2 Charging zones

For the determination of collection charges each country may be divided into charging zones. If need be, different charging zones may be fixed in a given country for traffic exchanged with different countries.

It is desirable that the number of charging zones for international traffic, in any one country, should be reduced to a minimum. As a general rule, in services between non-adjacent countries, each country should constitute one single zone.

The fixing of zones for collection charges does not imply the same measure for accounting rate shares which can be weighted appropriately to make allowances for a zonal structure. Similarly, the fixing of zones for accounting rate shares (§ 2.2 above) does not imply any requirement for fixing zones for collection charges.

3.3 Determination of collection charges

3.3.1 The collecting charge, in principle, should be the equivalent in national currency of the accounting rate. If, taking into account the factors in §§ 3.1 and 3.2 above, an Administration wishes to fix a collection charge at a higher or lower amount than the direct equivalent of the accounting rate, it may apply a multiplication factor K. This factor K should not be more than 1.5 when applied to the accounting rate in the relation concerned.

As a general principle, Administrations should make every effort to avoid too large a dissymmetry between the collection charges applicable in each direction of the same relation and should endeavour to agree upon application of the same factor K. Collection charges should be fixed at reasonable levels and the factor $K = 1.5$ is a maximum which should not be applied automatically. The factor K may be different for the different relations operated by an Administration.

Note – It is emphasized that the application of a factor K should have no effect on international accounting.

3.3.2 In considering the collection charges for a relation in which automatic and semi-automatic working both exist, each Administration should decide to fix its charges:

- either by establishing different charges for each method of operation; or
- by establishing a single collection charge weighted according to the volume of each type of traffic.

3.4 *Examples of how to apply the standard rates mentioned in § 2 above for determining collection charges in gold francs*

The following tables give examples of the application of standard rates to calculate collection charges and show how the latter can be used to establish scales of collection charges (in gold francs) for application in the African region.

These scales are based on the principle of a sliding scale according to distance and therefore consist of rate steps corresponding to distance steps of 500 km and 1000 km.

To avoid excessive differences between collection charges and accounting charges for small distances (for example, in the relations between neighbouring countries) a factor K slightly more than 1 was applied, while for longer distances a higher factor K appeared suitable.

3.4.1 *International manual telephone operation*

Distance steps ^{a)}	Accounting rates			Collection charges			Factor K
	Share independent of distance (in gold francs)	Share based on distance ^{a)} (in gold francs)	Total (in gold francs)	Share independent of distance (in gold francs)	Share based on distance ^{a)} (in gold francs)	Total (in gold francs)	
0 - 500 km	3.00 ^{b)}	0.85	3.85	3.18	0.90	4.08	1.06
500 - 1000 km	3.00	1.70	4.70	3.18	1.80	4.98	
1000 - 1500 km	3.00	2.55	5.55	3.18	2.70	5.88	
1500 - 2000 km	3.00	3.40	6.40	3.18	3.60	6.78	
2000 - 3000 km	3.00	5.10	8.10	3.18	5.40	8.58	
3000 - 4000 km	3.00	6.80	9.80	3.18	7.20	10.38	1.15
> 4000 km (5000 km)	3.00	8.50	11.50	3.45	9.77	13.22	

^{a)} To calculate the accounting rate share based on distance, the maximum distance in each step was taken.

^{b)} This share was calculated as follows:

	Country of origin	Country of destination
National extension	0.90	0.90
International exchange	0.60	0.60
Total	1.50	1.50
3.00 gold francs		

3.4.2 International semi-automatic telephone operation

Distance steps ^{a)}	Accounting rates			Collection charges			Factor K
	Share independent of distance (in gold francs)	Share based on distance ^{a)} (in gold francs)	Total (in gold francs)	Share independent of distance (in gold francs)	Share based on distance ^{a)} (in gold francs)	Total (in gold francs)	
0 - 500 km	2.86 ^{b)}	0.80	3.66	3.03	0.84	3.87	1.06
500 - 1000 km	2.86	1.60	4.46	3.03	1.69	4.72	
1000 - 1500 km	2.86	2.40	5.26	3.03	2.54	5.57	
1500 - 2000 km	2.86	3.20	6.06	3.03	3.39	6.42	
2000 - 3000 km	2.86	4.80	7.66	3.03	5.09	8.12	
3000 - 4000 km	2.86	6.40	9.26	3.03	6.78	9.81	
> 4000 km (5000 km)	2.86	8.00	10.86	3.20	8.96	12.16	1.12

^{a)} To calculate the accounting rate share based on distance, the maximum distance in each step was taken.

^{b)} This share is calculated as follows:

	Country of origin	Country of destination
National extension	0.90	0.90
International exchange	0.60	0.46
Total	1.50	1.36
2.86 gold francs		

4 Tariffs and remuneration for facilities used for international telephone traffic in Africa routed via satellite

Some provisions on the fixing of tariffs and remuneration for the facilities used for international telephone traffic routed via satellite are contained in Annex D to this Recommendation.

5 Frontier relations between African countries

The conditions governing the establishment and operation of frontier relations depend largely on the structure of the national networks in the frontier areas. These conditions tend to alter, particularly as a result of network automation, which leads in turn to automation of frontier relations. Consequently, the collection charges applied to these relations are tending to become increasingly subject to the limitations imposed by the automatic charging equipments used. The collection charges and accounting rates to be applied to frontier relations should therefore be fixed by agreement between the Administrations concerned.

Whenever the situation permits, there should be no exchange of international accounts for frontier calls, the entire charge being retained by the Administration which collects it.

ANNEX A

(to Recommendation D.600 R)

Standard rates to be applied in Africa in determining accounting rate shares in the telephone service (traffic unit basis)

A — Accounting rate shares applicable in *terminal countries* per minute of conversation time

Direction of operation	Manual operation		Semi-automatic operation		Automatic operation	
	Transmission (per 100 km of circuit)	International exchange ^{a)}	Transmission (per 100 km of circuit)	International exchange ^{a)}	Transmission (per 100 km of circuit)	International exchange ^{a)}
Outgoing . .	17 gold centimes	60 gold centimes	16 gold centimes	60 gold centimes	16 gold centimes	46 gold centimes
Incoming . .	17 gold centimes	60 gold centimes	16 gold centimes	46 gold centimes	16 gold centimes	46 gold centimes

B — Accounting rate shares applicable in *transit countries* per minute of conversation time

Direct transit		Switched transit			
Manual	Automatic	Manual		Automatic	
Transmission (per 100 km of circuit)	Transmission (per 100 km of circuit)	Transmission (per 100 km of circuit)	International exchange ^{a)}	Transmission (per 100 km of circuit)	International exchange ^{a)}
17 gold centimes	16 gold centimes	17 gold centimes	65 gold centimes	16 gold centimes	58 gold centimes

^{a)} Including the cost of the transmission equipments for one extremity in terminal operation and for two extremities in transit operation.

ANNEX B

(to Recommendation D.600 R)

Standard rates to be applied in Africa in remuneration for transmission facilities made available by Administrations in a direct transit country (flat-rate basis)

Unit element considered	Transmission (line part) .
	Rates per 100 km per annum (in gold francs)
Supergroup	120 000 ^{a)}
Group	40 000 ^{a)}
Telephone circuit	4 000 ^{a)}

^{a)} Including, wherever applicable, use of modulation and demodulation equipments or throughband filters in the direct transit country.

ANNEX C

(to Recommendation D.600 R)

Standard rates to be applied in Africa in remuneration for facilities made available by Administrations in a destination country (flat-rate price basis)

Unit element considered	Transmission (line part)	International exchange		National extension	
	Per 100 km and per year	Operation		Operation	
		Manual	Automatic	Manual	Automatic
		Per year	Per year	Per year	Per year
International circuit	4 000 gold francs				
Group	40 000 gold francs	$0.60^a \times 35\,000^b = 21\,000$ gold francs	$0.46^a \times 40\,000^c = 18\,400$ gold francs	$PN^d \times 35\,000^b$	$PN^d \times 40\,000^c$
Supergroup	120 000 gold francs				

^{a)} The cost of the transmission equipment for one extremity is included in the amounts of 60 and 46 gold centimes.

^{b)} Average number of minutes of traffic routed per year and per manual international telephone circuit.

^{c)} Average number of minutes of traffic routed per year and per semi-automatic or automatic international telephone circuit.

^{d)} PN represents the amount, per minute of conversation time, of the share to be fixed by each Administration for the extension of the connection on national territory.

ANNEX D

(to Recommendation D.600 R)

Tariffs and remuneration for the facilities used for international telephone traffic in Africa routed via satellite

D.1 Tariffs

Contrary to what may be observed with regard to relations depending on land circuits, the distance factor has little effect on the cost of the facilities used to set up satellite links. Nevertheless, it is generally desirable for a number of reasons (uniformity of rates regardless of the transmission medium used, concept of service rendered, political considerations, etc.) to establish a rates system based on distance in relations using these transmission facilities, i.e. to apply the same scale of collection charges as in relations established on land transmission systems.

D.2 Remuneration for facilities

D.2.1 Direct links between terminal countries

When satellite circuits are used, remuneration for the facilities made available in the country of destination may be based, in accordance with Recommendation D.150, on either of the following:

- the accounting revenue division procedure, or
- the traffic unit price procedure.

D.2.1.1 *Accounting revenue division procedure*

When the accounting revenue division procedure is applied, it is generally agreed that the revenue should be shared on a 50/50 basis, regardless of the mode of operation.

D.2.1.2 *Traffic unit price procedure*

When the traffic unit price procedure is used, the accounting rate share might initially be fixed as indicated below; however, this share represents a maximum which Administrations undertake not to exceed:

- Share per minute: 4 gold francs.

This share covers only the path between the satellite and the international exchange (excluding that exchange). The shares for the international exchange and the national extension, as laid down in § 2, should therefore be added.

The share of 4 gold francs per minute mentioned above is based on the assumption that the earth station provides 60 circuits, each of which handles an average of 40 000 minutes of conversation time per year. On the same assumption, the cost of the space segment (1/2 circuit) has been fixed at 15 000 gold francs per year.

D.2.2 *Transit links*

D.2.2.1 *Direct satellite link set up in transit via an earth station in a third country*

The Administration operating the earth station in the third country is remunerated on the flat-rate price basis. This remuneration might be fixed initially at *70 000 gold francs per year per circuit*. However, this amount represents a maximum which Administrations undertake not to exceed.

This amount covers the costs of the earth station (excluding the space segment) and the extension to the international exchange in the third country. It is based on the assumption that the earth station would set up 60 circuits.

D.2.2.2 *Switched transit link*

The remuneration of the country providing switched transit and of the country of destination may be based either on the accounting revenue division procedure using an agreed key or on the traffic unit price procedure. In the latter case the shares to be considered are those given in this annex and in the Recommendation itself.

Recommendation D.601 R

DETERMINATION OF ACCOUNTING RATE SHARES AND COLLECTION CHARGES IN TELEX RELATIONS BETWEEN COUNTRIES IN AFRICA

Introduction

When, in full exercise of their sovereignty, the Administrations of the countries of Africa negotiate among themselves agreements for determining the accounting rate shares and when they fix the collection charges to be applied in their telex relations, it is recommended that they take into consideration:

- for the determination of accounting rate shares and accounting rates, the provisions of § 2 (Determination of accounting rate shares) of this Recommendation;
- for fixing the collection charges, the provisions contained in § 3 of this Recommendation;
- for fixing tariffs and remuneration for the facilities used for international telex traffic routed via satellite, the provisions of § 4 of this Recommendation.

1 Explanation of some of the terms used in this Recommendation

An explanation of some of the terms used in this Recommendation is given in Recommendation D.000.

2 Determination of accounting rate shares in telex relations between countries in Africa

2.1 General

2.1.1 Since the setting up of any international call involves both the international network and the national networks of the terminal countries, the accounting rate share for each country is derived from three basic elements, to which separate standard rates are applied:

- the *line* (transmission) part of the international network, which includes the various transmission systems used and is based on distance;
- the international exchange, i.e. the *switching* part of the international circuit plus the terminal transmission equipment;
- the *national extension*, which denotes that part of the national network of each terminal country involved in completing the connection.

2.1.2 In special cases where the *line* (transmission) part of an international connection is:

- a tropospheric scatter link,
- a radio link, or
- a satellite link,

the provisions of this Recommendation with regard to the determination of an accounting rate share in relation to the length of the international circuit are not applicable and accounting rate shares should be agreed upon between the Administrations concerned.

2.2 Calculation of distances (line part)

2.2.1 Distances to be taken into consideration

2.2.1.1 General case

In determining the share payable to a country for the use of international circuits, the distance to be taken into consideration is, in principle:

in a terminal country

- the *crowflight distance between*:
 - a) the point at which the international circuit crosses the frontier, and
 - b) the international exchange at which the circuit terminates;

in a transit country

- the *crowflight distance* between the two frontier points at which the international circuit enters and leaves the country in question.

The above provisions for the calculation of distances apply to international circuits both on land cables and on radio-relay links.

2.2.1.2 Special cases

2.2.1.2.1 Radio-relay links crossing the sea or a third country

When a frontier is crossed by a radio-relay section of an international circuit passing over a third country or over the sea, without an intermediate relay station, the frontier point for measuring the circuit length shall be the point midway between the two relay stations on either side of the frontier.

2.2.1.2.2 *Submarine cables*

With regard to international circuits which are routed in submarine cables, the distance to be used for accounting shall be calculated as follows:

- a) for the land section of the circuit to the submarine cable station, the distance shall be calculated in accordance with the general principles (i.e. the crowflight distance), it being assumed that the point at which the circuit crosses the frontier is the cable station;
- b) for the submarine cable section, the distance used shall be the actual route distance between the submarine cable stations, as determined and agreed by the owners of the cable; the distance will be divided appropriately (normally 50/50) between the countries at the extremities of the cable.

2.2.1.2.3 *Special itineraries*

In exceptional circumstances, multiplication factors may be applied to the crowflight distance, from which the terminal and transit charges are calculated, to take account of special itineraries. For example, in the case of a direct transit country, the crowflight distance between the points on the frontier at which the circuit enters and leaves the country may (in exceptional circumstances) be replaced by a length representing the sum of two crowflight segments making up a broken line, etc.

2.2.2 *Possibility of weighting distances*

For calculation of the crowflight distances for the international section, a weighting according to the number of circuits is normally applied in a given relation to simplify accounting:

- when there are several international arteries with different itineraries terminating at an international exchange;
- when there are several international exchanges in a country for the relation concerned.

This weighting serves to determine a length (crowflight distance) for fixing the accounting rate shares relating to the international section and shall remain in force as long as the structure of the network is not significantly changed. This length of the international section is then used to fix the *international section* element for the charges for international telex circuits.

2.2.3 *Rounding off distances*

2.2.3.1 For the determination of accounting rate shares, the distances measured as indicated above shall be rounded up to 50 km or to the next highest multiple of 50 km.

2.2.3.2 This rounding rule applies to the distances in each of the terminal countries and in each of the transit countries and is applied to the total distance calculated for any one country. It is applicable to the remuneration of Administrations both on the basis of a flat-rate price for the facilities made available and on the basis of traffic units.

2.2.3.3 When distances are weighted in accordance with the provisions of § 2.2.2 above, the rounding shall be applied only after the weighted distance has been calculated.

2.2.4 *Existence of several routes in a given relation*

When, in a given relation, there are several routes traversing different transit countries, these transit countries shall in all cases receive the share or flat-rate price normally due to them for the distance between the points of entry and exit; any cost of equalizing collection charges in a relation comprising different routes shall be borne solely by the Administration of the country of origin and no deduction shall be made from the remuneration due to the transit countries.

2.3 *Standard rates to be applied for international accounting*

For international accounting purposes, there are two methods of remuneration for the facilities made available by Administrations:

- on the basis of traffic units;
- on the basis of a flat-rate price for the facilities made available.

2.3.1 *Remuneration on the basis of traffic units*

To determine the accounting rate shares for each country, the following standard rates, *per minute of telex call*, are recommended; however, these rates represent a maximum which Administrations undertake not to exceed:

2.3.2.2 Remuneration of a country of destination

To determine the flat-rate price for remuneration of the country of destination for the facilities made available by Administrations, the following standard rates are recommended; however, these rates represent a maximum which Administrations undertake not to exceed:

1) For the transmission channel (line part)

Per year and per 100 km

- per 50-baud telegraph channel 400 gold francs
- per VFT telephone bearer circuit 4000 gold francs

2) For the international exchange (including the terminal transmission equipment)

- per year and per 50-baud international circuit connected

Automatic operation

$$0.32 \times 25\,000^a) = 8000 \text{ gold francs } ^b)$$

^{a)} Average number of minutes of traffic routed per year and per international telex circuit.

^{b)} The cost of the terminal telex transmission equipment for one extremity is included in the amount of 32 gold centimes.

3) For the national extension

- per year and per 50-baud international circuit connected

Automatic operation

$$PN^b) \times 25\,000^a)$$

^{a)} Average number of minutes of traffic routed per year and per international telex circuit.

^{b)} PN represents the amount, per minute of telex call, of the share to be fixed by each Administration for the extension of the connection on national territory.

2.3.3 All the amounts given in § 2 above are reproduced in the three tables in Annexes A, B and C.

3 Determination of collection charges in telex relations between countries in Africa

3.1 General

The establishment of the collection charge is a national matter. Although, in general, Administrations correlate collection charges and accounting rates, the two will not necessarily be the same for a number of reasons, for example:

- a) in most countries, collection charges and accounting rates will be expressed in different currencies;
- b) collection charges and accounting rates may be based on different traffic units;
- c) the value of national currencies may fluctuate relative to the gold franc;
- d) collection charges may be influenced by government fiscal policies;
- e) Administrations frequently establish common collection charges for geographical zones or groups of countries;
- f) in many relations there will be different routes with different accounting rates to which a single collection charge will be applied.

3.2 Determination of collection charges

3.2.1 The collection charge, in principle, should be the equivalent in national currency of the accounting rate. If, taking into account the factors in § 3.1 above, an Administration wishes to fix a collection charge at a higher or lower amount than the direct equivalent of the accounting rate, it may apply a multiplication factor K. This factor K should not be more than 1.8 when applied to the accounting rate in the relation concerned.

As a general principle, Administrations should make every effort to avoid too large a dissymmetry between the collection charge applicable in each direction of the same relation and should endeavour to agree upon application of the same factor K. Collection charges should be fixed at reasonable levels and the factor K = 1.8 is a maximum which should not be applied automatically. The factor K may be different for the different relations operated by an Administration.

Note – It is emphasized that the application of a factor K should not affect international accounting.

3.2.2 In considering the collection charges for a relation in which automatic and semi-automatic working both exist, each Administration should decide to fix its charges:

- either by establishing different charges for each method of operation; or
- by establishing a single collection charge weighted according to the volume of each type of traffic.

3.3 *Examples of how to apply the standard rates mentioned in § 2 above for determining collection charges*

Table 1/D.601 R gives examples of the application of standard rates for semi-automatic operation to calculate collection charges and shows how the latter can be used to establish scales of collection charges (in gold francs) for application in the African region.

These are on the principle of a sliding scale according to distance and therefore consist of rate steps corresponding to distance steps of 1000 km.

To avoid excessive differences between collection rates and accounting rates for small distances (for example, in the relations between neighbouring countries) a factor K slightly more than 1 was applied, while for longer distances a higher factor K appeared suitable.

TABLE 1/D.601R

Distance steps ^{a)}	Accounting rates			Collection charges			Factor K
	Share independent of distance (in gold francs)	Share based on distance ^{a)} (in gold francs)	Total (in gold francs)	Share independent of distance (in gold francs)	Share based on distance ^{a)} (in gold francs)	Total (in gold francs)	
0 - 1000 km	2.42 ^{b)}	0.20	2.62	3.15	0.26	3.41	1.30
1000 - 2000 km	2.42	0.40	2.82	3.15	0.52	3.67	
2000 - 3000 km	2.42	0.60	3.02	3.15	0.78	3.93	
3000 - 4000 km	2.42	0.80	3.22	3.15	1.04	4.19	
> 4000 km (5000 km)	2.42	1.00	3.42	4.36	1.80	6.16	1.80

^{a)} In calculating the accounting rate share based on distance, the maximum distance in each step was taken.

^{b)} This share is calculated as follows:

	Country of origin	Country of destination
National extension	0.80	0.80
International exchange	0.50	0.32
Total	1.30	1.12
2.42 gold francs		

4 Tariffs and remuneration for facilities used for international telex traffic in Africa routed via satellite

Some provisions on the fixing of tariffs and remuneration for the facilities used for international telex traffic routed via satellite are given in Annex D to this Recommendation.

ANNEX A

(to Recommendation D.601 R)

Standard rates to be applied in Africa in determining accounting rate shares in the telex service (traffic unit basis)

A — Accounting rate shares applicable in *terminal countries* per minute of telex call

Direction of operation	Semi-automatic operation		Automatic operation	
	Transmission (per 100 km of circuit)	International exchange ^{a)}	Transmission (per 100 km of circuit)	International exchange ^{a)}
Outgoing	2 gold centimes	50 gold centimes	2 gold centimes	32 gold centimes
Incoming	2 gold centimes	32 gold centimes	2 gold centimes	32 gold centimes

B — Accounting rate shares applicable in *transit countries* per minute of telex call

Automatic direct transit	Automatic switched transit	
Transmission (per 100 km of circuit) ^{b)}	Transmission (per 100 km of circuit) ^{b)}	International exchange ^{a)}
2 gold centimes	2 gold centimes	50 gold centimes

^{a)} Including the cost of the transmission equipments for one extremity in terminal operation and for two extremities in transit operation.

^{b)} Where, in order to establish a telex circuit, telegraph channels are connected in a direct transit country, an additional charge of 10 gold centimes is applied for the translating equipment used to connect them.

ANNEX B

(to Recommendation D.601 R)

Standard rates to be applied in Africa in remuneration for transmission facilities made available by Administrations in a direct transit country (flat-rate price basis)

Unit element considered	Transmission (line part)
	Rates per 100 km per annum (in gold francs)
VFT bearer circuit	4000 ^{a)}
Telegraph channel, 50 bauds	400 ^{b)}

^{a)} Including, wherever applicable, the use of modulation and demodulation equipments or throughband filters in the direct transit country.

^{b)} Where, in order to establish a circuit, two telegraph channels in a direct transit country are connected, an additional charge is made for the lease of transmission equipment for two telegraph channel extremities, i.e., $1000 \times 2 = 2000$ gold francs, irrespective of the number of such connections in the direct transit country.

ANNEX C

(to Recommendation D.601 R)

Standard rates to be applied in Africa in remuneration for facilities made available by Administrations in a destination country (flat-rate price basis)

Unit element considered	Transmission (line part)	International exchange	National extension
	Per 100 km and per year	Automatic operation	Automatic operation
		Per year	Per year
Per international circuit — 50 bauds VFT bearer	400 gold francs 4000 gold francs	$0.32 \times 25\,000$ ^{a)} = 8000 gold francs ^{b)} Not applicable	PN ^{c)} $\times 25\,000$ ^{a)} Not applicable

^{a)} Average number of minutes of traffic routed per year and per international telex circuit.

^{b)} The cost of telex terminal transmission equipment for one extremity is included in the amount of 32 gold centimes.

^{c)} PN represents the amount, per minute of telex call, of the share to be fixed by each Administration for the extension of the connection on national territory.

ANNEX D

(to Recommendation D.601 R)

Tariffs and remuneration for the facilities used for international telex traffic in Africa routed via satellite

D.1 *Tariffs*

Contrary to what may be observed with regard to relations depending on land circuits, the distance factor has little effect on the cost of the facilities used to set up for satellite links. Nevertheless, it is generally desirable for a number of reasons (uniformity of rates regardless of the transmission medium used, concept of service rendered, political considerations, etc.) to establish a rates system based on distance in relations using these transmission facilities, i.e. to apply the same scale of the collection charges as in relations established on land transmission systems.

D.2 *Remuneration for facilities*

D.2.1 *Direct links between terminal countries*

When satellite circuits are used, remuneration for the facilities made available in the country of destination may be based, by analogy with Recommendation D.150, on either of the following:

- the accounting revenue division procedure, or
- the traffic unit price procedure.

D.2.1.1 *Accounting revenue division procedure*

When the accounting revenue division procedure is applied, it is generally agreed that the revenue should be shared on a 50/50 basis, regardless of the mode of operation.

D.2.1.2 *Traffic unit price procedure*

When the traffic unit price procedure is used, the accounting rate share might initially be fixed as indicated below; however, this share represents a maximum which Administrations undertake not to exceed:

- share per minute: 27 gold centimes.

This share covers only the path between the satellite and the international exchange (excluding that exchange). The shares for the international exchange and the national extension, as laid down in § 2, should therefore be added.

The share of 27 gold centimes per minute mentioned above is based on the assumption that the earth station provides 60 telephone circuits, each VFT telephone bearer circuit serving to establish about 10 telegraph channels, each of which handles an average of 25 000 minutes of calls per year. On the same assumption, the cost of the space segment (1/2 telephone circuit) has been fixed at 15 000 gold francs per year.

D.2.2 *Transit links*

D.2.2.1 *Direct satellite link set up in transit via an earth station in a third country*

The Administration operating the earth station in the third country is remunerated on the flat-rate price basis. This remuneration might be fixed initially at 10 000 gold francs per year per telegraph circuit. However, this amount represents a maximum which Administrations undertake not to exceed.

This amount covers the costs of the earth station, the space segment and the extension to the international exchange in the third country. It is based on the assumption that the earth station would set up 60 telephone circuits. For the channel extension from the international exchange, the rates referred to in § 2.3.2.1.1 are applied.

D.2.2.2 Switched transit link

The remuneration of the country providing switched transit and of the country of destination may be based either on the accounting revenue division procedure using an agreed key or on the traffic unit price procedure. In the latter case the shares to be considered are those given in this annex and in the Recommendation itself.

Recommendation D.606 R

PREFERENTIAL RATES IN TELECOMMUNICATION RELATIONS BETWEEN COUNTRIES IN AFRICA

(Malaga-Torremolinos, 1984)

The CCITT,

considering

that for some time now the telecommunication Administrations of African countries have been subject to solicitation on the part of a number of international organizations or specialized agencies with a view to the granting of preferential rates,

considering further

(a) that the telecommunication Administrations of Africa have an important role to play in the socio-economic development of each individual country and of the continent as a whole, which entitles them to a reasonable rate of return on investment to enable them to fulfill their mandate and practice some degree of self-financing;

(b) that these Administrations should also be able to reimburse the loans contracted for the modernization and development of their telecommunication networks out of the revenue from the services they provide,

recommends

that the conclusions adopted by the Plenary Meeting of the TAF Group be applied, namely that as a general rule preferential rates shall not be granted to users in international relations between countries in Africa.

PART III

SUPPLEMENTS TO SERIES D RECOMMENDATIONS

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COST AND TARIFF STUDY METHOD

(At the present time this method is applicable only to the countries in Europe and the Mediterranean Basin)

1 Introduction

1.1 In the past, before 1970, the CCITT made a number of studies of international telephone and telex service costs. Those studies usually referred, however, only to parts of the services and the Recommendations prepared on the subject of tariffs applied only to the European region. Those Recommendations were based on the principle that, in a given relation, the accounting rate consisted of terminal and transit shares which were the same for all the routes used. When a detour was used, the hypothetical terminal and transit shares had therefore to be reduced proportionally. The collection charges corresponded more or less to the amounts of the accounting rates converted into national currencies.

1.2 Between 1964 and 1968, a new philosophy based on a commercial principle was worked out. Recommendation D.150, adopted by the IVth Plenary Assembly of the CCITT (1968), made a clear distinction between the accounting rate and the collection charge. The accounting rate was regarded as a matter to be settled between Administrations, each Administration being reimbursed according to the cost of the equipment it made available. The fixing of collection charges became, within certain limits, a national matter. Each terminal Administration was expected to fix a collection charge in such a way that it covered at least the average of the accounting rates applicable to the various routes used.

1.3 In order to put this new conception into practice, it was necessary to undertake detailed cost studies for the technical facilities and the work involved in setting up telephone and telex calls, in sending telegrams, and in establishing sound-programme and television transmissions in the international service. For that purpose the IVth Plenary Assembly of the CCITT decided to set up four regional tariff groups, namely:

- the TAF Group for the African Region,
- the TAL Group for the Latin American Region,
- the TAS Group for the Asia and Oceania Region,
- the TEUREM Group for the Region of Europe and the Mediterranean Basin.

2 Methods used for establishing tariffs

In carrying out their task, the Tariff Groups used either a simple and purely pragmatic method, called the *synthetic method*, or a complex method, based on cost studies, called the *analytic method*.

2.1 Synthetic method

2.1.1 When the Administrations in a region do not have the necessary data for calculating the costs of the technical facilities and the work involved in the provision of their services (for example, when they do not have an analytical cost accounting system), or when they decide for other reasons not to make a detailed study, a Tariff Group can confine itself to making a synthesis of the tariffs applied by the various Administrations in its region. On the basis of this synthesis, the group establishes, by charging zone, a scale of overall rates for international accounting and, where appropriate, for establishing collection charges in national currencies. The overall charge used for international accounting is called the *accounting income*. It is normally shared between the Administrations of the terminal countries on a 50-50 basis. If, however, the facilities made available by the two terminal countries are not more or less equivalent, a proportion other than 50-50 may be adopted. In principle, the Administration of each terminal country pays a suitable share (normally half) of the remuneration, if any, due to the Administrations of the transit countries.

2.1.2 It is obvious that this synthetic method does not solve the fundamental problems of rate-fixing. It is incapable of establishing a rate for a service a priori, on a theoretical basis, but only a posteriori, on the basis of experience.

2.2 *Analytic method*

2.2.1 When the Administrations of a region are in a position to analyze the costs involved in the provision of a given service (amortization, financial charges, labour costs, cost of consumable materials for maintenance, taxes, costs of the services provided by third persons), a Tariff Group normally uses the so-called *analytic* method. This consists in laying down — on a rational basis and, in particular, on the basis of cost studies — standards for the fair remuneration of the various facilities made available by an Administration in providing a given service (telephone or telex call, telegram, etc.). For calculating costs, Administrations usually possess data derived from an analytical cost accounting system, which they supplement, as required, with more detailed studies and data provided by statistics.

2.2.2 By means of a questionnaire, the Tariff Group collects the data obtained by the Administrations in its region, synthesizes them, calculates average costs taking account of the special conditions prevailing in the various countries, and determines the standards to be recommended for remunerating the facilities made available by Administrations in international telecommunications services. These standards can then be used by the Administrations in the region in fixing their accounting shares for purposes of international accounting, their accounting rates and, hence, their collection charges. They take account not only of actual costs, but also of criteria recommended by the CCITT for rate-fixing purposes (e.g., the concept of services rendered).

2.2.3 The standards recommended for determining accounting rates are used for remunerating the Administrations of the terminal and transit countries by the so called *flat-rate price* or *traffic unit price* methods, explained in the relevant CCITT Recommendations.

It is only by the analytic method, therefore, that all the requirements of rate fixing can be met. This is the method traditionally used by the CCITT.

3 **Cost studies**

3.1 *General*

3.1.1 To carry out a detailed tariff study in international telecommunications services, a Tariff Group must know the cost of the services supplied by the Administrations and the factors affecting the provision of these services. The Tariff Group must therefore collect the detailed data from the Administrations in its region, synthesize them, calculate the average costs of the various factors and determine the standards to be adopted in remunerating the facilities made available by Administrations in providing a service in the international telecommunications services. Administrations must, of course, be assured that the data collected are treated absolutely confidentially.

3.1.2 The numerical data provided by Administrations should be expressed in a universally recognized currency. For this purpose, it is desirable to use the monetary units mentioned in Article 30 of the International Telecommunication Convention (Nairobi, 1982), i.e. either the monetary unit of the International Monetary Fund which is at present the special drawing right (SDR), or the gold-franc (G.Fr.).

In the event that the same monetary unit is not used by all Administrations, the Tariff Group should:

- a) choose the monetary unit in which costs are calculated and present the results. The monetary unit used by the majority of Administrations having responded to the questionnaire will generally be used. Data given in the other monetary unit will be converted into the unit adopted by the Tariff Group;
- b) convert the tariff standards established in the chosen monetary unit into the other monetary unit used by the minority of Administrations. For the conversion from SDR to G.Fr. or vice-versa, the Tariff Group shall use the conversion rate recommended in Recommendation D.195 and in the International Telecommunication Regulations adopted by the World Administrative Telegraph and Telephone Conference, 1988, i.e. 1 SDR = 3.061 G.Fr. or 1 G.Fr. = 1/3.061 SDR.

In view of the problems which may arise in rounding off the values obtained, Appendix I indicates the methodology used by the TEUREM Group to convert into SDR the tariff standards calculated in G.Fr. This methodology can also be used to convert from SDR to G.Fr.

3.1.3 The numerical data provided by Administrations should refer to the same reference year. The Tariff Group must bring them up to date for the period during which the tariffs will be applied. For this purpose the average annual variations of unit prices are taken into account, i.e. possible price increases due to inflation and reductions obtained through technical improvements or the more efficient use of facilities. In determining tariff standards, account will also be taken of a rate of interest sufficiently high to ensure the expected return on the invested capital and of the existing standby facilities made available by Administrations.

3.1.4 The values adopted by the Tariff Group are not “averages” in the strict mathematical sense, but represent values which are generally acceptable for all the countries concerned in the region. The determination of “acceptable” or “reasonable” values thus involves a considerable element of judgement and approximation.

3.2 *Working method*

In making cost studies and establishing tariff standards to be applied for paying for the facilities made available by Administrations in supplying services to users of the international telecommunication services, Tariff Groups generally use the method described below.

3.2.1 *Preparation of a questionnaire*

3.2.1.1 A detailed questionnaire is prepared for the service in question, namely for:

- the telephone service,
- the telex service,
- the public telegram service, or
- sound-programme and television transmissions, etc.

The questionnaire first refers to the *international* part of relations. If necessary, a special questionnaire may be drawn up to collect data referring to the *national extension*, i.e. that part of the connection linking the international centre with the national centres to which users' stations are connected.

3.2.1.2 Each questionnaire is divided, according to need, into several *parts* and *chapters*.

- i) *Division into parts* according to the functions performed or other criteria such as:
 - general information,
 - transmission,
 - switching and operation,
 - national extension (for the case where a separate study is not carried out).
- ii) *Division into chapters* according to accounting or statistical criteria, such as:
 - investment costs,
 - annual charges (capital charges, maintenance costs, building costs, operational costs),
 - statistical information.

3.2.1.3 *Comments*

The telephone service and the telex service are, in many respects, extremely similar, even if the service supplied is different. There are, therefore, many resemblances between cost studies of these two services. The same applies, though to a lesser extent, to studies of sound-programme and television transmissions.

On the other hand, the public telegram service is, by its very nature, very different from the two above-mentioned services, primarily because it involves the handing in and delivery of telegrams, operations which usually call for the employment of considerable numbers of staff. Cost studies of this service therefore involve a number of specific characteristics.

For the “transmission” part, the same questionnaire (usually that for the telephone service) can be used for the various services (telephone, telex, sound-programme transmissions) for determining the costs:

- of a supermastergroup,
- of a mastergroup,
- of a supergroup,

- of a group,
- of a carrier telephone circuit, or
- of a voice-frequency telegraphy channel.

An example of the type of questions included is given in Annex A.

3.2.2 *Circulation of questionnaires and collection of data*

The questionnaires are circulated by the CCITT Secretariat to all Administrations in the region. The Administrations are invited to complete them as accurately as possible and return them to the CCITT Secretariat by a given date. It is unquestionably a delicate and difficult task for Administrations to prepare replies to these questionnaires, because the data are not always immediately available in the required form or presentation; research is, therefore, usually necessary to extract them from accounting and statistical documents and calculations are often required.

3.2.3 *Analysis of the replies and presentation of the results*

The CCITT Secretariat analyzes the replies provided by Administrations and presents the numerical data *anonymously* in the form of tables.

Tariff Group meetings make an itemized examination of the analysis results of each of the items in the questionnaires, and for each item a standard reply is formed. These standard replies constitute the basic data for the cost study.

A whole series of detailed calculations are made on the basis of the data thus arrived at. The model tables given in Annex B, used for recording the results of calculations, give an idea of the procedure followed, the order in which the data are considered and the sequence of calculations carried out.

The result of this procedure is the establishment of costs, standards of remuneration to be applied between Administrations and accounting rates for the various facilities made available and the services provided to users in the international telecommunication services, e.g.:

- per supermastergroup, mastergroup, supergroup or group of circuits;
- per telephone, telegraph, sound-programme, etc. circuit;
- per minute of telephone, telex, etc. call; or
- per word of a telegram.

The standards thus determined are included in the CCITT Recommendations applicable at the regional level.

3.3 *Analysis of certain problems relating to cost studies*

3.3.1 *Methods for calculating average costs*

According to the nature of the services provided by the Administrations, it is recommended that one of the methods described below be used to calculate the average costs for a region.

3.3.1.1 *Comparison by analytical costs*

In determining the average cost of the *international part* of a service provided (charges relating to technical equipment used exclusively for the international service and operating costs), it is customary to compare the *detailed numerical data* provided by the Administrations.

These numerical data refer to:

- investment costs,
- maintenance costs,
- building costs,
- operating costs.

The aim of the study being to calculate, for a given year, the average annual charges of the equipment made available and the average costs per traffic unit (for example per minute of telephone call), the procedure described below should be followed.

3.3.1.1.1 *Investment costs*

First, the average investment costs are calculated per given unit or element on the basis of the numerical data supplied by Administrations for the reference year (for example, per 100 km of actual length of an installed supergroup). Next, the investment cost is calculated for equipment *in service* in the form established and for the year in which the tariff rates are to be applied. To obtain these results, coefficients are applied bearing in mind:

- standbys (installed apparatus/apparatus in service),
- price increases (annual variation rates),
- composition of the standard network (relative importance of coaxial cables, radio-relay links, etc.),
- the ratio: actual length/crowflight distance of the transmission facilities.

3.3.1.1.2 *Financial charges*

The average investment costs are used to calculate the annual *financial charges* per piece of equipment in service, on the basis of the weighted average life assumed for this equipment and the interest rate assumed for remunerating invested capital. For this purpose the "Table giving amortization coefficients as a function of amortization period and interest rate", contained in Annex C, is used. These annual charges are generally called "capital charges" or "financial charges".

3.3.1.1.3 *Maintenance costs*

The average annual maintenance costs are calculated per given unit or element (installed circuit or group of circuits) on the basis of numerical data supplied by the Administrations for the reference year. If Administrations cannot specify actual amounts, agreement is reached on a percentage to be applied to the investment cost to calculate the annual maintenance costs.

The annual maintenance costs are then calculated per equipment *in service* in the form established and for the year in which the tariff rates are to be applied, following the procedure described in "Investment costs".

In evaluating maintenance costs, particular account should be taken of the following types of cost: staffing and labour, consumable materials, electricity and transport.

3.3.1.1.4 *Building costs*

Since some premises either belong to or are rented by the Administrations and equipment is generally installed in premises together with other equipment or services, building costs are usually calculated in the form of an *annual rental*. Exceptions to this rule are buildings which essentially have one purpose only, for example, radio-relay stations. In cases such as these, buildings are included in investment costs.

Annual building costs per piece of equipment *in service*, in the form established and for the year in which the tariff rates are to be applied, are calculated in the same way as annual maintenance costs.

3.3.1.1.5 *Operation costs*

For the purpose of cost studies, the only expenses considered as operation costs are the costs of the staff responsible for the setting up of calls, the international information service, the processing of telegrams, etc. Operation costs also include supervisory and senior staff. Overheads are included in these expenses.

With regard to the telephone and telex services, operation costs are calculated per circuit in service per year.

Average operation costs are determined on the basis of numerical data supplied by the Administrations for the reference year. They are brought up to date to correspond to the period in which the tariff rates are to be introduced by applying an increase coefficient to take account of the increase in salaries during the period in question, i.e. the annual variation rate in the total wage bill.

3.3.1.1.6 *Total annual charges*

The total annual charges per telecommunication circuit or circuit group are calculated by adding the amounts obtained for the "Transmission" part and the "Switching and operation" part under the headings:

- financial charges,
- maintenance costs,
- building costs,
- operation costs.

3.3.1.1.7 *Traffic unit cost*

To calculate the traffic unit cost (minute of telephone or telex call, etc.) the total annual charges for an international circuit are divided by the average number of traffic units routed by the circuit per year.

3.3.1.2 *Direct comparison of national costs*

In determining the average cost of the *national extension* of a service provided (telephone or telex communication), i.e. the part of the connection extending from the international centre to the national centres of the subscribers, it would be difficult to employ the method described under "Comparison by analytical costs". There are considerable differences between countries with regard to:

- the structure, as well as technical and operating conditions, of national networks;
- telephone and telex subscriber density;
- the distribution of international traffic within each country;
- the organization of the Administration;
- the methods and means of financing;
- the cost of living.

3.3.1.2.1 *Method employed*

In this case a simplified method is normally used i.e. the *costs calculated by Administrations for their respective countries are compared directly* per traffic unit (minute) for one of the elements or services listed below:

- a national local or trunk exchange;
- a terminal transmission equipment;
- 100 km (crowflight) of a national circuit;
- billing of subscribers, international accounting, management of international services (administrative costs).

To calculate the average total cost of the *national extension* of a region per traffic unit, the Administration should also provide statistical and financial data, namely:

- the number of national exchanges, trunk and local (weighted average) used to route an incoming and outgoing telephone or telex call;
- the number of terminal transmission equipments (weighted average) used to route an incoming and outgoing international telephone or telex call between the international centre and the national terminal centre;
- the crowflight distance (weighted average) of the national circuit used between the international centre and the national terminal centre in setting up an incoming and outgoing international telephone or telex call;
- the rate of interest on invested capital;
- the estimated average annual cost variation rate until the year in which the tariff rates are to be applied.

The procedure described below is then followed.

3.3.1.2.2 *Calculation of average costs per element*

A preliminary adjustment should be made of the numerical data supplied by each Administration for the reference year, taking into account the uniform interest rate allowed by the Tariff Group for remuneration of invested capital (this is necessary as there is usually a difference between the rate adopted by an Administration for its analytical accounting and the rate allowed by the Tariff Group). To calculate the proportion of the financial charges in the total costs, data can be extracted from the study of the costs (analytical cost comparison) of the international part of the service in question.

In the second stage of the calculation, the average costs adopted for the reference year are multiplied by a coefficient to take account of the variation in costs between the reference year and the period in which the tariff rates are to be applied, in order to obtain the average amounts to be applied during this period.

3.3.1.2.3 *Calculation of total average prices for the national extension*

From the statistical data supplied, it is possible to establish the weighted average number of elements (exchanges, terminal transmission equipments, length of national circuits) utilized in the given region for the *national extension* involved in international calls. These values are used to calculate the total average costs of the *national extension* per minute of incoming and outgoing international calls. The cost for each element is multiplied by the average number of elements utilized; the sum of these results is then calculated and the administrative costs added.

3.3.2 *Considerations relating to the calculation of investment costs and financial charges*

3.3.2.1 *General considerations*

Expenditure associated with acquiring and owning property sometimes referred to as "initial investment costs", constitutes what is usually termed investment costs. Initial investment costs generally refer to the one-time expenditure needed to acquire at a substantial cost property and plant which normally has a long life expectancy.

Investment costs are a major component in cost studies. They are entered into the accounts over the period during which the material will be used and determine one of the most important items making up the annual charges, i.e. the financial charges, or "amortization costs".

Economically, the concept of amortization lays stress on the renewal of the assets which is necessary if the initial value of the capital is to be preserved and the enterprise is not to suffer a loss of substance. Thus, the basis is generally the "replacement value of the fixed assets to the condition they were in on being put into service".

3.3.2.2 *Considerations relating to the study in question*

In a telecommunications service cost study, it is customary to:

- evaluate investments relating to equipment and installations according to the replacement value or purchasing price of this material at the time of the study;
- include the *overheads* of the Administrations (costs for administrative, research, information and training services, etc.) in the investment costs.

3.3.2.2.1 *Residual value of equipment*

Generally, at the end of its normal service period, telecommunication equipment is no longer usable and its residual value is consequently negligible.

3.3.2.2.2 *Weighting of certain basic numerical data*

International land networks frequently make use of transmission media of different kinds, i.e. symmetric pair cables, coaxial cables, radio-relay systems, for each of which separate data are required for the cost study. However, as the cost has to be determined for a combined network, weighting is necessary at some stage. To

arrive at a single cost price, weighting is carried out at the investment level as a function of the relative importance of the different types of cable used (expressed as a percentage in an item of the questionnaire).

3.3.2.2.3 *Basis for calculating the investment cost of telephone circuits on carrier systems*

Since there are differences in the maximum capacity of carrier systems (6 MHz, 12 MHz, 60 MHz), the usual basis used for calculating the investment cost of carrier system circuits is the supergroup (60 channels) actually installed rather than the maximum capacity of the route. To do this, the average cost per 100 km of the route is divided by the average number of supergroups installed. The investment cost per group (12 channels) and per telephone circuit installed is then calculated by dividing this amount by 5 and 60 respectively.

ANNEX A

Examples of questions asked in the questionnaire to collect
basic data for a cost study of telecommunication services

I Investments relating to transmission systems

I.1 *Telephone circuits on carrier systems*

I.1.1 *Supergroups* (60 channels) – (Take into account only the supergroups actually installed and not the maximum capacity).

What average construction and installation costs (in gold francs) does your Administration allow for components A and B (see Note 1 below) in the case of a supergroup installed in a:

	A	B
a) coaxial or symmetric pair land cable,	--- gold fr.	--- gold fr.
b) radio-relay link,	--- gold fr.	--- gold fr.
c) coaxial submarine cable (other types of submarine cable are excluded) (component A is included in component B)		--- gold fr.

I.1.2 *Groups* (12 channels)

What average construction and installation costs (in gold francs) does your Administration allow for component A in the case of a group installed in a:

	A
a) coaxial or symmetric pair land cable,	--- gold fr.
b) radio-relay link.	--- gold fr.

(With regard to component B, see Note 2 below.)

I.1.3 *Carrier telephone circuits*

What average construction and installation costs (in gold francs) does your Administration allow for component A of a carrier circuit: _ _ _ gold fr.

(With regard to component B, see Note 2 below.)

Note 1 – The cost of international telecommunication circuits should be expressed in the form:

$$A + B \times \frac{l}{100}$$

A represents all costs relating to terminal transmission equipment *for one end of the international circuit*;

B represents the costs per 100 km of real length, *l* of the circuit.

Note 2 – Component B should include the cost of intermediate repeaters, the cost of terminal repeaters to an amount not exceeding that of the intermediate repeaters and the cost of translation equipments used for the transfer from one telecommunication route to another. The cost of construction and installation per supergroup, group and circuit is a straightforward division from one step to the next.

II **Investments relating to switching centres**

II.1 What is the average construction and installation cost, for your Administration, of an international switching centre, including the operator's position, expressed as cost per circuit (in use or spare) for circuits operated:

- a) manually
- b) semi-automatic outgoing
- c) semi-automatic or automatic incoming
- d) automatic outgoing
- e) automatic transit

Gold francs
.....
.....
.....
.....
.....

III **Annual costs relating to switching centres**

III.1 *Amortization costs*

What weighted average useful life do you take to calculate one year's amortization instalment for:

- a) manual switching equipment (including the operator's position)
- b) semi-automatic switching equipment (including the operator's position)
- c) automatic switching equipment

Useful life (years)
.....
.....
.....

ANNEX B

TABLE B-1

Calculation of the weighted mean value of investments for the “transmission” part

Units and components considered			Investments for year	Coefficient of increase for spares	Total for year	Cost increases		Estimated investments for year	Typical network weighting coefficient	Weighted total for year	Real to crowflight length ratio	Overall results for year	
						Annual rate	Coefficient					Component A	Component B
Super group	A												
	B	coax/SP RR SM											
Group	A												
	B	coax/SP RR SM											
Telephone circuit	A												
	B	coax/SP RR SM											
Telegraph circuit	50 bauds	A B											
	100 bauds	A B											
	200 bauds	A B											

Component A Cost of transmission system independent of length (cost of terminal equipment)

Component B Cost of transmission system in proportion to its length (cost of cable and intermediate repeaters)

coax. Coaxial cable

RR Radio-relay

SP Symmetric pair cable

SM Submarine cable

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TABLE B-3
Total annual costs for the “transmission part”

Units and components considered		Overall investments for year	Useful life (years)	Amortization coefficient (i =)	Amortization		Maintenance + buildings		Total annual costs for year	
					A	B	A	B	A	B
Supergroup		A B								
Group		A B								
Telephone circuit		A B								
Telegraph circuit	50 bauds	A B								
	100 bauds	A B								
	200 bauds	A B								

i = interest on the remuneration of capital.

TABLE B-4
Telephone switching — Annual capital costs

Mode of operation	Investments					Useful life (years)	Amortization coefficient (i =)	Annual capital costs (year)	
	Circuit installed (year)	Coefficient of increase for spares	Circuit in service (year)	Cost increases					Circuit in service (year)
				Annual rate	Coefficient				
<i>Manual operation</i> Outgoing or incoming circuit Transit circuit									
<i>Semi-automatic operation</i> Outgoing circuit Incoming circuit									
<i>Automatic operation</i> Outgoing circuit Incoming circuit Transit circuit									

TABLE B-5

[illegible]

ANNEX C

Table giving amortization coefficients as function of amortization period and estimated interest rate

(Annual charge to be paid at the end of each year in order to amortize a capital of 1 monetary unit during t years)

t	$\frac{r}{1 - (1 + r)^{-t}} = \frac{r(1 + r)^t}{(1 + r)^t - 1}$											
	Interest											
	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	20%
1	1.0500	1.0600	1.0700	1.0800	1.0900	1.1000	1.1100	1.1200	1.1300	1.1400	1.1500	1.2000
2	0.5378	0.5454	0.5531	0.5608	0.5685	0.5762	0.5839	0.5917	0.5995	0.6073	0.6151	0.6545
3	0.3672	0.3741	0.3811	0.3880	0.3951	0.4021	0.4092	0.4163	0.4235	0.4307	0.4380	0.4747
4	0.2820	0.2886	0.2952	0.3019	0.3087	0.3155	0.3223	0.3292	0.3362	0.3432	0.3503	0.3863
5	0.2310	0.2374	0.2439	0.2505	0.2571	0.2638	0.2706	0.2774	0.2843	0.2913	0.2983	0.3344
6	0.1970	0.2034	0.2098	0.2163	0.2229	0.2296	0.2364	0.2432	0.2502	0.2572	0.2642	0.3007
7	0.1728	0.1791	0.1856	0.1921	0.1987	0.2054	0.2122	0.2191	0.2261	0.2332	0.2404	0.2774
8	0.1547	0.1610	0.1675	0.1740	0.1807	0.1874	0.1943	0.2013	0.2084	0.2156	0.2229	0.2606
9	0.1407	0.1470	0.1535	0.1601	0.1668	0.1736	0.1806	0.1877	0.1949	0.2022	0.2096	0.2481
10	0.1295	0.1359	0.1424	0.1490	0.1558	0.1627	0.1698	0.1770	0.1843	0.1917	0.1993	0.2385
11	0.1204	0.1268	0.1334	0.1401	0.1469	0.1540	0.1611	0.1684	0.1758	0.1834	0.1911	0.2311
12	0.1128	0.1193	0.1259	0.1327	0.1397	0.1468	0.1540	0.1614	0.1690	0.1767	0.1845	0.2253
13	0.1065	0.1130	0.1197	0.1265	0.1336	0.1408	0.1482	0.1557	0.1634	0.1712	0.1791	0.2206
14	0.1010	0.1076	0.1143	0.1213	0.1284	0.1357	0.1432	0.1509	0.1587	0.1666	0.1747	0.2169
15	0.0963	0.1030	0.1098	0.1168	0.1241	0.1315	0.1391	0.1468	0.1547	0.1628	0.1710	0.2139
16	0.0923	0.0990	0.1059	0.1130	0.1203	0.1278	0.1355	0.1434	0.1514	0.1596	0.1679	0.2114
17	0.0887	0.0954	0.1024	0.1096	0.1170	0.1247	0.1325	0.1405	0.1486	0.1569	0.1654	0.2094
18	0.0855	0.0924	0.0994	0.1067	0.1142	0.1219	0.1298	0.1379	0.1462	0.1546	0.1632	0.2078
19	0.0827	0.0896	0.0968	0.1041	0.1117	0.1195	0.1276	0.1358	0.1441	0.1527	0.1613	0.2065
20	0.0802	0.0872	0.0944	0.1019	0.1095	0.1175	0.1256	0.1339	0.1424	0.1510	0.1598	0.2053
21	0.0780	0.0850	0.0923	0.0998	0.1076	0.1156	0.1238	0.1322	0.1408	0.1495	0.1584	0.2044
22	0.0760	0.0830	0.0904	0.0980	0.1060	0.1140	0.1223	0.1308	0.1395	0.1483	0.1573	0.2037
23	0.0741	0.0813	0.0887	0.0964	0.1044	0.1126	0.1210	0.1296	0.1383	0.1472	0.1563	0.2031
24	0.0725	0.0797	0.0872	0.0950	0.1030	0.1113	0.1198	0.1285	0.1373	0.1463	0.1554	0.2025
25	0.0710	0.0782	0.0858	0.0937	0.1018	0.1102	0.1187	0.1275	0.1364	0.1455	0.1547	0.2021
30	0.0651	0.0726	0.0806	0.0888	0.0973	0.1061	0.1150	0.1241	0.1334	0.1428	0.1523	0.2008
35	0.0611	0.0690	0.0772	0.0858	0.0946	0.1037	0.1129	0.1223	0.1318	0.1414	0.1511	0.2003
40	0.0583	0.0665	0.0750	0.0839	0.0930	0.1023	0.1117	0.1213	0.1310	0.1407	0.1506	0.2001
45	0.0563	0.0647	0.0735	0.0826	0.0919	0.1014	0.1110	0.1207	0.1305	0.1404	0.1503	0.2001
50	0.0548	0.0634	0.0725	0.0817	0.0912	0.1009	0.1106	0.1204	0.1303	0.1402	0.1501	0.2000

APPENDIX I
(to Supplement No. 1)

**Conversion into special drawing rights (SDRs) of the tariff
standards in the Recommendations of the TEUREM Group**

Methodology

In Table I-1 the amounts in column 2 (gold francs) have been divided by 3.061 to produce the amounts in column 3 (SDRs). The amounts (SDRs) in column 4 have been determined in accordance with one of the three following cases.

Case a

Where the amount in 3 exceeded 100, no figures after the decimal point are shown. However if the first figure after the decimal point was equal to/greater than 5, the amount before the decimal point was rounded *up* to the nearest whole number.

e.g. 2188.8271 became 2189
 3920.2874 became 3920

Case b

Where the amount in 3 was less than 100 but exceeded 1.0, the amount has been confined to 3 figures. In cases where the fourth figure was equal to/greater than 5, the preceding figures were rounded *up*.

e.g. 49.003593 became 49.0
 3.7569421 became 3.76

Case c

Where the amount in 3 was less than 1.0, the amount after the decimal point has been confined to 3 figures. In cases where the fourth figure was equal to/greater than 5, the preceding figures were rounded *up*.

e.g. 0.0065338 became 0.007
 0.0588043 became 0.059
 0.5880431 became 0.588

TABLE I-1

Table of values, in gold francs and special drawing rights,
for Recommendations D.300 R to D.310 R

Unit element considered	Values fixed in gold francs (G.Fr.)	Values fixed in (SDR)	Values fixed in SDR (amounts rounded)
1	2	3	4
<i>Recommendation D.300 R</i>			
Line part			
telephone circuit	1 200	392.02874	392
group	12 000	3920.2874	3 920
supergroup	50 000	16334.531	16 335
mastergroup	200 000	65338.124	65 338
supermastergroup	550 000	179679.84	179 680
Terminal equipment			
telephone circuit	1 300	424.69781	425
group	3 200	1045.4099	1 045
supergroup	6 700	2188.8271	2 189
mastergroup	16 000	5227.0499	5 227
supermastergroup	30 000	9800.7187	9 801
Earth station	30 000	9800.7187	9 801
International network			
manual operation	0.04	0.0130676	0.013
automatic operation	0.02	0.0065338	0.007
Exchanges			
manual	2.00	0.6533812	0.653
automatic	0.18	0.0588043	0.059
semi-automatic	1.80	0.5880431	0.588
of destination	0.11	0.0359359	0.036
of automatic transit	0.16	0.0522704	0.052
National extension			
outgoing	0.40	0.1306162	0.131
incoming	0.35	0.1143417	0.114
Earth station	0.46	0.1502776	0.150
Space segment	0.23	0.0751388	0.075
<i>Recommendation D.301 R</i>			
Exchanges			
automatic	0.09	0.0294021	0.029
semi-automatic	2.40	0.7840574	0.784
manual	2.50	0.8167265	0.817
automatic transit	0.12	0.0392028	0.039
National extension			
outgoing	0.27	0.0882064	0.088
incoming	0.25	0.0816726	0.082
Telegraph channel			
50 bauds	45	14.701078	14.7
100 bauds	90	29.402156	29.4
200 bauds	180	58.804312	58.8
300 bauds	210	68.605031	68.6

TABLE I-1 (cont.)

Unit element considered	Values fixed in gold francs (G.Fr.)	Values fixed in (SDR)	Values fixed in SDR (amounts rounded)
1	2	3	4
<i>Recommendation D.301 R (cont.)</i>			
Carrier circuit	1 200	392.02874	392.0
Terminal equipment			
50 bauds	660	215.61581	216
100 bauds	900	294.02156	294
200 bauds	1 350	441.03234	441
300 bauds	2 200	718.71937	719
Earth station			
50 bauds	1 100	359.35968	359
100 bauds	2 100	686.05031	686
200 bauds	4 000	1306.7624	1 307
300 bauds	5 000	1633.4531	1 633
Carrier circuit	30 000	9800.7187	9 801
Space segment per minute	0.038	0.0124142	0.012
<i>Recommendation D.302 R</i>			
Terminal tariff per word	0.80	0.2613524	0.261
Manual transit tariff	0.50	0.1633453	0.163
Gentex	0.012	0.0039202	0.004
Tariff per telegram	11.50	3.7569421	3.76
Tariff per word	0.40	0.1306762	0.131
<i>Recommendations D.303 R and D.310 R</i>			
Sound-programme transmission			
preparation and operation	90.0	29.402156	29.4
terminal equipment (10 kHz)	2.0	0.6533812	0.653
(stereo)	4.0	1.3067624	1.31
transit equipment (10 kHz)	3.2	1.0454099	1.05
(stereo)	6.4	2.0908199	2.09
international circuit (10 kHz)	0.4	0.1306762	0.131
(stereo)	1.0	0.3266906	0.327
surcharge	30.0	9.8007187	9.8
Television-programme transmission	150.0	49.003593	49.0
terminal equipment	10.0	3.2669062	3.27
transit	17.0	5.5537406	5.55
international circuit	15.0	4.9003593	4.90
Television circuit			
terminal equipment	125 000	40836.327	40 836
per 100 km	200 000	65338.124	65 338

**METHOD FOR CARRYING OUT A COST PRICE STUDY
BY REGIONAL TARIFF GROUPS¹⁾**

1 Introduction

Tariffs for telecommunication services are normally established on the basis of cost incurred by the Administrations for providing the services, and of certain other factors which can be summarized as the value of service rendered or the market price. These factors are explained in Recommendation D.5.

For international services a clear distinction is made — especially since 1968 — between the accounting rate and the collection charge. Definitions and explanations of these terms and of international accounting procedures are given in Recommendation D.150. Accounting rates are regarded as a matter to be settled between Administrations, each Administration being reimbursed according to the cost of the equipment it makes available. On the other hand, the determination of collection charges is, within limits, a national matter. While accounting rates are, or should be, based essentially on costs, collection charges depend on costs as well as on the value of service rendered and other factors.

The main tasks which the regional Tariff Groups have to perform are undoubtedly an analysis of the costs of the different telecommunication services provided, and the determination of accounting rates proposed for application by the Administrations of a region. For this purpose, each Tariff Group had to develop a suitable working method to be followed in its region. A description of such methods, especially of an analytical method, is given in Supplement No. 1 to the Series D Recommendations.

2 Methods used for establishing tariffs

Two basic methods can be used for international tariff studies, namely:

1) *The synthetic method*

This is a simple, purely pragmatic method which consists in comparing existing tariffs applied within a region and agreeing on generally applicable standards for international accounting. This method leads to satisfactory results if the tariffs applied by the different Administrations reflect the actual costs of providing the services;

2) *The analytical method*

As the term implies, it is a procedure for analysing in a more or less detailed manner the cost involved in making specific equipment available to other Administrations or providing a traffic unit in a given telecommunication service. Analysis of the cost situation, the operating conditions and the available statistical data is the only way to obtain realistic standards for determining the accounting rates and, finally, the collection charges.

The analytical method has been used particularly by the regional Tariff Group for Europe and the Mediterranean Basin, the TEUREM Group. Since 1969, this Group has consistently pursued its studies and refined its working method.

3 Implementation of an analytical cost price study

3.1 *Difficulties to be overcome and problems to be solved before undertaking a cost price study*

The Administrations belonging to a Tariff Group have to be convinced that it is in their own interest to undertake cost price studies and apply recommended standard rates, as such standards lead to harmonized tariff structures for the different telecommunication services and guarantee the most equitable remuneration of the various facilities made available by the Administrations. Each Administration should know where the costs arise, in what direction these costs are developing and also what the situation is in other, comparable countries.

¹⁾ Text of a lecture delivered at a seminar held in Tokyo in May 1984.

In order to conduct an international cost price study successfully, Administrations have to be assured that all data provided by them will be treated confidentially and that all problems can be discussed openly. Genuine collaboration by all parties is required in working towards the common goal.

Therefore it is essential that:

- only representatives of Administrations and recognized private operating agencies take part in the meetings of the Tariff Group;
- the meetings be conducted in an absolutely neutral and objective manner;
- the data provided and the detailed results be made available only to the parties directly concerned.

3.2 *Methodology to be adopted for conducting a cost price study*

To accomplish a cost price study, at least two meetings of the Tariff Group are necessary, and the delegates will have to carry out considerable preparation and investigation work within their Administrations.

3.3 *Preparation of questionnaires*

It is of great importance that the Group asks precisely all the questions to which it needs answers from the Administrations, giving the necessary details and explanations. This task, considered as the *first step* of the study, is normally completed during the first meeting of the Tariff Group within a study period. An example of such a questionnaire is shown in Annex A to Supplement No. 1 to the Series D Recommendations. It may also be helpful for the Administrations to obtain the numerical data collected and agreed to in a former study.

A detailed questionnaire is normally prepared for each service, namely:

- the telephone service;
- the telex service;
- the public telegram service;
- sound-programme and television transmissions;
- circuits routed via satellites, etc.

For services with similar features and conditions, such as telephone and telex, a single questionnaire may be established.

Each questionnaire should be subdivided, according to needs, into several parts and chapters dealing with:

- general information;
- cost information;
- statistical data.

Practice has shown that it is convenient to consider the telephone as the basic service, from which a great number of data can be derived and used for the studies of other services, such as telex, sound-programme transmissions, etc. *The different questionnaires should ask only for data which the Tariff Group is not able to derive itself from the basic study.*

3.4 *Replying to questionnaires*

The *second step* to be undertaken in the study is the preparation of replies by the Administrations of the region. It is a delicate and difficult task, as the data are in most cases not immediately available in the required form or presentation. Each service has to be analysed, and a great deal of research, calculations and estimates are necessary. *An analytical cost accounting system can provide only general data* for a given service, for instance the annual charges per centre or service, but it cannot provide details for the facilities made available. Specialists from the different services will have to calculate these detailed data using the general accounting system, statistics, and their own documents. In order to assure consistency between the different parts of a study, and from one study to the next, an expert representing his Administration in the Tariff Group must act as coordinator at home and explain to his colleagues how the questions have to be interpreted. *Preparing the answers to the questionnaire means team-work by generalists and specialists*, since all-rounders are rare in today's complex telecommunications environment.

As a rule, the Administrations need several months to prepare their replies.

3.5 *Analysis of the replies and completion of the study*

This is the *third step* which the Tariff Group has to undertake, usually during a meeting lasting several days. Its success depends mainly on the *preparation work* done by the CCITT Secretariat and the Group Chairman.

The CCITT Secretariat analyses the replies provided by the Administrations and presents the numerical data anonymously in the form of tables. Examples of such tables are given in Annex B to Supplement No. 1 to the Series D Recommendations.

It is useful for the Chairman to draw up beforehand a complete calculation model in order to determine the path to follow in order to lead the study to the best possible result. The Chairman should know in advance the likely outcome of the study. He should be able to provide the delegates with background information on each item. During the meeting, the Chairman should serve the Group as moderator, adviser and decider. It is important that everybody should be able to speak openly and that an atmosphere of confidence should reign throughout the meeting.

An international cost price study is not just a matter of calculation. It is much more a joint effort which should lead to a coherent, harmonious and durable tariff structure for the full range of the telecommunication services offered, and should reflect the actual cost and operating situation of a region. Tariffs should evolve in small steps according to the development of technology, operating procedures and economic situation. This goal can best be achieved if a study method, once adopted, is maintained and gradually improved from one study period to another.

The agenda of the meeting is drawn up with a view to guiding the study to its final goal in the most efficient possible way: draft Recommendations for the determination of accounting rate shares and collection charges. It starts with the study for the basic service in the following order:

- 1) A standard reply is calculated and agreed for each item of the questionnaire, based on the individual replies given by the Administrations.
- 2) From the data thus obtained, a whole series of detailed calculations are made in order to derive the average cost price of each equipment made available (annual cost and unit cost) for the year to which the data refer (reference year). These figures are then updated to the year when the standard rates shall become effective.
- 3) Generally acceptable standard rate shares are then determined which will apply during the next study period.
- 4) Recommendations containing these standard rates and the rules for applying them are drafted.

4 **Considerations relating to an analytical cost price study**

4.1 *Analysis to be made*

4.1.1 *Analysis of basic elements for the provision of a service*

Since an international telecommunication service provided to users involves both the international network and the national networks of the terminal countries, we have to distinguish between the three following basic elements:

- the line (transmission) part of the international network, which includes the various transmission systems used and is normally a function of the distance;
- the international exchanges, i.e. the switching parts of the international circuit, plus the terminal transmission equipments located in the terminal countries and, where appropriate, in the transit countries;
- the national extensions, which denote the part of the national network of each terminal country involved in completing the connection.

4.1.2 *Analysis of the cost structure*

When calculating the total cost of a given service, we have to analyse for each element the nature of the costs and their components. The following distinctions are made:

- investment costs and annual costs;
- financial charges, maintenance costs, building costs and operating costs;
- total annual charges and traffic-unit costs;
- fixed costs and variable costs;
- directly allocated costs and overhead costs.

4.1.2.1 *Investment costs*

The investment costs relating to the reference year are first calculated per given equipment (circuit) installed, and next per equipment in service. They are then updated to the year when the tariffs shall become effective. To obtain these results, coefficients are applied which take account of:

- standbys (installed apparatus/apparatus in service);
- price increases (annual rates of change);
- composition of the standard network (relative importance of coaxial cables, radio-relay links, etc.);
- the ratio: “actual length/crowflight distance” of transmission facilities.

4.1.2.2 *Annual costs*

The basis for completing the cost price study is the total annual charges per piece of equipment in service. These charges are compounded by adding the amounts obtained for the “transmission” part and the “switching and operations” part under the headings:

- financial charges;
- maintenance costs;
- building costs;
- operating costs.

4.1.2.2.1 *Financial charges*

The average investment costs are used to calculate the annual financial charges on the basis of the weighted average life assumed for the equipment and the interest rate assumed for return on invested capital. For this purpose the “Table giving amortization coefficients as a function of amortization period and interest rate” is used.

4.1.2.2.2 *Maintenance costs*

The average annual maintenance costs are calculated per given equipment. They correspond in many cases to an agreed percentage applied to the investment costs.

4.1.2.2.3 *Building costs*

These costs are usually calculated in the form of an annual rental for the space occupied by an equipment.

4.1.2.2.4 *Operating costs*

These costs refer only to costs of staff responsible for operating a service (setting up of calls, etc.)

4.1.2.3 *Traffic unit costs*

To calculate the traffic unit costs (minute of telephone or telex call, etc.) the total annual charges for an international circuit are divided by the average number of traffic units for this circuit per year. The average number of traffic units is extracted from the statistical data provided by the Administrations in their replies to the questionnaire.

4.2 *Methods used for calculating average costs*

According to the nature of the service provided, it is recommended that one of the following methods be used to calculate the average costs for a region.

4.2.1 *Analytical cost comparison*

Where the individual equipments made available for providing a service and the structure of the network are similar in the different countries, it is customary to compare the detailed numerical data provided by the Administrations and to calculate the costs for each element, step by step, according to the classical analytical method. This method is generally used for determining the average cost of the *international part* of a service.

4.2.2 Direct comparison of national costs

Where the equipment made available and the structure of the network differ considerably from one country to another, a simplified method is normally applied. This method is used especially for determining the average cost of the *national extension*.

In this case, the costs calculated by the Administrations for their respective countries are compared directly per traffic unit (minute) for one of the following elements or services:

- local or trunk exchange;
- a terminal transmission equipment;
- 100 km (crowflight) of national circuit;
- billing of subscribers, international accounting, management of international services (administrative costs).

To calculate the average total cost of the national extension per traffic unit, the Administrations should also provide statistical and financial data enabling the Tariff Group to make a genuine comparison.

It is pointed out that this method is not identical with the “Synthetic method”, as *cost elements* and not *existing tariffs* are compared.

5 Examples of cost price studies

5.1 Cost price study for the international telephone service

5.1.1 Determination of mean values and rules for the calculation

Preliminary remarks

- All amounts are expressed in gold francs.
- The data have been chosen as examples and relate to the year 1980, called the *reference year*.
- The *target year* adopted is 1986, i.e. the standard rates determined would correspond to the cost situation at the beginning of 1986.
- The rate of return on capital investment provides not only for the remuneration of capital but also for a reasonable financial return.
- The annual rate of change represents the expected change in costs due to inflationary cost increases on the one hand, and cost savings due to technological developments on the other hand.

5.1.1.1 Financial data

<i>Rate of return</i> on capital investment	15%
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Annual rate of change:

- for capital investment +4%
- for staff costs +5%

5.1.1.2 Costs for the line (transmission) part (simplified example)

5.1.1.2.1 Investment

a) *Supergroups (installed) in a:*

— coaxial land cable: (terminal equipment)	A	20 000
(100 km real length)	B	200 000
— radio-relay link	A	(same as for a coaxial cable)
	B	150 000
— coaxial submarine cable:	B	300 000

b) *Groups:*

A	10 000
B	(1/5 of supergroup)

c) *Carrier telephone circuits:*

A	5 000
B	(1/60 of supergroup)

5.1.1.2.2 *Annual costs*

a) *amortization costs*

average useful lives:

— element A:	12 years
— element B: coaxial cables:	25 years
radio-relay links:	15 years

b) *maintenance costs*

percentage of investment costs:

— element A:	2%
— element B: coaxial cables:	1%
radio-relay links:	5%

c) *annual charges for buildings (for element A only)*

supergroup	80
group	30
carrier telephone circuit	11

5.1.1.3 *Costs for the switching part (simplified example)*

5.1.1.3.1 *Investment*

costs per carrier telephone circuit

— automatic outgoing:	22 000
— automatic or semi-automatic incoming:	20 000

5.1.1.3.2 *Annual costs*

a) *amortization costs*

average useful life: 15 years

b) *maintenance costs*

percentage of investment costs: 5%

c) *annual costs for buildings per circuit*

— automatic outgoing:	150
— automatic or semi-automatic incoming:	100

d) *annual operating costs per circuit in use*

— automatic outgoing	3 000
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5.1.1.3.3 *Statistical information*

Number of chargeable minutes per circuit in use per year:

— semi-automatic and automatic:	65 000 minutes
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5.1.1.4 Costs for the "national extension" (simplified example)

5.1.1.4.1 Statistical information

- number of national exchanges used for international calls (weighted average): 3
- number of terminal transmission equipments used (weighted average of A elements): 2
- crowflight length of national circuit used (weighted average): 150 km

5.1.1.4.2 Financial information

- cost for use of a national exchange per minute: 0.06
- cost for use of a terminal transmission equipment (element A) per minute: 0.02
- cost for use of 100 km of national circuit per minute: 0.05
- administrative cost per minute: outgoing: 0.10
incoming: 0.05

5.1.2 Example for calculating costs in reply to the questionnaire

5.1.2.1 Average investment costs per 100 km of route of a supergroup (60 channels) actually installed in a coaxial cable

Basis:

Coaxial cable containing 4 systems at 12 MHz + 1 spare system.

Maximum capacity: 4×2700 circuits = 10 800 circuits or 180 supergroups

Actually installed (2/3 of capacity) = 7200 circuits or 120 supergroups

Translation equipments: 0.5 equipment per 100 km (supermastergroup + supergroup = two A elements + 1 filter)

The amounts include 30% for overheads.

Calculation:

- *cost of the cable* per 100 km of real length:

	16.4 million gold francs
intermediate repeaters	<u>4.12 million gold francs</u>
	20.52 million gold francs
 - *cost per supergroup actually installed*
 - *cable* 20.52 million gold francs: 120 supergroup

	171 000 gold francs
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 - *translation equipments:*

supermastergroup	
two A elements at 78 000	= 156 000
1 filter	= <u>33 000</u>
	189 000 \times 0.5 = 94 500
	per supergroup (1/15)
	6 300 gold francs
supergroup	
two A elements at 20 800	= 41 600
1 filter	= <u>8 000</u>
	49 600 \times 0.5 =
	<u>24 800 gold francs</u>
- Total cost for a supergroup* 202 100 gold francs

5.1.2.2 Average investment cost for a terminal equipment (element A) of a carrier telephone circuit actually installed

The amounts include 30% for overheads

Calculation:

- element A for a supergroup: 20 800 gold francs
- element A for a group:
1/5 of supergroup = 4160 + group 5940 = 10 100 gold francs

Element A for a carrier telephone circuit

1/12 of group = 842 + carrier circuit 3958 = 4 800 gold francs.

5.1.2.3 Annual charges for buildings per terminal equipment (element A) of a carrier telephone circuit actually installed

Basis:

Annual rental per m² = 260 gold francs (analytical cost accounting)

Calculation:

- surface occupied per rack (about 1 m²) × coefficient “occupied surface/accessory surface” (= 4) = 4 m²
- annual rental per rack = 4 × 260 gold francs = 1 040 gold francs
- surface per group: 0.117 m² = 30 gold francs

Surface per carrier telephone circuit

(average per rack, new and old equipment, 121 circuits)

0.033 m² + 1/12 of group (= 0.010) = 0.043 m² × 260 gold francs = 11 gold francs

5.1.3 Calculation of mean costs

Example for calculating the transmission costs per carrier telephone circuit

5.1.3.1 Investments

	Element A	Element B
investment 1980:	5000	3333 (1/60 of 200 000) ²⁾
coefficient of increase for spares:	1.35	1.50
total costs 1980:	6750	5000
cost increase: annual:	2%	4%
coefficient 5 years:	1.104	1.216
investment 1985:	7452	6080
Weighting coefficient of typical network	—	coax. cables 0.50
	—	radio-relay 0.40
	—	submarine cable 0.10
Investment 1985 (typical network):	7452	5000 (approx.)
real length/crowflight distance ratio:	—	1.3
Overall results 1985:	7452	6500

²⁾ Investment for a supergroup installed in a coaxial land cable.

5.1.3.2 Annual costs

	<i>Element A</i>	<i>Element B</i>
<i>Capital costs</i>		
investments 1985:	7452	6500
useful life (years)	12	20
amortization coefficient ($i = 15\%$)	0.1845	0.1598
annual amortization	1375	1039
<i>Maintenance costs</i>		
percentage of investment cost 1980	2% (of 5000)	2.5% (of 4000 approx.)
amount per circuit installed 1980:	100	100
per circuit in use 1985:	250 (approx.)	250 (approx.)
<i>Charges for buildings</i>		
per circuit installed in 1980:	11	—
per circuit in use in 1985:	ca. 25	—
<i>Total annual costs per circuit in use 1985</i>		
capital costs	1375	1039
maintenance	250	250
buildings	<u>25</u>	<u>—</u>
Total:	1650	1289

5.1.4 Cost per minute of an international telephone call (automatic service)

5.1.4.1 *Transmission part*

Element B

Cost per 100 km of circuit per minute:
 1289 gold francs : 65 000 minutes = 1.98 gold centimes

Element A

Cost per minute:
 $1650 \text{ gold francs} : 65\,000 \text{ minutes} = 2.54 \text{ gold centimes}$

5.1.4.2 Switching part

Switching equipment

Example: per year 7000 gold francs : 65 000 minutes = 10.77 gold centimes

Example: per year 6000 gold francs : 65 000 minutes = 9.23 gold centimes

Operation (outgoing only)

Example: per year 4000 gold francs : 65 000 minutes = 6.15 gold centimes

5.1.4.3 National extension

Assumption: annual rate of change = 0, i.e. cost 1980 = cost 1985.

- national exchanges (3×0.06 gold francs)	18.0 gold centimes
- terminal transmission equipments (Element A) (2×0.02 gold francs)	4.0 gold centimes
- national circuits: (average 150 km) (1.5×0.05 gold francs)	7.5 gold centimes
- administrative cost: outgoing:	10.0 gold centimes
incoming:	5.0 gold centimes

<i>Total cost per minute</i>	outgoing:	39.5 gold centimes
	incoming:	34.5 gold centimes

5.1.4.4 Total cost per minute of an international telephone call

	<i>outgoing</i>	<i>incoming</i>
<i>Transmission part (Element B)</i>		
example 500 km (5×1.98 gold centimes) =	9.9 gold centimes	9.9 gold centimes
<i>Switching part (1 exchange)</i>		
element A (transmission)	2.54 gold centimes	2.54 gold centimes
switching equipment	10.77 gold centimes	9.23 gold centimes
operation	6.15 gold centimes	—
<i>National extension</i>	<u>39.5</u> gold centimes	<u>34.5</u> gold centimes
<i>Total cost per minute:</i>	68.86 gold centimes	56.17 gold centimes

5.2 Cost price study of telephone-type circuits set up via satellite (INTELSAT)

5.2.1 Preliminary remarks

An earth station is defined as the total equipment installed on a site and consisting of one or several antennas.

For the calculation of mean costs, it is impossible to compare the detailed cost components provided by the Administrations. Two methods can be used:

- 1) calculate, for each Administration which has supplied data, the annual cost price of a telephone circuit by dividing the overall annual cost of the earth station by the number of telephone circuits set up via the station, and then take the average of the separate cost prices calculated in this way;
- 2) add up the total annual costs of the telephone service indicated by each Administration and divide the total figure thus obtained by the total number of circuits set up over the various earth stations for which replies have been submitted.

The data concerning the extension circuit between the earth station and the gateway (Element B + 1 Element A at the gateway) are taken from the study for the international telephone service.

5.2.2 Investments for telephone-type circuits

Example for an earth station with 2 antennas

	<i>Investments 1980 gold francs</i>	<i>Useful life years</i>
<i>Construction and installation costs of an earth station:</i>		
— land	4 000 000	—
— building	39 000 000	40
— power supply system	16 000 000	15
— auxiliary equipment	1 200 000	20
— antennas:		
mechanical part	23 000 000	10
electronic part	40 500 000	10
— terminal equipment (2 A elements at the station)	<u>9 500 000</u>	15
	133 200 000	

Overheads of 46% are included in these costs.

5.2.3 Annual costs (financial charges)

	<i>Costs 1980</i> gold francs
— land (interest only)	232 400
— building (amortization)	2 383 600
(maintenance)	235 200
— power supply system	1 680 000
— auxiliary equipments (air conditioning, etc.)	103 200
— antennas:	
mechanical part	3 110 000
electronic part	5 388 000
— terminal equipment	930 000
<i>Total annual financial charges:</i>	<u>14 062 400</u>

5.2.4 Operating costs

	<i>Costs 1980</i> gold francs
— operational staff (including 50% for overheads)	2 535 200
— power	345 100
— consumable goods	511 300
— maintenance (staff costs are included in operational staff costs; maintenance under this item refers therefore to third party costs including 50% of overhead costs)	625 400
— other costs (motor cars and material)	7 100
<i>Total operating costs</i>	<u>4 024 100</u>

5.2.5 Total annual costs

— financial charges	14 062 400
— operating costs	<u>4 024 100</u>
<i>Total annual costs:</i>	<u>18 086 500</u>

5.2.6 Traffic elements

- average number of telephone-type circuits during 1980: 350 circuits

5.2.7 Statistical data

- 1980: number of antennas = 2
 equipped for 407 circuits (in use on the average: 350 circuits)
- 1985: Number of antennas = 2
 equipped for 1200 circuits (in use on the average: 1100 circuits)
- length (km) of the extension circuits to the gateway: 300 km

5.2.8 Annual costs per telephone-type circuit

— 1980 (reference year)	
— total annual costs of the earth station:	18 086 500 gold francs
— costs per circuit (1/350)	51 675 gold francs
+ extension circuit to gateway (300 km at 1289)	3 867 gold francs
+ 1 Element A at gateway	<u>1 650 gold francs</u>
<i>Total costs per circuit:</i>	<u>57 192 gold francs</u>

– 1985 (*target year*)

– total annual costs of the earth station:

1980:	18 086 500 gold francs
-------	------------------------

1985: cost increase in 5 years at 5% p.a. = coeff. 1.276	23 000 000 gold francs
---	------------------------

+ additional equipments:	<u>16 000 000 gold francs</u>
--------------------------	-------------------------------

<i>Total</i>	39 000 000 gold francs
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Number of circuits in use: 1100

Costs per circuit (1/1100)	35 454 gold francs
----------------------------	--------------------

+ extension circuit to gateway (300 km at 1289)	3 867 gold francs
---	-------------------

+ 1 Element A at gateway	<u>1 650 gold francs</u>
--------------------------	--------------------------

<i>Total costs per circuit:</i>	40 971 gold francs
---------------------------------	--------------------

6 Conclusions

The description of the analytical cost study method contained in §§ 1 to 4, together with the examples of cost calculations in § 5, may help regional Tariff Groups to undertake their own studies for the full range of telecommunication services provided. Although the data used in the examples are hypothetical, they reflect an actual situation existing in the study period 1981 to 1984.

**HANDBOOK ON THE METHODOLOGY FOR DETERMINING
COSTS AND ESTABLISHING NATIONAL TARIFFS**

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CHAPTER 1 – INTRODUCTION

1.1 *General*

The purpose of this handbook is to reply to Question 29/III (Determination of costs and establishment of tariffs) which the VIIIth CCITT Plenary Assembly entrusted to Study Group III. For the sake of efficiency, it was decided to confine the initial phase of the study to the telephone and telex services.

1.2 *Purpose of determining tariffs*

1.2.1 *Cost tariffs*

As for any other service or product, the establishment of a tariff, i.e., a sales price, for telecommunication services hinges first and foremost on a knowledge of the costs involved, i.e., the cost price. As is often the case in production processes which involve a large number of products, the allocation of costs to telecommunication service products inevitably raises problems since the different services (local, long-distance and international telephone and telex traffic) at one time or another use the same infrastructures.

1.2.2 *Public tariffs*

Once the cost components are known, tariffs can be established on the basis of a number of factors of an economic, political or even social nature. Any decision concerning tariffs must seek to secure the highest possible optimisation of the infrastructure.

1.3 *Objectives to be achieved*

It is for the management to decide in advance on the objectives to be achieved when establishing tariffs. Except in special circumstances, one of the main objectives must be to ensure the overall financial equilibrium of the undertaking over a sufficiently long period and to generate a reasonable surplus for financing subsequent development.

1.4 *Development of a costing model*

The complexity of the data involved makes it necessary to develop a model that can be automated.

CHAPTER 2 – DETERMINATION OF COSTS – PROPOSED MODEL

2.1 *Introduction*

2.1.1 *The model adopted*

Whatever model for costing services is adopted, it will bring with it the problem of defining cost and profit centres as a difficulty at both theoretical formulation and application levels.

On the other hand, considering the great volume of information that would have to be used to obtain the desired results, it would be wise to adopt a model that could be entirely automated.

This would be a costing system for non-accounting items that will require no more than the basic information available in the companies to be put into operation.

This means that it will be possible to put the model to immediate use in the companies, seeing that no innovations for obtaining information will be required. The information already available as input for the model will just have to be organized in order to obtain the required reports.

2.1.2 *What is being proposed*

The proposal is to achieve a model for studying the cost of the telephone service and the telex service at national level.

On the other hand, knowledge of the costs of each service will help to establish a more consistent tariff policy, as well as to provide companies with alternatives for investments.

The management of each company will, of course, decide what other reports, in addition to those mentioned above, they consider necessary for making the best analysis of the performance of each service.

2.2 *Description of the model*

2.2.1 *The production process*

Knowledge of the production process and the quantity of input used at each stage of this process is vital if one is to determine the cost of a particular product/service.

Let us consider, for example, the case of the provision of local and long-distance automatic subscriber telephony services.

The diagram below (Figure 1) shows the evolution of calls through the installation and equipment involved. We can see that at some points the two services use the same installations and equipment; this occurs with the subscriber terminal equipment, the local network and local switching.

Thus, in the process of a local call, we can identify the “activities” of the subscriber terminal equipment, the local network and the local switching; and in a long-distance call, in addition to these activities, long-distance transmission and switching. Considering the smallest unit of activity by which costs are accumulated as cost centres, it would seem reasonable to structure cost centres at the level of the modules that constitute the telecommunications network. In order to reach the total cost per service, we would then need to establish cost centres for the company’s other activities which are not directly linked to the production processes of the services (indirect expenses) such as: Commercialization of Services, General Administration, Instruction, Training, etc.

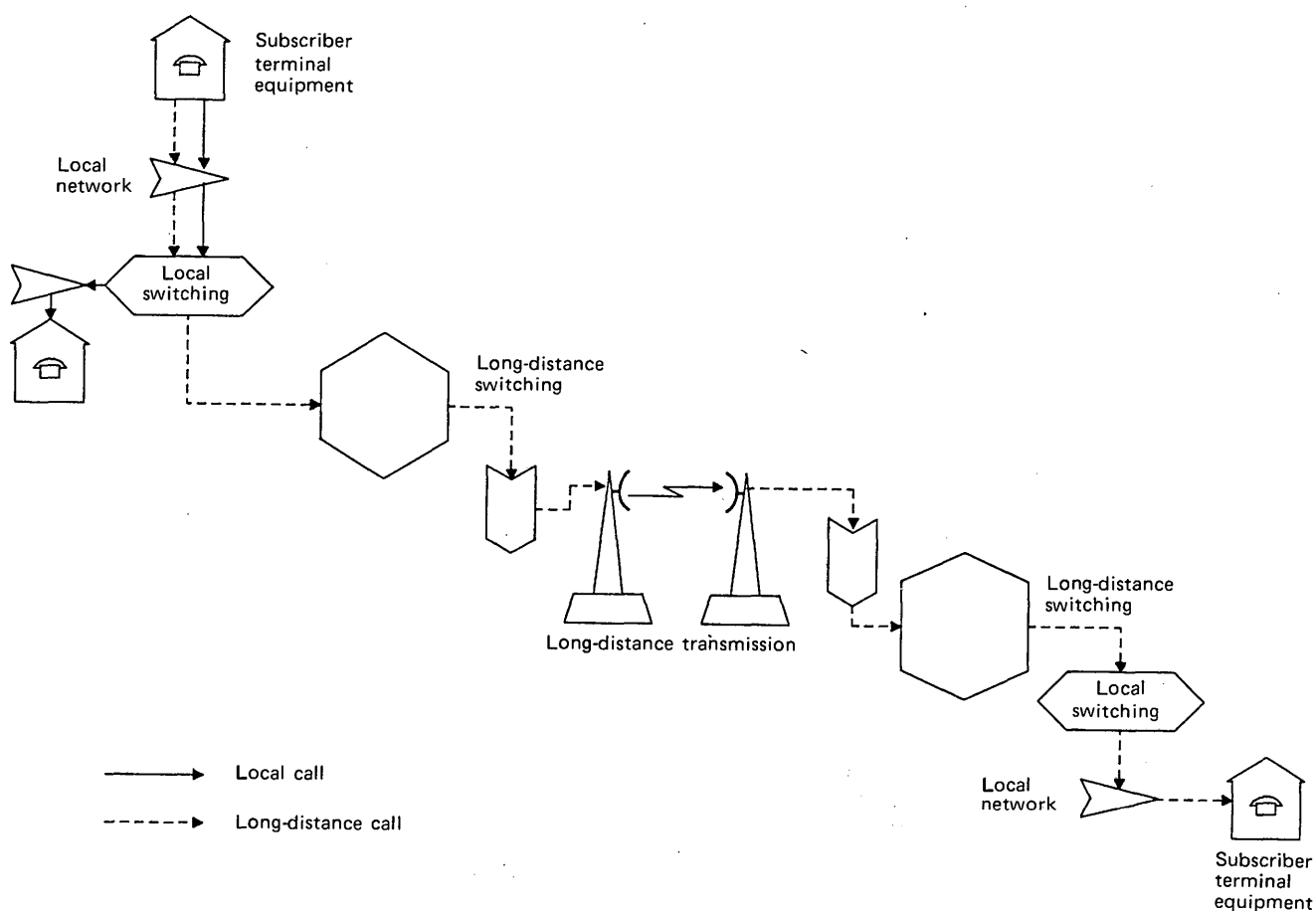


FIGURE 1

The production process

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2.2.2 Characterization of the cost centres (Technical aspect)

Each cost centre has the following characteristics:

- Direct costs** — These are the costs of each centre which include:
 - manpower
 - material/equipment
 - logistics (energy, rentals, etc.)
 - contracted works
 - financial charges and amortization
 - others.
- Indirect costs** — These are the common service costs which will be allocated on the basis of proportion used.
- Acquired costs** — These are the direct and indirect costs that derive from the utilization of service units from any other cost centre.

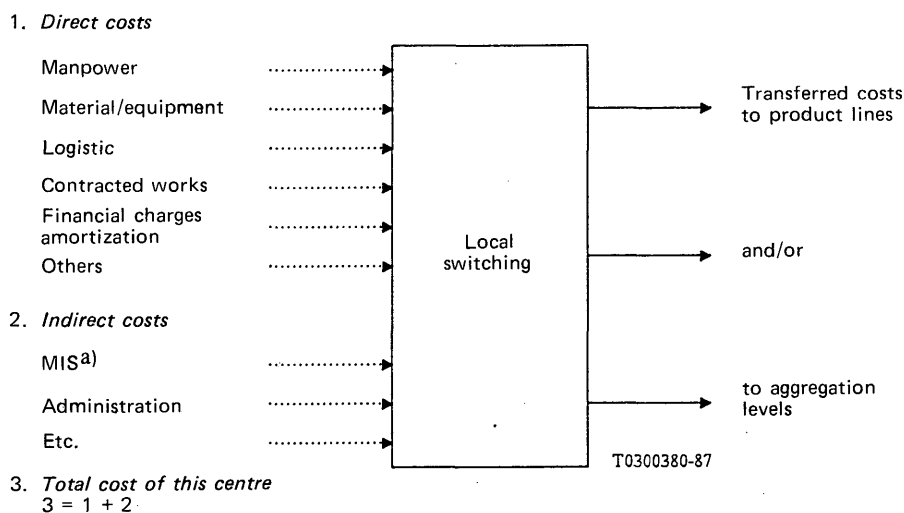
Therefore, the total costs of a cost centre would be as follows:

Total costs = Direct costs + Indirect costs + Acquired costs.

2.2.3 Example of a technical aspect (Local switching, telephone)

Let us go back to the diagram of the production process of local and long-distance subscriber calls and let us take for example the local switching cost centre.

According to what has been established above, this cost centre would be defined as follows:



a) MIS = Managerial Information System

Note – Total cost: 3 = 1 + 2: all costs given on the technical aspect are calculated on product lines and/or aggregation levels.

The total cost of local switching consists of its direct costs, the cost of the service units it “consumes” from the local network plus the indirect costs (administration, etc.).

On the other hand, local switching transfers to long-distance switching the cost of the units (minutes/pulses) that are placed at the disposal of the long-distance service; it transfers to the local service the cost of minutes/pulses placed at the disposal of the users of this service.

2.2.4 Characteristics of the profit centres

Profit centres correspond to services commercialized by the Administration/RPOA.

Their costs are only produced by an apportionment of technical aspect costs.

In order to make the apportionment process more readable (or to ease the reckoning) it will be allowed to gather technical aspects costs into aggregation level within “profit centre” level, the distinction between direct costs and indirect costs does not work, instead of the notion of “nature” (e.g. manpower, amortization, etc.) has a full meaning.

2.3 How the model works

Supposing that a telephone and telex service company provides solely local and long-distance automatic subscriber-to-subscriber service, the model proposed here would work in the manner shown in Figure 2.

In the process of generation of costs, the articulation of the cost centre reflects the correct allocation of costs which does not necessarily represent the physical sequence of “activity” carried out in the production services.

The proposed model presents the following information:

- the total value of the service being provided;
- the value of the traffic unit (minutes/pulses) being provided;
- the total cost in each cost centre;
- the cost of the service unit in each cost centre;
- costs involved in each phase of articulation.

The analysis of the total cost of the local telephone service would convey, for example, the following information:

- the total cost of the local telephone service;
- the minutes/pulses cost of the local telephone service;
- the quantity of minutes/pulses of the local telephone service;

- the share of the following elements in the composition of these costs: manpower, materials, constructions, contracted work, financial charges and amortization, MIS, marketing, administration, etc.;
- the origin of these total/unit costs: local switching telephone service, local network telephone service, local network and subscriber terminal equipment telephone service.

Example: Treatment of a profit centre: “Long distance traffic telex service” gathers charges from:

The profit centre «Long distance traffic telex service» gathers charges from:

- the technical aspect (TA) long distance telex switching (i.e. international switching centre);
- a part of TA long distance transmission. The apportionment made for example from telephone circuits used for telex transmission;
- a part of the aggregation level (AL) “local network telex service”; the apportionment is made, for example, from the taxed traffic (unit: minutes).

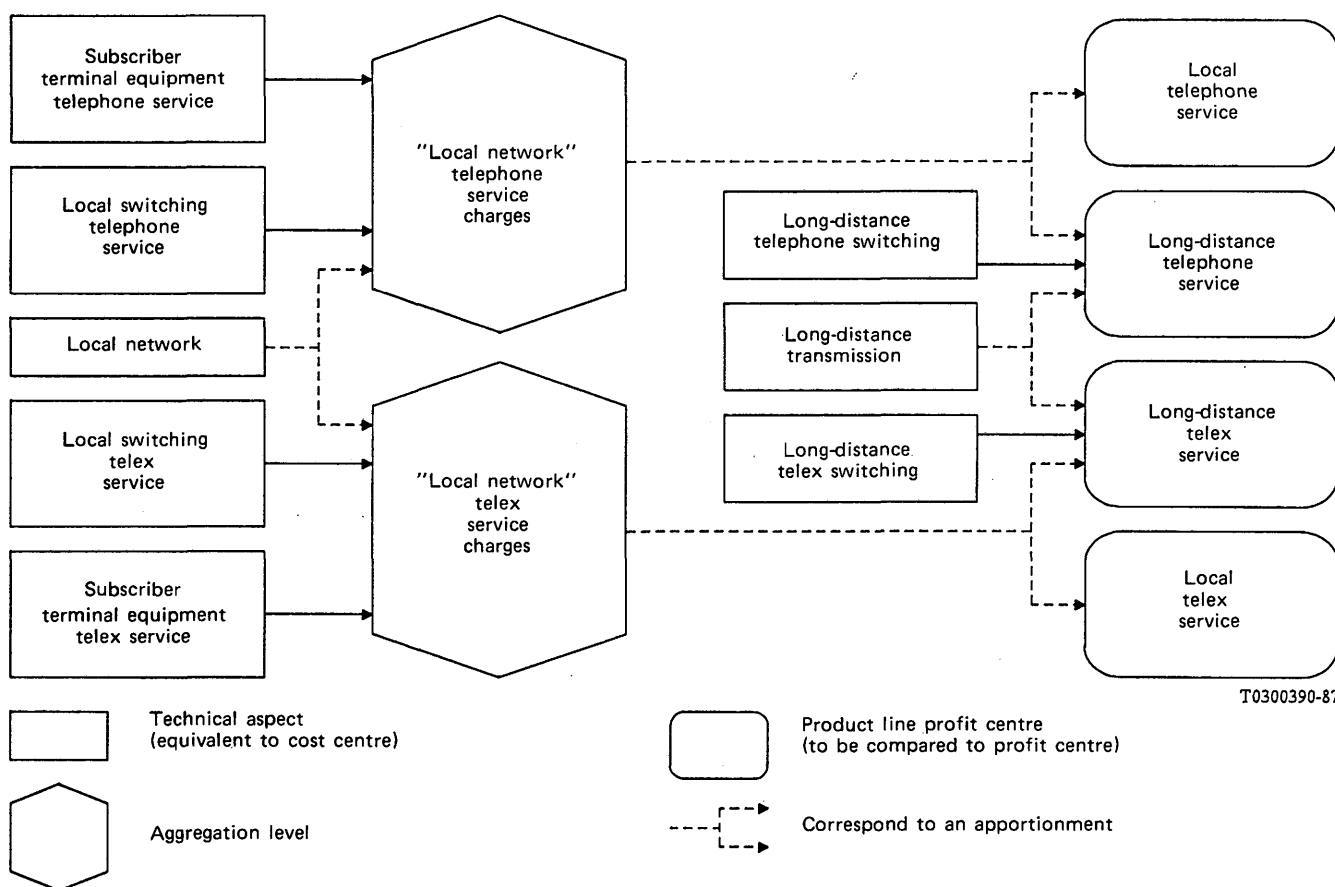
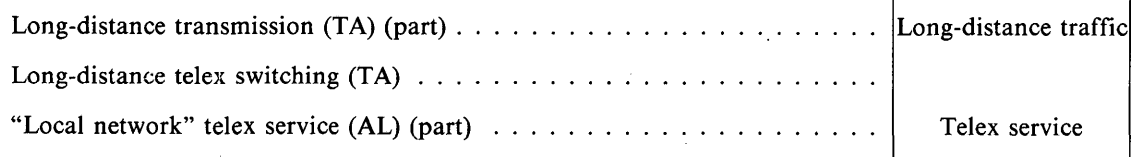


FIGURE 2

Articulation of the model

CHAPTER 3 – COST AND PROFIT CENTRES

3.1 The different cost and profit centres are defined below in addition to the criteria set up for transferring costs.

3.1.1 Cost centres

- 1. Subscriber terminal equipment telex service.
- 2. Subscriber terminal equipment telephone service.
- 3. Local network.
- 4. Local switching telephone service.
- 5. Local switching telex service.
- 6. "Local network" telephone service charges (agregation level).
- 7. "Local network" telex service charges (agregation level).
- 8. Long-distance switching telephone service.
- 9. Long-distance telex switching.
- 10. Long-distance transmission.

3.1.2 Profit centres

- 11. Local telephone service.
- 12. Local telex service.
- 13. Long-distance telephone service.
- 14. Long-distance telex service.

3.2 Cost centres

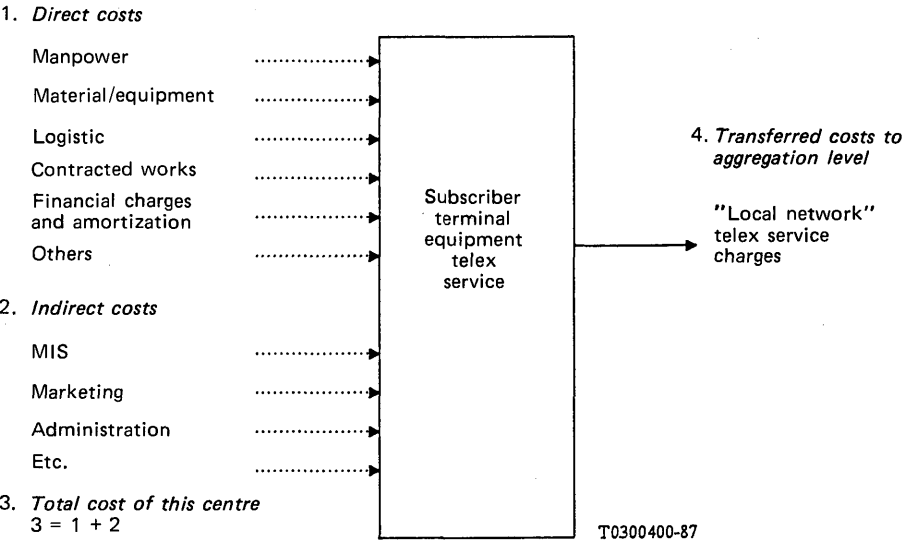
3.2.1 Subscriber terminal equipment – telex service

Subscriber terminal equipment – telex service consists of:

- teleprinter;
- associated wiring and auxiliary equipment;
- other equipment and belongings.

Service unit: terminal equipment;

Cost allocation criterion: the subscriber terminal equipment transfers all its costs to the "local network" telex service charge.



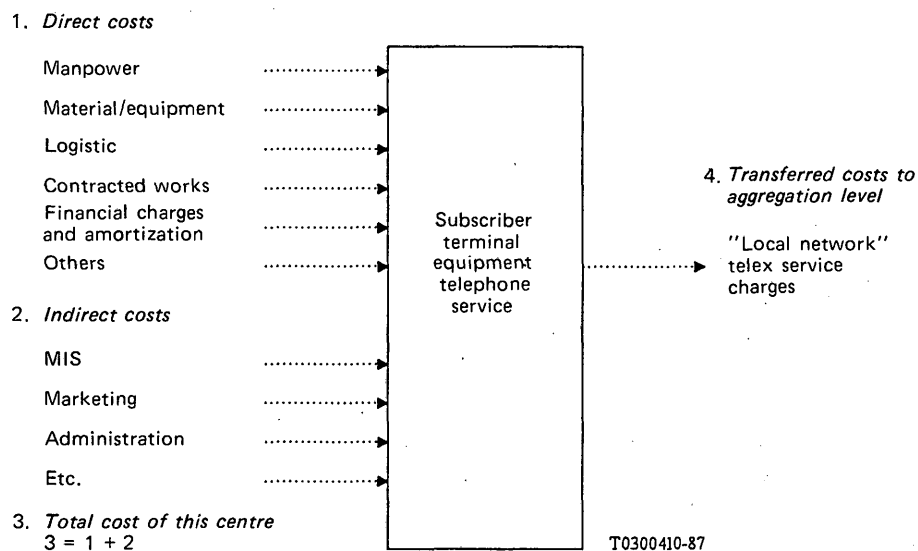
3.2.2 *Subscriber terminal equipment — telephone service*

Subscriber terminal equipment — telephone service consists of:

- telephone set;
- associated wiring and auxiliary equipment;
- other equipment and belongings.

Service unit: terminal equipment;

Cost allocation criterion: the subscriber terminal equipment transfers all its costs to the “local network” telephone service charges.



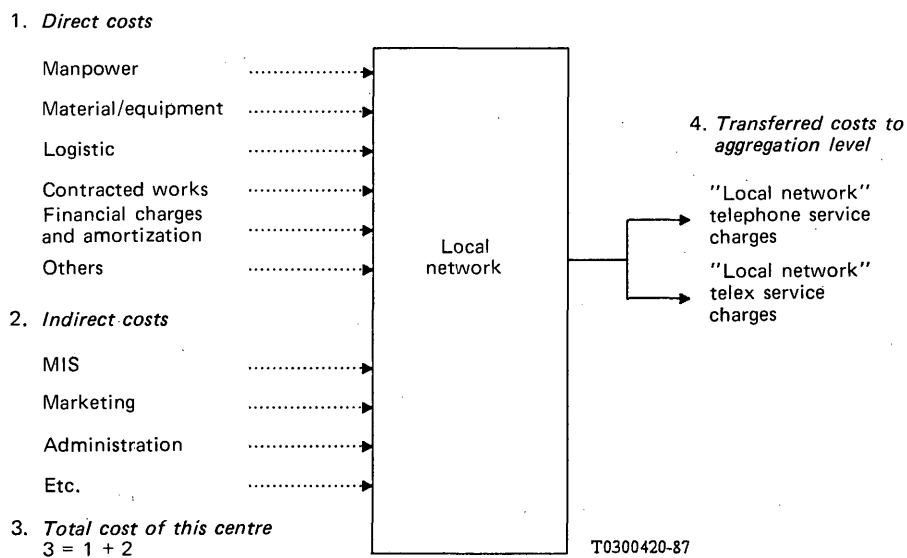
3.2.3 Local network

Local network consists of:

- open wire lines and support pylons;
- aerial cables and support pylons;
- underground cables;
- cabinets, pillars, etc.
- equipment like PCM (pulse code modulation), digital microwave, single line carrier, optical, etc., used in the local network;
- other equipment and belongings.

Service unit: network facilities for interconnection between switching centres and between user terminal equipment and switching centres;

Cost allocation criterion: proportional to the service unit allocated to telephone service or telex service.



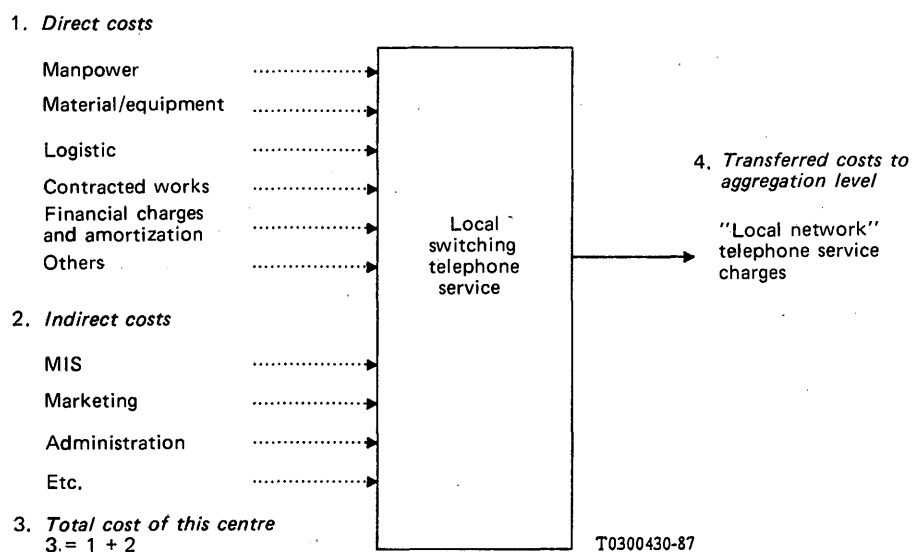
3.2.4 Local switching – telephone service

Local switching telephone service consists of:

- manual local switching exchange;
- automatic local switching exchange;
- logistic (energy, rentals, etc.);
- power plant and air conditioning equipment;
- test and control position and equipment.
- other equipment and belongings.

Service unit: chargeable unit of traffic (minutes/pulses);

Cost allocation criterion: the local switch telephone service transfers all its costs to the “local network” telephone service charges (AL).



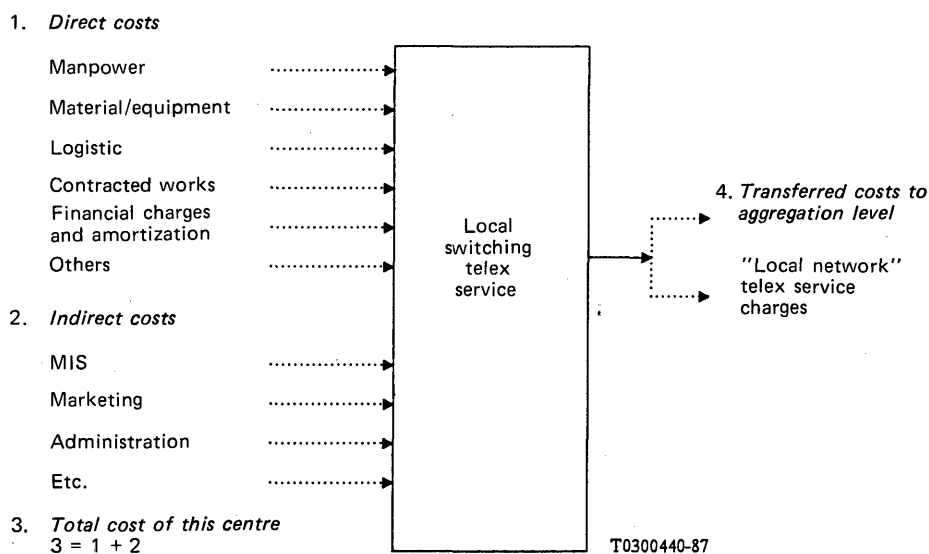
3.2.5 Local switching – telex service

Local switching telex service consists of:

- automatic local switching exchange;
- logistic (energy, rentals, etc.);
- power plant and air-conditioning equipment;
- test and control positions and equipment.
- other equipment and belongings.

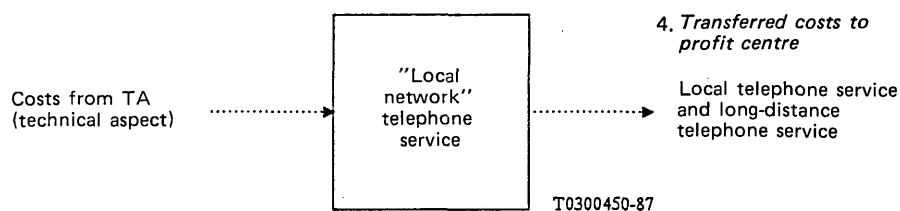
Service unit: chargeable unit of traffic (minutes/pulses);

Cost allocation criterion: the local switch telex service transfers all its costs to the “local network” telex service charges (aggregation level).



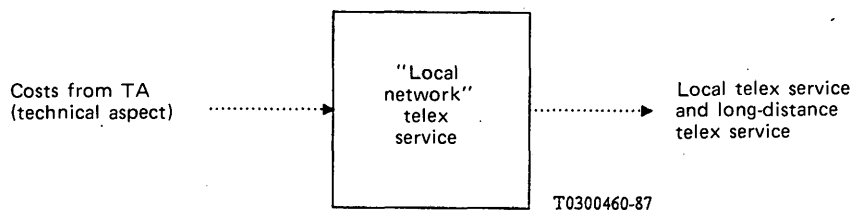
3.2.6 “Local network” telephone service charges (aggregation level – AL)

- “local network” telephone service charges;
- service unit: chargeable unit of traffic (minutes/pulses);
- cost allocation criterion;
 - a) for the local telephone service, proportional to the number of minutes/pulses allocated to the “local service” centre,
 - b) for the long-distance telephone service, proportional to the number of minutes/pulses allocated to the long-distance telephone service.



3.2.7 "Local network" telex service charges (aggregation level – AL)

- local network telex service charges;
- service unit: chargeable unit of traffic (minutes/pulses);
- cost allocation criterion;
 - a) for the local telex service, proportional to the number of minutes/pulses allocated to the "local service",
 - b) for the long-distance telex service, proportional to the number of minutes/pulses allocated to the long-distance service.



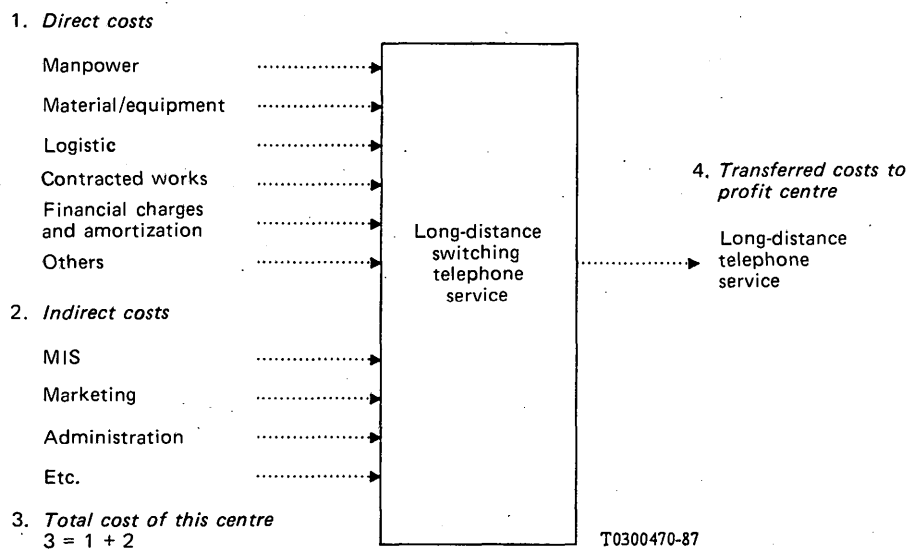
3.2.8 Long distance switching – telephone service

Long-distance switching telephone service consists of:

- manual and semi-automatic trunk exchange;
- trunk automatic exchange;
- logistics (energy, rentals, etc.);
- power plant and air conditioning equipment;
- test and control position and equipment.
- other equipment and belongings.

Service unit: chargeable unit of traffic (minutes/pulses);

Cost allocation criterion: transfers all its costs to the long-distance service itself.



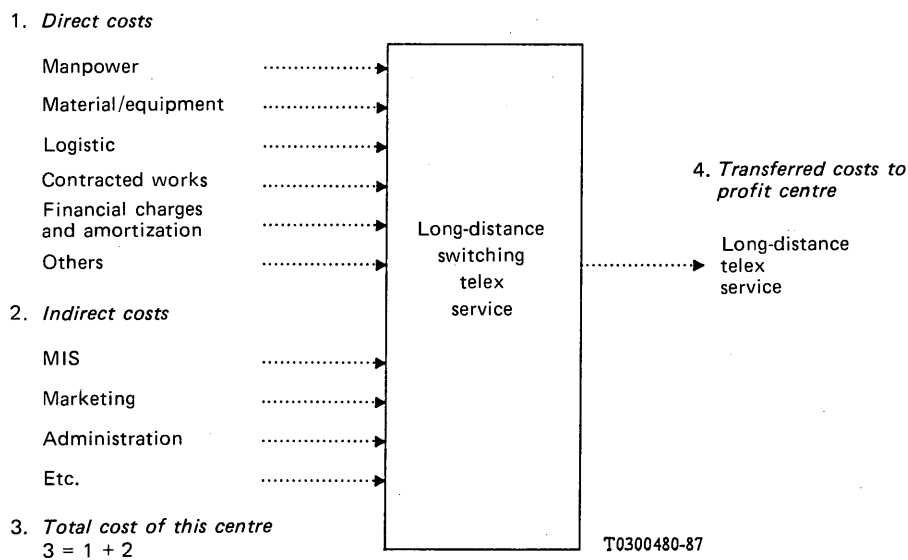
3.2.9 Long-distance switching – telex service

Long-distance switching telex service consists of:

- automatic long distance and international switching;
- logistics (energy, rentals, etc.);
- power plant and air-conditioning equipment;
- test and control positions and equipment.
- other equipment and belongings.

Service unit: chargeable unit of traffic (minutes/pulses);

Cost allocation criterion: transfers all its costs to the long-distance telex service.



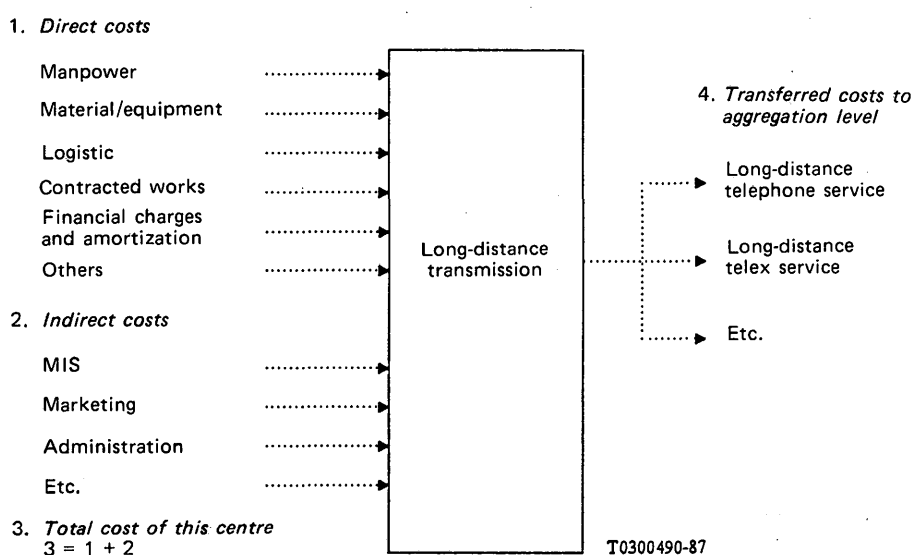
3.2.10 Long-distance transmission

Long-distance transmission consists of:

- open wire line system;
- underground cable system;
- radio based system;
- logistic, tower, repeater stations;
- satellite based system;
- optical fibre system;
- test and control positions and equipment;
- other equipment and belongings.

Service unit: voice channel;

Cost allocation criterion: for each service like telephony, telex, etc., proportional to the unit service allocated.

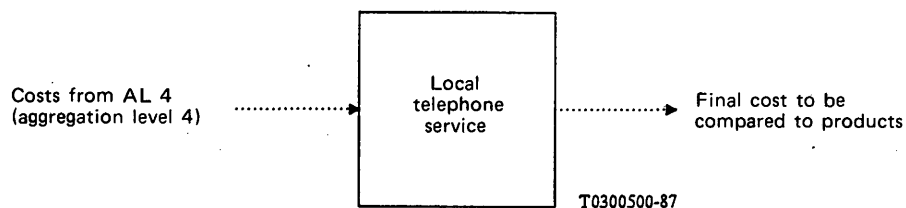


3.3 Profit centres

The following are profit centres that correspond to services provided to users.

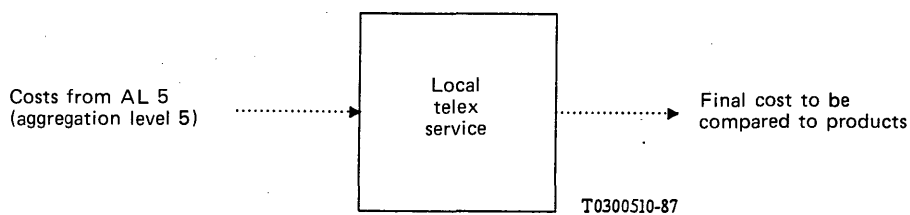
3.3.1 Local telephone service

Service unit: minutes/pulses.



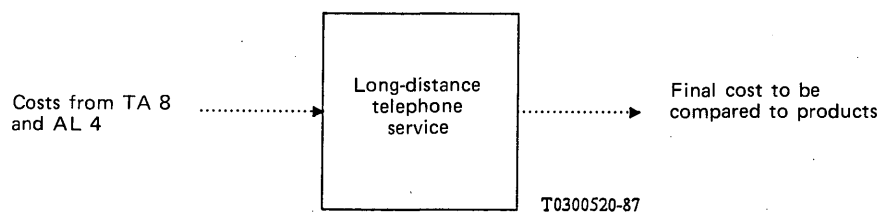
3.3.2 *Local telex service*

Service unit: minutes/pulses.



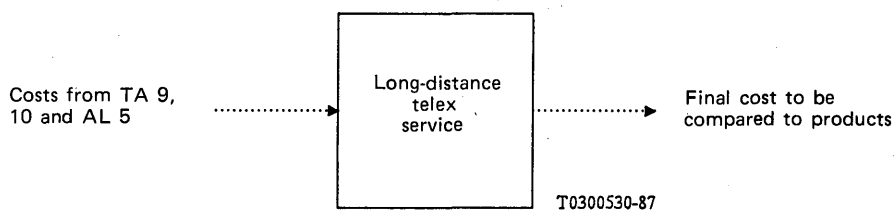
3.3.3 *Long-distance telephone service*

Service unit: minutes/pulses.



3.3.4 *Long-distance telex service*

Service unit: minutes/pulses.



3.4 Allocation of indirect costs

Indirect costs comprise the costs allocated to centres which do not correspond to network elements and therefore cannot be distributed clearly among the profit centres.

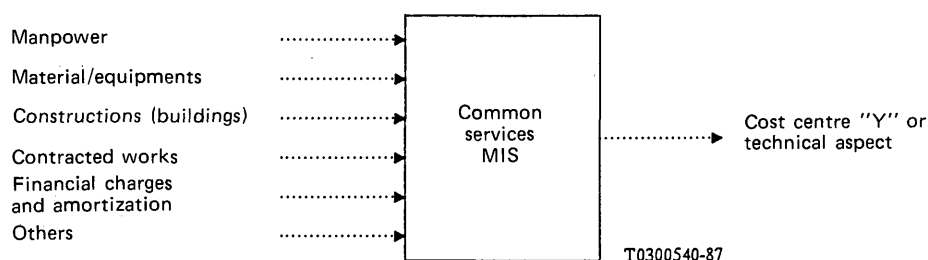
Indirect costs consist of:

- managerial information system;
- marketing;
- administration;
- others.

Cost allocation criterion:

For each cost centre: for the sake of simplicity, the following arbitrary rule is applied:

- indirect cost of MIS¹⁾ $\times \frac{\text{direct costs of each cost centre}}{\text{total direct costs}}$



CHAPTER 4 – THE INPUT DATA FOR THE MODEL

4.1 Accounting data

As stated above, the input data for the model consists of information already available in each company which requires organization.

4.2 Physical data

The measurements of traffic now being carried out in the "ticketed" manual and automatic long-distance service are habitual.

In the local service there is no difficulty in determining the traffic being carried out. Should a particular company have any difficulty in determining traffic in localities where service is not measured, the eventual discounting of this traffic (which it is always possible to measure) will not affect the results, considering its small significance.

4.3 Reports

The model makes it possible to analyze the annual costs at the level of each service, which as compared with the revenue makes it possible to determine the margin (rate per unit).

CHAPTER 5 – ESTABLISHMENT OF TARIFFS (PUBLIC TARIFFS)

5.1 National telephone service

5.1.1 Basic objective of the national telephone tariff

5.1.1.1 In principle, the prime objective in setting charges for the national telephone system is to recover the cost of providing the service, including running costs, depreciation and a suitable return on the capital investment. The return on capital is usually that agreed with or allowed by a Regulatory Body, normally the Government. This

¹⁾ or marketing, administration, etc.

basic principle can equitably be applied to individual components of the national telephone tariff, although in practice economic and political structures generally preclude such an absolute approach and cross-subsidy between individual components of the tariff almost invariably applies.

5.1.1.2 Fixing rates based on a pre-determined return on capital is common practice with public services – water, gas, electricity, etc., and so, unlike many other commodities, there is rarely an opportunity to benefit from a monopoly situation by raising prices above a relatively modest level of return. In some instances, it may also be necessary – due to political and social pressures and price elasticity – to fix the domestic tariff on the basis of low or even nil or negative return, with cross-subsidy from the generally more economic international services or other areas of Government revenues, e.g. oil. The national telephone tariff should incorporate all standard facilities and services which can be defined as those required on a regular basis or in sufficient demand to warrant uniform charging on a common service basis. The range of services included may therefore vary between different countries' systems but would always incorporate call charges and rentals and installation fees for exchange lines provided by the standard means of construction. Usually commonly supplied terminal apparatus such as extension telephones, PABXs, planphone arrangements and single payment services such as removals, takeover of existing services and re-connections will also be covered by the standard tariff. One-off charge assessments should apply for specialized subscriber requirements such as large PABXs (normally applying specially – assessed rental or sale formulas) or for subscriber lines provided by non-standard means or in remote areas with low demand (applying a special construction charge procedure which incorporates a specially assessed rental formula).

5.1.2 *Factors to be considered when establishing tariffs*

5.1.2.1 *General background*

- i) A variety of circumstances exist under which telecommunication systems are provided in developing countries. Countries differ from one another not only in their stage of development, but in their geography and terrain, their population size and mix, their economic and political structures and their actual and potential wealth.
- ii) In any single country, there may be a variety of needs which the Telecommunications Administration has to serve. Differences may arise between geographic regions, between urban and rural, public and private demands, business and residential groups.
- iii) In general, these are termed environmental factors under which an Administration has to operate. Other factors, generally termed marketing factors, will determine how much demand arises, how much service will be given and can be used to overcome or accentuate the environmental factors.
- iv) In this section, four factors are considered as follows:
 - standard of living;
 - urban and rural service considerations;
 - telephone penetration level;
 - elasticity of demand.

Note – Some of the work in this section is an extract from GAS 5 reports and further information in these areas can be obtained by reference to these ITU GAS 5 reports.

5.1.2.2 *Standard of living*

- i) The level and distribution of national income in a country or a market segment has a very significant impact on the demand for telecommunications services. A mathematical model has been developed which determines, amongst other parameters, the correlation of average income per household with the demand for private telephone installations. One of the objectives was to find the level of income at which half of all households desire a telephone. For the year 1965 and at a rate level prevailing in the Federal Republic of Germany it was found that at an average household income per month of approximately DM 2000 (or US \$ 550), half of all households had a telephone, or had ordered one.

- ii) The distribution of income, as well as the average level of income, may be among the determinants of the demand for a given commodity. A country with a few rich people and many poor is likely to have quite a different consumption pattern from that of a country with the same average level of income which is distributed fairly evenly. Similarly, looking at income distribution over time, a significant shift of the sort which could be caused by a radical reconstruction of tax structure might result in a substantial change in consumption patterns: middle-class purchasing habits could replace those of the rich and the poor. Within any given country, however, changes in income distribution are normally fairly gradual and will not affect consumption of most consumer products greatly except over the rather long term.
- iii) There are other possible shifts in income which are not necessarily discovered by examining average income levels and which may be of importance in determining consumer purchases. For example, some forecasters emphasize the idea of the threshold income level – that there is some level of income at which the household moves over the threshold of willingness and ability to buy some particular product or service. If the threshold income level can be identified and the number of households moving over it in any given year can be predicted, this will obviously be of help in determining the potential market for the commodity in question. A market segmentation of the residential sector by income classes can be valuable. The aim is to determine the market penetration in different segments and the probability to use the service.
- iv) As income grows, one can expect pronounced shifts in the relative demand for different categories of goods and services. Particular types of shifts have been observed by comparing the budgets of individual working-class families. A rising family income tended to be accompanied by increased spending in all categories while the percentage spent on food tended to decline, the percentage spent on housing and household operations tended to remain constant, and the percentage spent on clothing, transportation, recreation, health and education tended to increase.

5.1.2.3 *Urban and rural service considerations*

- i) In urban areas, there is generally a concentration of economic activity (including government service) which gives rise to a telecommunication demand. In addition, the average income is normally higher than in other parts of the country, which means that the demand for all types of goods and services is generally higher. Thus, a telecommunication demand in such areas often exceeds supply. At the same time, the costs of providing telecommunication services in these urban areas are low compared to the costs of providing services in isolated and/or underprivileged areas. Consequently, it is usually possible for telecommunication companies to achieve a good rate of return on the services offered in urban areas.
- ii) In rural areas, on the other hand, average income is relatively low. At the same time the costs of providing telecommunication services are relatively high due to the distances that have to be covered, low population densities, and/or low levels of equipment utilization. Thus, for the greater part, subscribers are unable to pay the full cost of the service. Consequently, it is generally difficult for telecommunication companies to achieve an adequate rate of return on the services offered in these special areas.
- iii) Telecommunication development in the developing countries indicates that the limited resources normally available for investments in telecommunications have been primarily allocated to urban, interurban and international services where declining unit costs and the higher financial returns can be obtained. To the extent that these investments are restricted to the modern sector of the country's economy, their benefits do not extend directly to rural areas where many of the country's poor live and where even the basic telecommunication needs are not being met. This may, to a considerable extent, be due to the fact that investments in these areas are financially unprofitable.
- iv) One of the greatest problems facing telephony development in rural areas is the financial unattractiveness of such projects. In this regard, it is generally recognized that service provision to remote and/or underprivileged areas should not have to be entirely self-financing. Some form of internal cross-subsidy scheme is the solution most commonly recommended to deal with this problem. Cross-subsidy schemes have the advantage of being relatively easy to administer and not highly visible. Use of this

technique, however, is not without its drawbacks. In particular, it results in the telecommunication authority being forced to take on a policy responsibility for which it was not intended and may not be equipped. Such a responsibility should normally lie with the national government. Such a line of reasoning would lead a country to favour some form of direct, government-sponsored, tax-based, subsidy scheme. Ultimately, each country must decide this issue for itself, given its circumstances.

- v) The issue of what form a subsidy should take does not answer the question of how much the subsidy should be. For developing countries which typically face overall capital shortages, this is a difficult question to answer. Ultimately, the answer lies in being able to demonstrate that telecommunications deserve a higher priority when scarce investment funds are being allocated.

5.1.2.4 *Telephone penetration levels*

- i) The relationship between households/dwellings and the provision of telephones is usually expressed in terms of penetration where 100% implies that each household has a telephone. This penetration level is usually expressed as main stations per 100 population (also termed telephone density).
- ii) Telephone penetration levels may be viewed/used in three ways:
 - a) as a measure of achievement following implementation of a telephone system and or telephone tariffs;
 - b) as a method of predicting future demand for services (usage) and arranging tariffs to encourage/discourage specified areas/times of usage;
 - c) as a means of demonstrating the need for telecommunications investment.
- iii) Actual penetration of service into households reflects a perceived need (value) for telecommunications, taking environmental and geographical consideration into account.
- iv) The cost of initial telephone acquisition and subsequent maintenance and usage is an important factor in the rate of telephone penetration. Households that are currently without service are likely to be those who are either not in a position to afford it or those who are yet to be provided with a service by their Administration. A further category may be those households who will be induced to utilize the service once it is made available in their area. The momentum of telecommunications development will therefore be dependent on established (often commercial) users. In order to promote and sustain economic growth in a country as a whole, tariff structures for telephone services should have a broad economic base that recognizes the different needs of the various sections of the community.

5.1.2.5 *Elasticity of demand*

- i) It is a widely known and accepted fact of economic theory that normally the higher the price of a particular product or service the less it will be demanded. This statement is modified by the concept of demand elasticity; a product is said to be price-inelastic when the relative change in demand is correspondingly smaller than the relative change in price. At the extreme, a product is highly price-elastic if revenue decreases with increasing prices; though the unit price increases, the number of units demanded falls sufficiently to yield less total revenue. It is unlikely that this would be a desirable change, though for some enterprises it might be, yielding the same profit with less effort and resources through a decrease in expenses. Usually, with price-elastic products, costs cannot be reduced in proportion and price increases lead to smaller profits, or larger losses per unit. This feature applies particularly to telephone services because of the large fixed costs existing in networks.
- ii) *Price-elasticity of demand*

Elasticity of demand for new installations may be estimated taking into account the subjective price perception of potential customers. Price elasticity expresses the sensitivity of customers to the cost of the service. The elasticity parameter is calculated as the ration of percentage change in demand (quantity sold per period) caused by a percentage change in price.

In symbols,

$$E_{qp} = \frac{\frac{Q_1 - Q_0}{Q_0}}{\frac{P_1 - P_0}{P_0}} = \frac{\text{Relative change in quantity}}{\text{Relative change in price}}$$

where

E_{qp} is the elasticity of quantity demanded with respect to a change in price

Q_1 is the quantity demanded per period after price change

Q_0 is the quantity demanded per period before price change

P_1 is the new price

P_0 is the old price

Elasticity of revenues (E_{RP}) may be derived from the above formula as follows:

$$E_{RP} = 1 + E_{qp}$$

- iii) Besides the application of price elasticity to new installations, an elasticity factor may be determined for the effect of a change in monthly fixed charges on subscribers' decisions to retain the service (telephone, telex, private line, etc.).

Similarly, elasticity of demand studies may be used to evaluate the effect of higher or lower usage charges on traffic volumes (e.g. local calls, long-distance calls, telex, facsimile, etc.).

The factors can be calculated by analyzing the effect of historic changes in tariffs for which related unit quantities can be identified.

In an inflationary environment it should be kept in mind that unchanged tariffs represent a relative decline in real price compared to a rising overall price index from year to year. Under a condition of price elasticity this will result in a demand stimulation.

The degree of elasticity depends on several factors. Intuitively, demand elasticity will be low for telephone business subscribers, and higher for private long-distance calls. The degree of availability of comparable substitute services (e.g. mail, telegram) also influences price elasticity. Finally, the degree of price elasticity depends on levels of income (business cost consciousness, or private disposable or discretionary income).

Elasticity is often lower with greater market penetration, and it may vary with the size of the price change. Elasticity may also be different for price increases and decreases.

5.1.3 *Design of a national telephone tariff*

5.1.3.1 *General background*

Recognizing that there may be difficulties in trying to cost relate the different tariff items, it is useful to have certain guidelines on the costs relevant to individual tariff items. They may, for example, help in countering Government or customer complaints regarding the pricing of individual items of service. It should be noted that spare capacity should always feature as part of the "averaged" costs of any service.

In general there are three basic methods of tariffing national telephone systems; that whereby all calls are charged, that where no calls are charged, and that where only some classes of calls are charged. All methods have common features and components listed below that should be identified and costed individually. These costings can then be incorporated into the tariffing/charge setting procedure in a manner suitable to the tariff system under study.

5.1.3.2 System where all domestic calls are chargeable

i) *Exchange line rental*

The charge for this item should, on a cost related basis, be designed to service the average cost of all apparatus that is *exclusive* to each subscriber, i.e.: cost of the telephone instrument, installed cost of the line from exchange to subscriber's distribution point and of exclusive equipment in the public exchange such as the subscriber's meter together with maintenance of all these items.

ii) *Exchange line installation fee*

This item should, on a cost related basis, cover average capital cost of the drop wire from the distribution point to the subscriber's premises, plus all wiring within the premises and the labour and transport cost involved in making the connection, including connection of the telephone instrument.

iii) *Domestic call charges*

The charges for domestic calls should, on a cost related basis, service the cost of public exchange (less any exclusive equipment therein) plus inter-exchange links.

It may be possible to segregate local and trunk call costs (normally by breakdown of exchange and trunk costs on a traffic weighting basis). In practice however, this may be unnecessary because the general tariff strategy will be for a certain style of tariff, (e.g.: untimed local calls plus a range of different metering intervals on the different classes of trunk call), thereby precluding precise cost relationship for each different type of call.

iv) *Terminal apparatus — (rentals and installation fees)*

Tariffs for standard range PBXs, extension telephones and other terminal apparatus are normally easier to cost-relate than the preceding items because identification of average cost is more straightforward/easier.

v) *Deviation from cost related approach*

The main restrictions on applying a cost related approach for each separate tariff item are political, social, marketing and strategic. The cost factors usually indicate that the exchange line rental applied to "residential" customers should be higher than that applied to "business" customers. This is because the average exchange to subscriber line length is greater to residential areas than to business areas. Also, there may be a short term benefit in maintaining low residential rentals if this means that spare capacity is reduced but longer term planning should be based on more cost-related rentals for all classes of subscribers.

However, the rentals actually applied may well have to represent the opposite of this fact if the service provision policy is to provide residential subscribers with an affordable service. Likewise, the inability to market the residential service at a cost-related rental would support a "below cost" approach.

In practice, the domestic tariff affords considerable opportunity for a desirable degree of "cross subsidy". Terminal apparatus like PBXs, plan arrangements and answer-phones and essentially business-oriented services and can usually sustain premium charges. Call charges could be at a premium level due to the preponderance of business-originated traffic. Exchange line installation fees represent the main example of "strategy-based" charging; the charge could be at or above the cost where demand exceeds capacity. This approach has the additional advantage of not affecting existing customers.

The principal dangers inherent in having a heavy business to residential subsidization are residential dilution of the system, unrequired new residential demand (particularly in remote rural areas) and restriction in business demand (e.g.: for replacement of aging facilities).

5.1.3.3 *Flat-rate system*

- i) Under this system the rental level(s) allows for specified classes of call to be made regardless of volume, without payment of any traffic-related charges. In geographically large systems, this “free” usage may be restricted to local area calls but for a small system the rental may incorporate system-wide usage.
- ii) A strictly cost-related approach therefore requires incorporation of average subscriber usage in the rental and, quite contrary to the above arguments, a consequent excess in the business rental because of the higher usage usually made by business subscribers.

The approach to pricing of exchange line installation fees and terminal apparatus charges should generally be the same as for a “call charging” system.

5.1.4 *Main characteristics of different charging systems*

5.1.4.1 *Flat rate*

No call charges for calls within a specified geographical area; this may cover the *whole* of the domestic system.

Characteristics

- i) Easy and simple to apply; the subscriber knows exactly what their bill will be and billing complaints are therefore avoided. Revenue and cash flow estimating is simplified.
- ii) Inescapable “high” rentals which effectively penalize low usage subscribers and therefore could discourage subscriber demand. The business/residential rental differential takes no account of the wide variation of usage within each classification. Usage tends to be high because no call charges are payable often resulting in high exchange and trunk route costs.
- iii) There is no need to supply subscriber’s meters or call timing equipment (unless International Subscriber Dialling on a bulk billing basis is introduced).
- iv) Where tariff changes are required, there is little option but to amend the flat rental(s) due to the lack of other major revenue sources, so there is minimal flexibility.

5.1.4.2 *Partial flat rate (specified number of calls or call units at nil charge)*

Usage may be stimulated but it is usual that many subscribers will restrict their usage to the amount allowed for free or only make essential calls.

5.1.4.3 *Message rate (metered untimed call)*

Calls to or within a specified geographical area are charged at a fixed amount regardless of duration.

Characteristics

- i) Complaints regarding call bills are less likely than with a measured call system and revenue forecasting is less complicated but in that respect both systems suffer compared with flat rate.
- ii) Subscribers can make long duration calls reasonably cheaply. This increases or expedites the requirement for additional equipment, including expensive trunk circuitry resulting in additional costs.
- iii) Because calls are charged at a common rate *per call* there may be a cost saving on equipment, there being no need for periodic pulse metering.

5.1.4.4 *Measured rate*

Calls are chargeable on a measured basis, i.e.: based on distance, duration and possibly time of day.

Characteristics

- i) The billing is relatively more complicated; there are more meter reading complaints than on flat or message rate, whilst the revenue forecasting is complicated.
- ii) The subscriber is able to control to a considerable degree the size of their bill for telephone service through limiting the number and/or duration of their calls. This makes the measured rate system capable of justification in principle to subscribers and controls the level of expenditure on exchanges and trunk equipment and circuitry.
- iii) The timing of all calls means that the basic charges (exchange line rental and the unit call fee) can be maintained at a lower level than with message rate or flat rate thus encouraging more subscriber demand. Message rate and flat rate encourage long duration calls, yielding no additional revenue and creating a requirement for additional switching equipment but measured rate yields call revenue in proportion to system usage. This means that any additional expenditure required on switching equipment will probably be offset by an increase in call revenue.
- iv) Additional capital cost is initially required to provide subscribers' meters and pulse generating equipment. A measured rate system is particularly compatible with the introduction of International Subscriber Dialling.
- v) This system gives the greatest degree of selectivity when considering tariff amendments.

Note — The different characteristics of each charging approach can in fact often be construed, as far as the Administration is concerned, as either advantageous or disadvantageous. For example, under § 5.1.4.4 (Measured rate) the encouraging of demand from applicants with low potential usage is generally undesirable as a long-term proposition since it creates pressure for investment on uneconomic expansion but in circumstances where considerable spare capacity exists, even low rental/low usage subscribers may be economically worth encouraging as a short term policy. Similarly under the flat rate method the high fixed charge(s) may limit demand — this may be beneficial to the Administration depending on similar considerations.

Without such an approach, the result may well be tariffs which achieve the short-term revenue requirements for the overall business but which may effect heavy business to residential subsidy, stimulating excessive residential demand, diluting the system and requiring an inordinate level of new investment.

5.1.5 *Aspects of call metering*

5.1.5.1 *Periodic pulse metering (PPM)*

This is the most common method of metering subscribers calls, whereby the equipment registers an initial meter pulse (representing one unit call fee) as soon as the destination telephone is answered and then registers one pulse at every fixed interval thereafter. The initial chargeable pulse represents payment for "setting-up" cost and subsequent pulses represent payment for circuit and exchange occupancy.

5.1.5.2 *Repeat multi-metering*

This method is the same as with PPM except that multiple pulsing applies on answer and at every fixed interval thereafter, e.g. 2 units on answer and then 2 more units at, for example, every 3 minutes thereafter.

5.1.5.3 *Local/trunk call metering*

Most measured rate telephone systems apply PPM on variable pulse intervals which are dependent on distance or zone. Local area calls (defined as own-exchange calls, calls within a specified multi-exchange area or calls within a specified geographical area) might be charged at call unit fee for unlimited time (i.e.: on answer only) with only trunk (non-local) calls charged on PPM, often at varying pulse intervals depending on distance or time of day. The increasing tendency is to move towards periodic pulsing of all calls whether with local calls less frequently pulsed than trunk calls or in geographically small systems, with uniform pulsing for all domestic calls.

5.1.6 *Time-of-day charging (off-peak tariffs)*

5.1.6.1 Longer duration pulsing intervals may be desirable on calls made during evening and weekend periods to increase demand in the periods when switch/trunk capacity is under employed and to relieve traffic loading during the busy business period. However, if there is no or little congestion in the busy parts of the day and insignificant “new demand” is expected there is a risk that overall call revenue will actually reduce, with no offsetting benefit from decongestion.

5.1.6.2 When considering the introduction of off-peak rates care must be taken in evaluating what is trying to be achieved, i.e.:

- is the aim to try to transfer a part of the peak hour traffic during normal working days to another time of the day to achieve a more even and efficient utilization of the network; i.e. cost saving approach; or,
- is the aim to encourage subscribers to make additional calls and thus create additional revenue.

5.1.6.3 If traffic is dominated by commercial and administrative type traffic, this traffic is unlikely to be transferred to non-office hours or be very responsive to reduced charges. In such cases, reduced non-office hours traffic would not relieve congestion during the peak periods but only mean that calls which would have been passed will be passed at lower charges and thus reduce income.

5.1.6.4 Another problem could be that the peak hour for traffic will be changed by the introduction of reduced rates and the peak hour thus transferred to the reduced rate period. This is uneconomic as the system will normally be dimensioned on the basis of traffic on which a reduced earning is received. Care must be taken in identifying the hours during which reduced off-peak rates apply and to retain the flexibility to adjust these hours in the light of experience.

Ideally, off-peak rates should not be offered on operator-handled calls (because operator costs invariably increase outside normal working hours) or to a destination where the time difference is too great.

These points are also valid in studying the question of the introduction (implementation) of different collection charges for different days of the week.

5.1.7 *Subscriber classification (business/residential mix)*

5.1.7.1 With respect to availability and usage of the telephone system, the business and residential users can generally be regarded as distinct sectors. National tariff structures generally reflect this categorization and apply a higher tariff for business users than for residential users. Whilst this approach is often not consistent with the costs arising (reflecting a degree of cross-subsidy between the market sectors), this tariff differential is often supported by the greater usage made of the system, and the ability to pay, of the business sector.

5.1.7.2 This interaction between business and residential tariff levels offers an opportunity to Administrations to influence demand in accordance with their service provision policy (e.g. to provide subscribers with an affordable residential service) or perhaps to restrict demand in light of capacity constraints.

5.1.7.3 In this context it should be noted that factors affecting the demand for telephone service differ for each sector of the market (e.g. the business sector will be more influenced by the economic/business activity level, the availability of substitute services, etc.) and the effect of a price change can be difficult to estimate accurately. Accordingly, it is prudent to obtain some measure of the effect of any price change or customers usage/demand and this may require the analysis of average customer calling patterns between the market sectors before and after a price change.

5.1.7.4 *Residential customer bills*

Residential customer bills are relatively straightforward in that they usually cover only the exchange line rental and call charges. Records of customer calling patterns can be used to identify the effect of charges in call prices, to be added to any rental adjustments. However, some customers will make fewer calls and their bills will comprise a higher proportion of rental than for the average customer. This will not be of any significance if the proportional increases are the same for rentals and call charges. However, with the trend of costs tending to require greater rental increases, the proportional increase in bills is greatest for those customers making least calls. These may be customers who can least afford increases. Figures derived from average bills should therefore be quoted in terms of the average effect.

5.1.7.5 *Business customer bills*

An average of all business customer bills has limited value except as an indicator of the mean of a wide range of variables, and for comparison on the same basis with the average residential bill. As business customers vary in their usage of the service it is advisable to build up case histories of various categories of business customer so that the effect on each, and on demand, can be identified in more general terms.

5.2 *National telex service*

5.2.1 *Tariff structure*

In general, there should be three main types of charges for the telex service:

- i) An initial installation fee, for having a connection to the network which is paid prior to the initial connection being made.
- ii) A subscription charge which may be paid periodically, i.e. monthly, quarterly, etc., in advance to cover the telex equipment and connection to the telex exchange (private wire). In some countries the provision of telex equipment has been deregulated and private companies or subscribers may provide their own equipment. In such cases a lower connection to the service charge may be applied.
- iii) Traffic charges, that is the charge for the utilization of the network.

5.2.1.1 *Initial fees and subscription charges*

- i) The initial fees and subscription charges for a telex subscription should at least cover the average costs, which are independent of the traffic exchanged. These costs are:
 - a) amortization and interest on the capital which is invested by the Administration in the individual equipment of each subscriber (e.g.: teleprinter, subscriber's line, line relays, meter, relevant part of exchange building, etc.);
 - b) current maintenance of the individual equipment of each subscriber and other operational costs (e.g.: the entry of the subscriber's name, address and telex number in the telex directory, the costs of the necessary subscription registers, the costs of production and handling of the bills, etc.).

- ii) The purpose of the initial fee plus the subscription charges is to cover these basic costs which occur even if the subscriber does not use his equipment for outgoing communications.
- iii) There is an interdependence between the initial fee and the subscription charge, the higher the initial fee is set, the lower the subscription charge can be and the obverse is also true. The lowest initial fee should correspond to the costs of the labour used, materials consumed, and the Administration involved for the installation of the subscription. The initial fee is an important marketing tool which can be used as a demand regulator for the service. The reasons for fixing the initial fee at a higher level may be that a prohibitive effect is desired, i.e.: the Administration wants to reduce the demand, because of shortage of investment or other resources, or it may be that large receipts are needed in a short time in order to finance current investments or to fulfil contracted loan repayments.
- iv) The ideal situation is when an Administration has the possibility to determine the initial fee at an optimum level, which results in the meeting of desired revenue and cash flow targets whilst not deterring the public from making applications for new subscriptions.

5.2.1.2 *Traffic charges*

- i) The traffic charge is a fee for each communication which should cover any remaining costs of capital plus the operation of the network concerned especially the switching equipment.
- ii) For local communications this fee usually varies according to the duration, that is, it is fixed per unit of duration with one minute or six second units being the most commonly used.
- iii) For long distance communications, the communication fee may vary both according to the duration and to the geographical distance between the subscribers involved. This basis is also common practice for international service.

5.2.2 *Charging systems*

5.2.2.1 For manual and semi-automatic networks, the registering and subsequent debiting of call charges is initiated by the operator who established the call. When the subscriber books the call and after the call is finished, the operator records on a "ticket" all the relevant details which are:

- the calling subscriber's name and category;
- the called subscriber's name and category;
- the time and date;
- the tariff to be applied;
- the call duration.

These tickets are then processed to produce customers bills.

5.2.2.2 When telex service is provided on an automatic network two different methods can be used for automatically debiting call charges against the originating subscribers; these are:

- periodic pulse metering;
- automatic ticketing.

The two methods can be used together in the same telex network.

5.2.2.3 *Periodic pulse metering (PPM)*

Periodic pulse metering is a system whereby charging pulses are generated and counted during a call by a meter which is connected to the individual line circuit equipment of each subscriber. The subscriber meter is stepped by the pulses and the pulse frequency is determined by the tariff. It is common that the pulse interval is inversely related to the distance between the two subscribers.

5.2.2.4 *Automatic ticketing*

In this method, all necessary information for charging a call such as the calling subscribers number and category, the called subscribers number and category, the time and date, the tariff to be applied and the duration of the call, are automatically stored on a ticket, perforated tape or magnetic tape. For billing purposes these tickets or tapes are subsequently processed in a processing centre.

5.2.3 *Charging unit*

5.2.3.1 It has become common practice for different minimum charging units to be applied depending on the type of service offered.

5.2.3.2 For fully automatic service:

- i) charging is by the minute and any fractions of a minute shall be charged as for one minute. This is known as one plus one; or
- ii) charging is by shorter periods (commonly six seconds) either derived by periodic pulse metering or an automatic accounting system.

5.2.3.3 For semi-automatic and manual service:

- i) any telex call of three minutes duration or less is normally charged as for three minutes;
- ii) when the duration exceeds three minutes, a charge shall be made for each minute in excess of the first three minutes. Any fraction of a minute shall be charged as for one minute. This is known as three plus one.

5.2.4 *Examples of national charging structures*

5.2.4.1 The national telex network configuration will depend on the size of the country, the number of current and potential telex subscribers, their geographic distribution, the economic situation of the country, the stage of development of the telecommunications Administration, etc. This configuration will shape the charging structure and levels, especially for the traffic charge.

5.2.4.2 The following different configurations are considered:

- i) The country is served with one telex exchange which works as combined national/international exchange.

The telex exchange is usually installed in the capital of the country where there is a concentration of business. Subscribers outside the capital are connected through long distance lines.

In some towns outside the capital where there is an identified concentration of business, line concentrators may be installed. These line concentrators may be connected to the telex exchange using VFT or TDM channels.

- ii) In a large country with a higher number of subscribers and several towns where business is concentrated, the country is usually served with several telex exchanges connected together in a system hierarchy (which may be more or less analogous to the hierarchy in a telephone network) with the main exchange often working as a combined national and international exchange.

5.2.5 *Application of tariffs for different network configurations*

Considering the different network configurations the following may be concluded:

5.2.5.1 *A country with one telex exchange*

- i) Remote subscribers are connected by long-distance lines.
- ii) Remote subscribers are connected to line concentrators.

Whichever of these apply, both the initial fee and the subscription charge may be increased in proportion to the cost of the long-distance line – pertaining to the subscriber – and the line concentrator. However, it may be desirable to have a standard “universal” subscription charge with subscribers a long-distance from the exchange in effect being subsidized by those only a short distance from the exchange.

To simplify the subscription charge it can be divided into two parts; one relating to the apparatus (teleprinter) and the other to the line (and accessories).

The traffic charge should, however, ideally be the same for local and remote subscribers, thus it does not vary by distance as the transmission and switching costs will be the same for all calls.

5.2.5.2 *A country with several telex exchanges*

In a country with several telex exchanges forming a hierarchy in the national telex network, the tariff ideally would be as follows:

For local subscribers, that is subscribers connected to the same telex exchange, either in the capital of the country or in any other town, the charges paid by the subscribers will be an installation fee, subscription fee and the traffic charge. Ideally, all local calls on all exchanges would be at the same rate, but for non-local, i.e. "trunk" or "national" calls there should be different traffic charges that are distance related. The scheme of distance steps in telex should be less complex than that usually found in telephony, as the biggest part of the cost is related to switching equipment and not to trunk lines as is the case in telephony. Two or three steps of distance can be used.

The long distance charges should be calculated to cover the costs of transit exchanges, trunk lines, transmission equipment, maintenance and operation costs, administrative costs, etc.

5.2.6 *Special facilities*

Many modern telex exchanges have special facilities such as abbreviated dialling, message broadcasting, store and forward, etc. Subscribers wishing to be connected to such facilities may have to pay a certain charge, for each facility to be paid periodically with the subscription charges. It may be difficult to fix the level of such charges, but it should at least cover any extra costs resulting from such facilities but to evaluate these charges more satisfactorily, a thorough marketing study of the demand for such facilities and real value of such service is necessary. In certain cases they may be considered enhancements to the basic service which increase usage and provided free of charge.

5.2.6.1 *Store and forward*

Subscribers are able to store messages within the exchange for subsequent transmission. Generally, no additional charge is made for this facility.

5.2.6.2 *Multi-address call*

The same message can be sent simultaneously to a number of different destinations. Each message should be charged for a separate message.

5.2.6.3 *Abbreviated dialling*

An initial list of numbers is normally provided free of charge. Any subsequent changes to the list will be subject to a charge to cover the cost of a new programme.

5.2.6.4 *Automatic call transfer*

Incoming calls for one number may be transferred to another local number during the absence of the subscriber from the first number. No additional charge is normally made for this facility.

5.2.6.5 *Automatic advice of duration*

The advice of duration of a telex call will be automatically printed out on completion of all calls. No charge is made for this facility.

5.2.6.6 *Subdivided accounts*

Available to subscribers who require their telex account to be subdivided into sections. No additional charge is normally made for this facility.

5.2.6.7 *Conference call*

Permits "conversations" to be held between the caller and a number of other numbers, which may include an overseas subscriber. Each connection is charged for as a separate message.

5.2.7 *Miscellaneous services/charges*

5.2.7.1 *Teleprinter transfer charge*

A charge should be paid by any subscriber who wants to transfer their teleprinter from its installed place to another. The charge should cover all the costs incorporated in such a transfer. Average transfer charges can be set for:

- transfer within the same building;
- transfer outside the building;
- transfer outside the town.

A transfer charge is paid once against the execution of such transfer.

5.2.7.2 *Deposit*

Some Administrations ask for a deposit which is paid at the beginning of a subscription with the initial fees. This deposit can be against any damage that may happen due to misuse of the teleprinter, or if there is doubt about the financial status of the customer. The deposit can include a certain amount equivalent to the average consumption of a subscriber for the billing period. The deposit is reimbursed to the subscriber at the time his contract is concluded.

5.2.7.3 *Recovery of equipment*

A charge shall be paid by any subscriber who wishes to cancel his contract for telex service to cover the physical (i.e. labour) and administrative work involved.

5.2.7.4 *Retainer fee*

A retainer fee per month can be applied in lieu of the monthly equipment and connection fee to those customers who opt to retain or fail to request removal of the private wire installation and do not have telex equipment installed on their premises.

CHAPTER 6 – EXTENTION OF THE MODELS

This chapter is for further study.

6.1 *General*

The model described in Chapter 3 has been developed for the purpose of calculating telephone and telex service costs.

The model can be extended, using the same methodology, on the basis of the following two principles:

- extension to other services by altering the level of analysis;
- allowance for the operator's consumption of telecommunication services in profit centre calculations.

6.2 *Extension to other services*

The model may be extended to other services by studying the cost centres specific to each such service in addition to those already described above. The purpose of the study will be to identify, within each cost centre, both the share and the method of allocating each centre's costs to the service in question.

6.3 Allowance for the consumption of telecommunication services

Allowing for the telecommunication services consumed by the operator consists of:

- i) identifying the consumption and expressing it in the same units as those used for outside customers;
- ii) dividing the costs assigned to the profit centres defined above into administration-related costs (Ca) and outside customer-related costs (Ce), for example pro rata to the different levels of consumption;
- iii) correcting the costs assigned to each profit centre by the following formula:

$$C(i) = CR(i) \cdot \left[1 + \frac{\sum Ca(j)}{\sum Ce(j)} \right]$$

where i is profit centre, i , and j is the full complement of profit centres studied.

The final cost obtained, $C(i)$, is then compared with the products covered.

CHAPTER 7 – CONCLUSIONS

7.1 The authors have endeavoured to offer the developing countries a theoretical model for determining tariffs, albeit one which each country will still have the arduous task of adjusting to its own specific situation. There are two essential conditions to be met before this can be done.

7.1.1 The first is to obtain reliable and sufficiently detailed information on the past and present situation of the undertaking. Data derived from a well-organized management cost accounting system are of the utmost importance, as of course is general information relating to the number of subscribers and to traffic.

7.1.2 The second is to acquire some insight into future developments. Ideally, tariffs are set for several years and it is therefore useful to have even a rough idea of how the situation will develop over that period, in order to make the arrangements for simulating the application of planned tariff measures.

7.2 The collection of information on the past and future situation of the undertaking is not usually part of the tariff expert's specific duties. If no adequate system exists for collecting such information, the first task must be to create or develop one. This is a prerequisite for the establishment of balanced tariffs which will place or maintain the undertaking on a sound economic footing.

