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INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

RED BOOK

VOLUME II – FASCICLE II.1

GENERAL TARIFF PRINCIPLES CHARGING AND ACCOUNTING IN INTERNATIONAL TELECOMMUNICATIONS SERVICES

RECOMMENDATIONS OF THE D SERIES



VIIITH PLENARY ASSEMBLY

MALAGA-TORREMOLINOS, 8-19 OCTOBER 1984

Geneva 1985



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PRELIMINARY NOTES

1 The Questions entrusted to each Study Group for the Study Period 1985-1988 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.

PART I

Recommendation D.000

TERMS AND DEFINITIONS

Recommendations D.1 to D.195

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)

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 tariffication 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 accounting rate is the rate per traffic unit(s) agreed between the Administrations in a given relation that is used for the establishment of international accounts.

A.2 collection charge

F: taxe de perception

S: tasa de percepción

The collection charge is the charge in its national currency collected by an Administration from its customers for the use of the international service. The establishment of the collection charge is a national matter.

A.3 customer

F: client

S: cliente

The customer is 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 user is 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: (alquiler) tarifa de arriendo

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.

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

TABLE 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: 10% of the monthly rental;
 - b) for the second day of lease: 10% of the monthly rental;
 - c) for the next 8 days of lease: 5% of the monthly rental, per day;
 - d) after the first 10 days: 4% of the monthly rental, per day, the total amount in no case being more than 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 Allowances for interruptions

4.1 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,³⁾
 - 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.

4.2 For each hour of the initial period of interruption mentioned in § 4.1 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.

³⁾ 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.

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.

4.3 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.

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

4.5 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 § 4.7 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.

4.6 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.

4.7 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.

4.8 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.

5 Private leased circuit network

5.1 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 § 5.2 below.

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

5.3 The authorization in § 5.1 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.

5.4 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 access⁴⁾ to the public networks.

5.5 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.

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

5.7 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.

5.8 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.

5.9 In addition to the provision in the present § 5, all of the general principles in § 1 above apply in the case of a private leased circuit network.

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

6.1 General principles

6.1.1 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.

6.1.2 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.

6.1.3 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 § 5.7 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.

⁴⁾ 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).

6.1.4 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.

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

6.1.6 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.

6.1.7 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.

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

6.2.1 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.

6.2.2 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.

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

6.3.1 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.

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

7.1 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 §§ 7.2, 7.3 and 7.4 below are fulfilled.

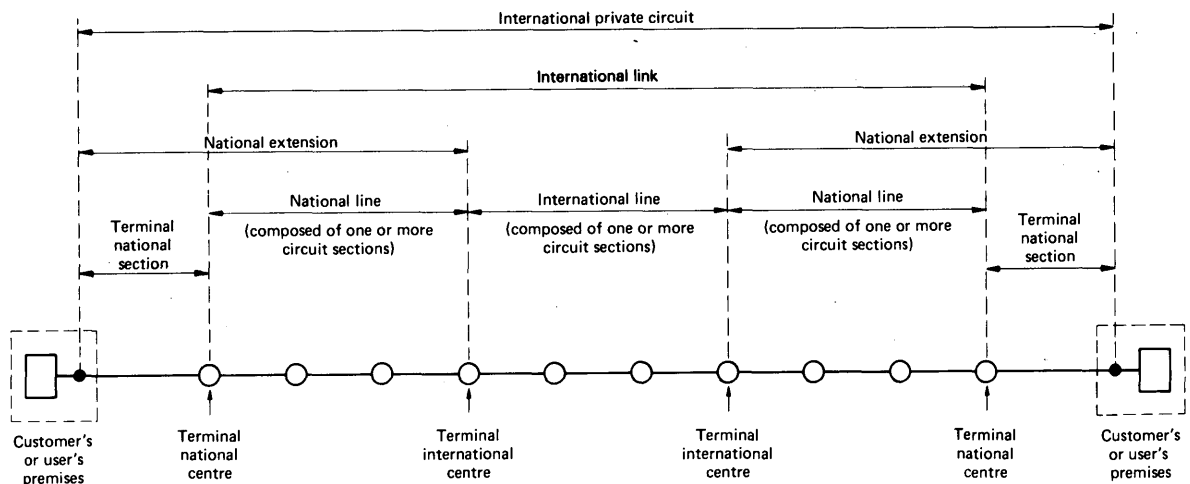
7.2 The function of a computer used for data processing may depend upon the receipt of information partly from one user and partly from another. Moreover, the computer at a data processing centre might be used to transmit to one user intelligence which had been derived from the processing of basic data 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.

7.3 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:

- a) 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 § 7.2 above);
- b) the transmission of messages between users having access to a data processing centre shall not be permitted through that data processing centre;
- c) 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;
- d) the customer shall not be permitted to operate in the manner of an Administration by providing telecommunication services to others.

7.4 In addition to the provisions of the present § 7, all of the provisions in § 6 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
- Junction point of the international leased circuit and the customer's or user's installation

□ 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*, Vol. IV, 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 §§ 6 and 7 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 8000 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	6000
2.2 Lease of an ordinary quality telephone-type circuit in cases not specified in § 2.1	1.00	8000
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

3.1 Circuits meeting the specifications in Recommendation M.1020 [2]

For the leasing of a telephone-type circuit of special quality in accordance with the specifications in Recommendation M.1020, each terminal Administration should apply an additional monthly charge in the range of 250 to 600 gold francs, or in the range of 81.67 to 196 SDR (special drawing rights).

3.2 Circuits meeting the specifications in Recommendation M.1025 [3]

For the leasing of a telephone-type circuit of special quality in accordance with Recommendation M.1025, each terminal Administration should apply an additional monthly charge in the range of 125 to 300 gold francs, or in the range of 40.83 to 98 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 (from Recommendation D.150): The accounting rate is the rate per traffic unit agreed between the Administrations for a given relation which is used for the establishment of international accounts.

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	60 000

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	2000
5.2 Lease of a 100-baud telegraph-type circuit	0.30	2400
5.3 Lease of a 200-baud telegraph-type circuit	0.40	3200
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*, Vol. IV, Rec. M.1040.
- [2] CCITT Recommendation *Characteristics of special quality international leased circuits with special bandwidth conditioning*, Vol. IV, Rec. M.1020.
- [3] CCITT Recommendation *Characteristics of special quality international leased circuits with basic bandwidth conditioning*, Vol. IV, 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) 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.

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

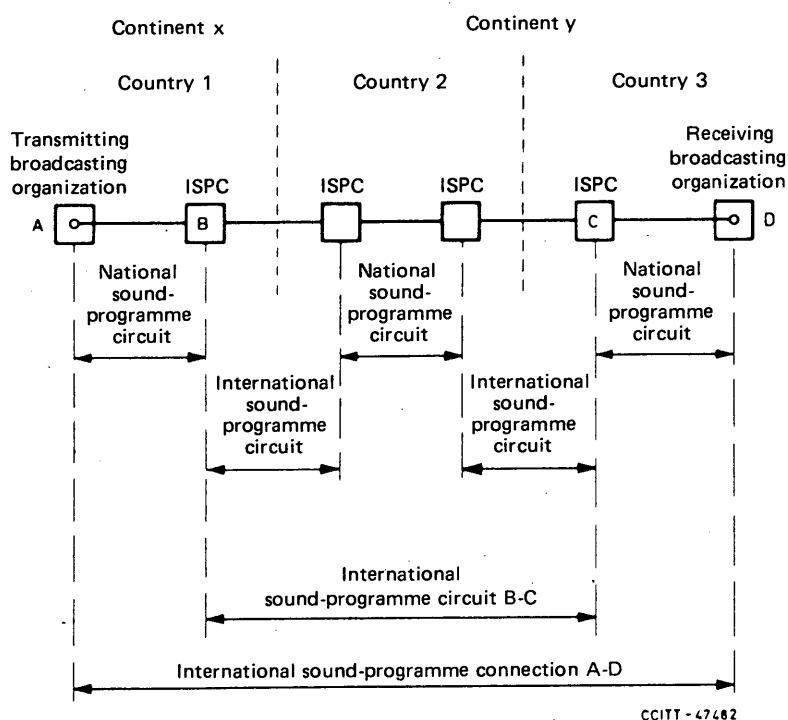


FIGURE 1/D.4

Example of an international sound-programme connection

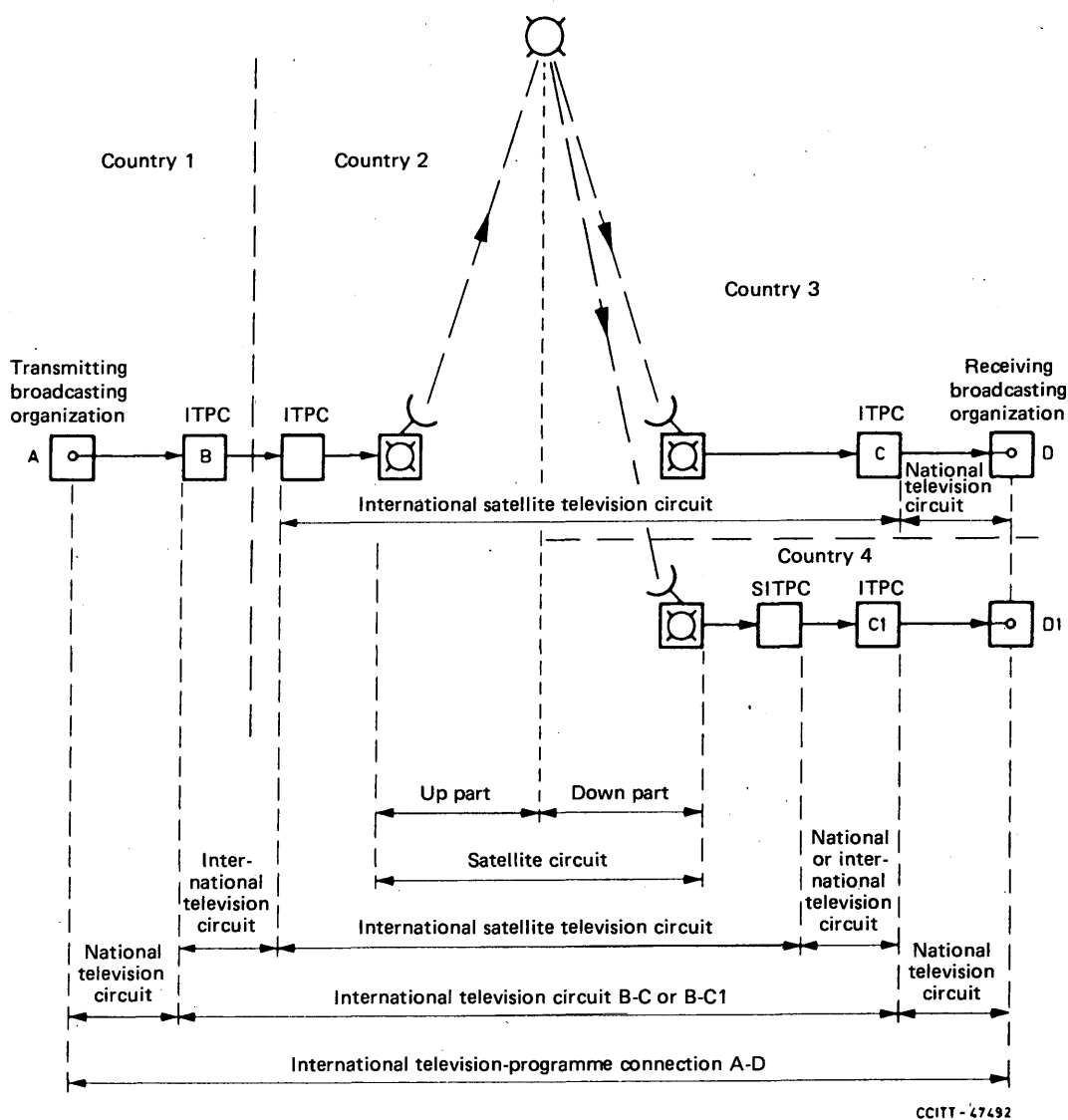


FIGURE 2/D.4

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 § 4 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 § 4.1 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 § 4.1 of Recommendation D.1; generally, the period should be of a lesser duration than that stated in § 4.1 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 § 5 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 substitution ¹⁾.

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.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].

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 either:

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

according to the policy of the origin Administration.

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)*, Vol. VIII, Rec. X.1.
- [2] CCITT Recommendation *International data transmission services and optional user facilities in public data networks*, Vol. VIII, 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.

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

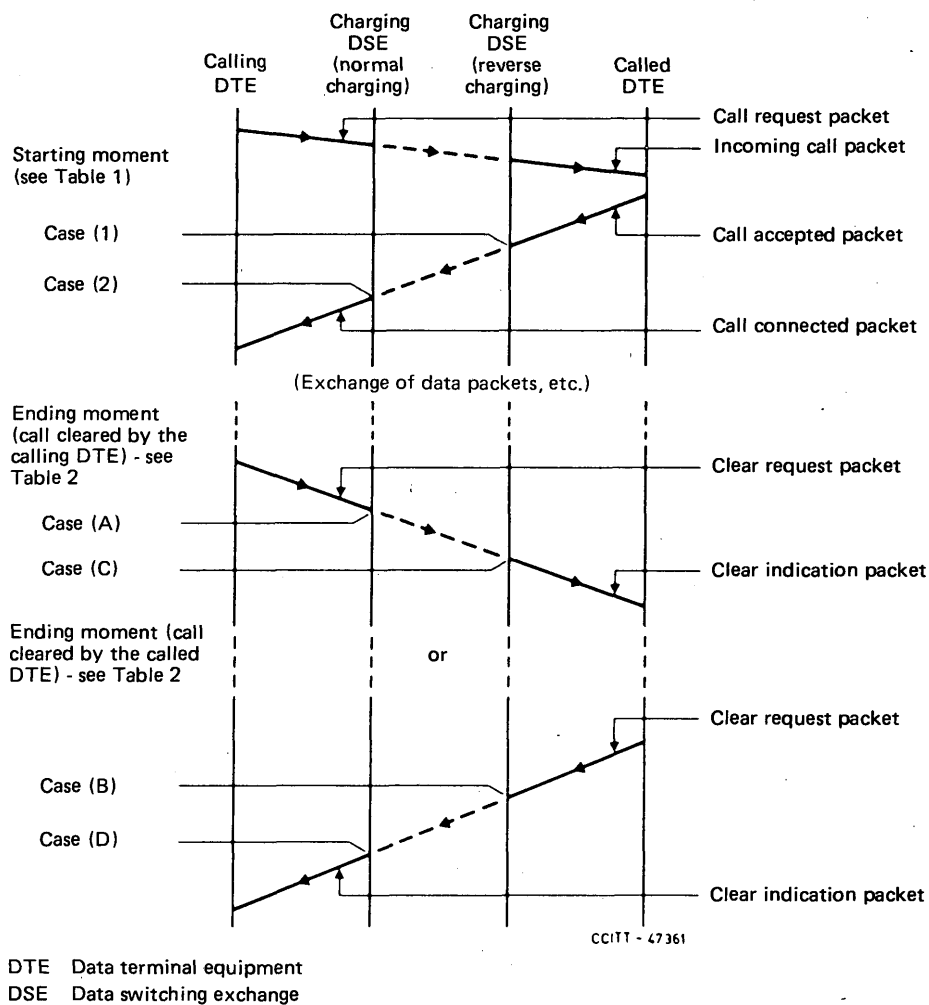


TABLE 1
Starting moment

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 view

(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*, Vol. VIII, Rec. X.1.
- [2] CCITT Recommendation *International data transmission services and optional user facilities in public data networks*, Vol. VIII, Rec. X.2.
- [3] CCITT Recommendation *Packet assembly/disassembly facility (PAD) in a public data network*, Vol. VIII, 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*, Vol. VIII, 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.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 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 dissymetry 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*</i>
2400 bit/s	0.70
4800 bit/s	1.00
9600 bit/s	1.50

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 party in the country of origin;

^{*)} The values of the coefficients are subject to further study.

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

- 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);
- 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:

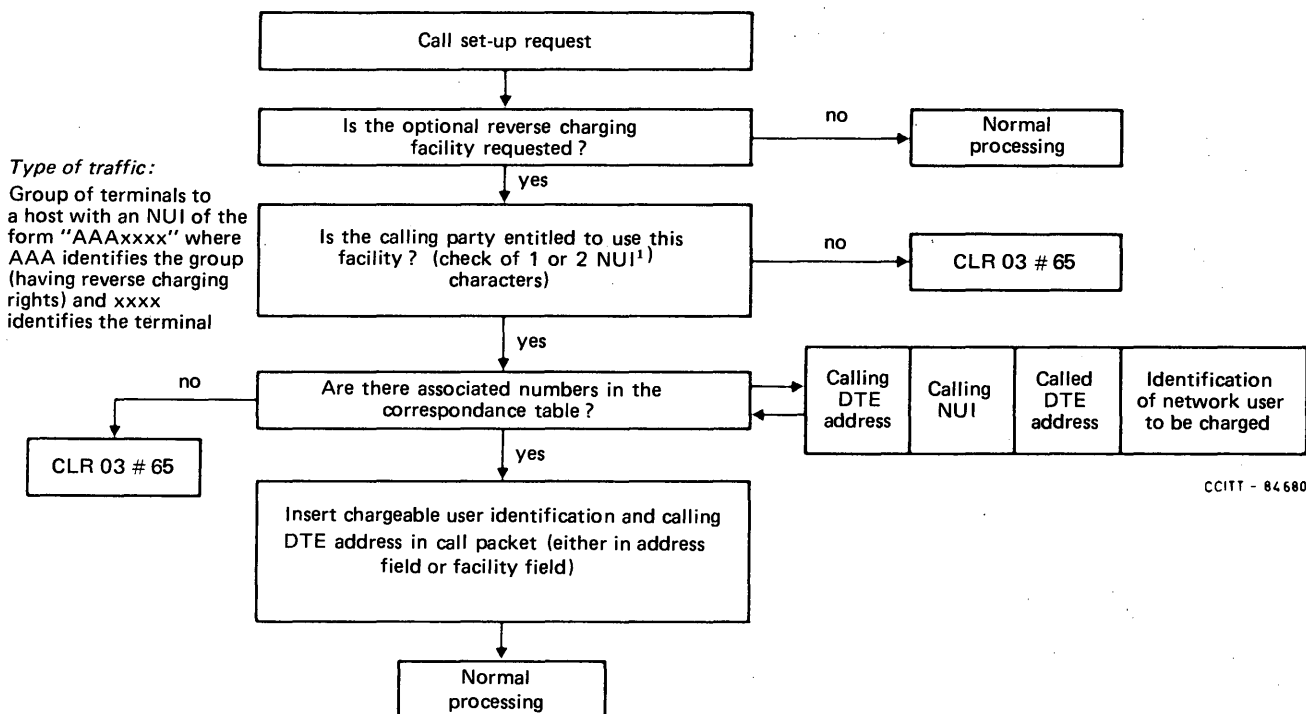
- 4.2.1 ensure optional implementation on a per call basis,
- 4.2.2 assume an agreement with the called subscriber for a given period of time,
- 4.2.3 ensure a precise identification of the calling party by appropriate technical means,
- 4.2.4 allow billing at the rate charged by the Administration of origin,
- 4.2.5 ensure the transmission of the network address of the calling party to the called party.
- 4.2.6 Moreover, such a 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".

The diagram of Figure 1/D.30 gives an example of such an implementation.

4.3 Principle

The address pairs for "calling/called" parties authorized to use the optional reverse charging facility are stored in tables at the calling party's switch, and the address of the calling DTE is replaced in the (incoming) call packet address field by a number identifying the network user to be billed if the check yields a positive result.



¹⁾ For the "network user identification" (NUI) facility, see Recommendation X.28.

Note – In view of the storage capacity required at the switches, a surcharge could be paid by the billed user (surcharge payable when the facility is assigned, and/or monthly, and/or on a per-call basis).

FIGURE 1/D.30

Reverse charging through assignment of a number identifying the user to be billed

Figure 1/D.30, p.

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.

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*, Vol. VIII, 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*, Vol. VIII, Rec. X.25.
- [3] CCITT Recommendation *International numbering plan for public data networks*, Vol. VIII, Rec. X.121.

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)

1 Introduction (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 § 2.7 below.

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

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

2.1 relation (international public telegram service)

F: relation (service télégraphique public international)

S: relación (servicio público internacional de telegramas)

A relation between two terminal countries exists when telegrams are exchanged between them (and, normally, accounts are settled).

2.2 country (or Administration) of origin

F: pays (ou Administration) d'origine

S: país (o Administración) de origen

The country of origin is the country in which the telegram is handed in.

2.3 country (or Administration) of destination

F: pays (ou Administration) de destination

S: país (o Administración) de destino

The country of destination is the country in which the telegram is to be delivered.

2.4 terminal country (or Administration)

F: pays (ou Administration) terminal

S: país (o Administración) terminal

A terminal country is both a country of origin and a country of destination of a telegram.

2.5 transit country (or Administration)

F: pays (ou Administration) de transit

S: país (o Administración) de tránsito

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

2.6 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 single word, 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.

2.7 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).

2.8 accounting rate

F: taxe de répartition

S: tasa de distribución

The accounting rate is composed of the terminal shares and the transit share(s), if any.

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 service.

In the binary tariff system, the accounting rate has the two components described in § 2.7 above. In this system, no minimum rate for a certain number of words is applied.

2.8.1 terminal share¹⁾

F: quote-part terminale

S: parte alicuota terminal

The terminal share is that part of the accounting rate which is due to a terminal Administration and which is used for the establishment of international accounts. In the binary tariff system, the terminal share has two components.

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

2.8.2 transit share

F: quote-part de transit

S: parte alicuota de tránsito

The transit share is that 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, and is the share used for the establishment of international accounts.

In both the per word and binary tariff systems, the transit Administration is remunerated on the basis of the per word rate only.

2.9 collection charge

F: taxe de perception

S: tasa de percepción

The collection charge is the charge in its national currency collected by an Administration from its customers for the use of the international service. The establishment of the collection charge is a national matter.

3 Accounting rates

3.1 Determination by mutual agreement

Accounting rates may be determined:

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

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

3.1.1 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 including a certain number of words for each class of telegram is applied in accordance with the provisions of the Recommendation cited in [1].

3.1.2 Special characteristics of the binary tariff system

In the binary tariff system, accounting rates are composed of a rate per telegraph 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, c) 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).

3.2 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 § 3.4.2 below).

3.2.1 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 provisions of the Recommendations cited in [2] and the actual cost.

3.2.2 *Terminal shares determined by the binary tariff system*

3.2.2.1 The terminal share has two components as defined in § 2.7 above.

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

3.2.2.3 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.

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

3.3 *Transit shares*

3.3.1 Transit shares are determined per word purely and simply.

3.3.2 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 provisions of the Recommendations cited in [2] and the actual cost.

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

- direct transit ²⁾;
- manual transit;
- automatic transit (via the Gentex network or an automatic retransmission centre).

3.3.4 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.

3.4 *Accounting rate*

3.4.1 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.

3.4.2 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.

3.5 *Notification to the ITU General Secretariat*

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

4 *Collection charges*

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 make every effort 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 gold franc;

²⁾ "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.

5 Provisions common to accounting rates and collection charges

Having regard to the provisions of the Telegraph Regulations [3] and the CCITT Recommendations, the following rules shall be taken into consideration when fixing accounting rates and collection charges:

- a) 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;
- b) 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%;
- c) 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.

Note — this provision replaces those cited in [4].

References

- [1] CCITT Recommendation *Operational provisions for the international public telegram service*, Vol. II, Rec. F.1, Division A, §§ IX and X.
- [2] CCITT Recommendations *Tariffs and accounting methods for the international public telegram service*, Vol. II, Section 4, Series F Recommendations.
- [3] *Final Acts of the World Administrative Telephone and Telegraph Conference (Geneva, 1973) — Telegraph Regulations — Telephone Regulations*, ITU, Geneva, 1973.
- [4] CCITT Recommendation *Operational provisions for the international public telegram service*, Vol. II, Rec. F.1, No. A.254.

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
Mauritanie		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
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

TABLE A-4/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 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
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Antigua		-	-	-	4	0.75	0.44	1	5.00	1.00	-	-	-	13	2.69	0.85
Antilles Nrl											-	-	-			
Bahamas																
Barbade		-	-	-	68	0.91	0.50	11	4.00	1.00	-	-	-	84	2.46	0.71
Belize		-	-	-	4	1.25	0.75	3	3.67	1.00	-	-	-	13	1.46	0.77
Bermuda		21	2.57	0.90	16	1.25	0.75	32	3.12	0.91	-	-	-	85	2.41	0.68
Caicos Isl		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Canada		792	1.226	0.631	728	1.211	0.641	2383	1.218	0.524	174	0.914	0.491	5914	0.915	0.450
Cayman Isl		-	-	-	6	1.00	0.79	2	2.50	1.00	-	-	-	23	2.91	0.826
Costa Rica		6.0	2.133	1.6	463.3	0.763	0.4783	97.9	2.1297	1.0418	6.9	1.9565	1.4203	407.8	1.4809	0.6954
Cuba		1967.71	2.25	0.79	286.166	1.28	0.53	1032.657	2.04	0.72	7359	2.47	0.78	2090.016	1.33	0.50
Dominica		-	-	-	2	1.00	0.75	-	-	-	-	-	-	7	2.57	1.00
Dominicana																
El Salvador		2.359	1.912	1.417	152.581	0.721	0.476	61.628	1.781	1.378	1.963	1.722	1.212	153.914	1.399	0.906
Grenada		-	-	-	10	1.00	0.60	1	5.00	1.00	-	-	-	29	2.59	0.86
Guadeloupe																
Guatemala		5.854	2.2955	0.7643	395.804	0.9458	0.4172	130.040	2.5956	0.8533	9.86	2.0775	0.7378	525.794	1.6640	0.5865
Haïti																
Honduras																
Jamaïque																
Martinique																
Mexico																
Montserrat		-	-	-	1	1.00	0.50	-	-	-	-	-	-	1	3.00	1.00
Nicaragua																
Panama																
Panama Zne		1.8	1.600	0.691	455.1	0.580	0.333	81.1	1.840	0.956	4.2	1.543	0.946	126.3	1.095	0.584
Puerto Rico																

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

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

[illegible]

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 to 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
ÜK		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

CHARGING, ACCOUNTING AND REFUNDS IN THE INTERNATIONAL PUBLIC TELEGRAM SERVICE

(Geneva, 1972; amended at Geneva, 1976)

The text of this Recommendation can be found in Recommendation F.42 (Fascicle II.4).

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SECTION 4

CHARGING AND ACCOUNTING IN THE INTERNATIONAL TELETEx SERVICE

Recommendation D.50

TARIFF AND INTERNATIONAL ACCOUNTING PRINCIPLES FOR THE INTERNATIONAL TELETEx SERVICE

(Malaga-Torremolinos, 1984)

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.

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) or over the public switched telephone network (PSTN);

(b) that international Teletex connection should be over public data networks (PSPDNs or CSPDNs) 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 *International working between Teletex networks*

1.1.1 The charge shall be either:

- a) as for the originating network used at the international charge applicable to that network, or
- b) the charge for the international network used,

according to the policy of the origin Administration.

¹⁾ See also Recommendation F.200 [1].

1.1.2 In case b) under § 1.1.1 above, if more than one type of international network is used by an origin Administration for its international Teletex services, in order that a uniform tariff structure may be applied, Administrations may wish to charge as for a single international network e.g. that used in the majority of cases for international Teletex service by the Administration concerned.

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

1.2 *Interworking with telex*

1.2.1 When the international telex network is used, the normal international telex charge shall apply.

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

- a) the normal international telex charge, or
- b) the charge for the international network used,

according to the policy of the origin Administration.

1.2.2 Where appropriate, charges may also be raised for additional facilities used in the country of origin, e.g. for the access network to, and/or the use of, a conversion unit.

2 **International accounting**

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

2.2 The desirability and possibility of adjusting the accounting rate to include the cost of provision of interworking units used for international Teletex traffic may be considered; such adjustment is subject to bilateral agreement between Administrations.

Note 1 — The subject under § 2.2 needs further study in consultation with Study Group I and other relevant Study Groups.

Note 2 — Tariff provisions for interworking with other services (e.g. Videotex, facsimile) is for further study, in consultation with Study Group I.

Reference

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

SECTION 5

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 F.67 [1] 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.

Reference

- [1] CCITT Recommendation *Charging and accounting in the international telex service*, Vol. II, Rec. F.67.

Recommendation D.61

MEASUREMENT OF THE CHARGEABLE DURATION OF AN INTERNATIONAL TELEX CALL FOR CHARGING AND ACCOUNTING PURPOSES

*(based on former Recommendations F.60 and F.67
as shown in Volume II.B of the Green Book; Geneva, 1976)*

The text of this Recommendation can be found in Recommendation F.61 (Fascicle II.4).

Recommendation D.67

CHARGING AND ACCOUNTING IN THE INTERNATIONAL TELEX SERVICE

(Geneva, 1976)

The text of this Recommendation can be found in Recommendation F.67 (Fascicle II.4).

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

SECTION 6

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)

Preamble

This Recommendation sets out the general principles and conditions for tariffication to be applied by Administrations for the provision of bureau to bureau facsimile document services using public facsimile stations (Bureaufax Service)¹⁾.

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 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.

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 standard format (216 × 279 mm) or the "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.

¹⁾ See also the Recommendations F.160 [1] and F.170 [2].

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 pages containing only preamble and address details may be excluded from the international accounts. 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 number and size of page(s) 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 Administrations³⁾ except by agreement with the telecommunication Administrations³⁾ concerned.

²⁾ The Federal Republic of Germany has expressed reservations regarding the application of the provisions of §§ 3.4 and 3.5 and of § 5, "Refunds".

³⁾ 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.

5 Refunds⁴⁾

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* transmission has *begun*. 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 refund* may be granted if transmission and/or *delivery* of the entire document 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 preamble of the document. 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*, 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.

⁴⁾ The Federal Republic of Germany has expressed reservations regarding the application of the provisions of §§ 3.4 and 3.5 and 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.

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.

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].

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 *Operational provisions for the international public facsimile service between subscriber stations*, Vol. II, Rec. F.180, § 5.

Recommendation D.73

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⁾.

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.

¹⁾ See Recommendation F.190 [1].

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 Bureau fax 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 Bureau fax 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.

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:

- 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*, Vol. II, Rec. F.190.

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SECTION 7

CHARGING AND ACCOUNTING IN THE INTERNATIONAL PHOTOTELEGRAPH SERVICE

Recommendation D.80

PROVISIONS ABOUT INTERNATIONAL PHOTOTELEGRAMS

(Geneva, 1958)

The text of this Recommendation can be found in Recommendation F.80.

Recommendation D.81

PROVISIONS RELATING TO PRIVATE PHOTOTELEGRAPH CALLS

(Mar del Plata, 1968)

The text of this Recommendation can be found in Recommendation F.80 *bis*.

Recommendation D.83

RATES FOR PHOTOTELEGRAMS AND PRIVATE PHOTOTELEGRAPH CALLS

(Geneva, 1958)

The text of this Recommendation can be found in Recommendation F.83.

Recommendation D.85

RULES FOR INTERNATIONAL PHOTOTELEGRAPH COMMUNICATIONS TO MULTIPLE DESTINATIONS

(Geneva, 1972)

The text of this Recommendation can be found in Recommendation F.85.

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SECTION 8

CHARGING AND ACCOUNTING IN THE MARITIME MOBILE SERVICE

Recommendation D.90¹⁾

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 With regard to mobile station charges (K11 to K19 below), Resolution No. 315 of the *World Administrative Radio Conference* specifically resolved to adopt the recommended date of 31 December 1987 for the abolition of mobile station charges for public correspondence in the maritime mobile service.

5 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*.

6 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.

7 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.

8 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*.

¹⁾ This Recommendation is also included in the Series F Recommendations under the number F.111.

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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 relating to the use of facilities provided by the 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) the mobile station charges (if any);
- K5 d) any charges for special services for telegrams that have to be considered in the accounting; and
- K6 e) any special charges for special facilities.
- K7 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.
- K8 1.1.3 The landline charges applicable to radiocommunications between a mobile station and a country other than that of the land station, are the collection charges fixed or applied for telecommunication services in the international relation concerned; they shall be notified either in SDRs or in gold francs to the ITU General Secretariat by the land station Administration.
- K9 1.1.4 The land station charges shall be expressed either in SDRs or in gold francs; Administrations shall notify to the ITU General Secretariat the charges fixed by them.
- K10 1.1.5 The landline and land station charges notified to the ITU General Secretariat in accordance with K7 to K9 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].
- K11 1.1.6 Where mobile station charges are applied, the Administration of the country that has issued the licence shall so notify the ITU General Secretariat for inclusion of this information in the *List of Ship Stations* [6].
- K12 1.1.7 Mobile station charges may be applied in the radiotelegram, radiotelephone and radiotelex services in the MF and HF bands. They shall not be applied in the VHF service, in the Maritime Mobile-Satellite Service nor in any service with automatic operation; however, mobile station charges may also be applied for radiotelegrams transmitted via VHF.
- K13 1.1.8 Mobile station charges shall be abolished for traffic exchanged after 2359 hours UTC²⁾ 31 December 1987.
- K14 1.1.9 Until 31 December 1987, the following standardized mobile station charges shall be applied worldwide:
- K15 a) radiotelegrams, 0.13 SDRs or 0.40 gold francs per ordinary word;
- K16 b) radiotelephone calls in the MF band, 0.49 SDRs or 1.50 gold francs per minute;
- K17 c) radiotelephone calls in the HF band, 0.65 SDRs or 2.00 gold francs per minute;
- K18 d) radiotelex calls in the MF and HF bands, 0.49 SDRs or 1.50 gold francs per minute.

²⁾ For practical operating purposes, Coordinated Universal Time (UTC) may be considered as equivalent to Greenwich Mean Time (GMT).

- K19 1.1.10 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 when mobile station charges are no longer applicable. The Administration may set an upper limit to these fees.
- K20 1.1.11 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*

- K21 1.2.1 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 delay specified below (counted from the day after the dispatch of the first notification by the ITU General Secretariat):
- K22 a) for traffic from mobile station to land: 1 month and 15 days;
- K23 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*

- K24 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.
- K25 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*

- K26 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.113 to A.126 to ensure proper application of these provisions.

- K27 2.1.2 The total charge of radiotelegrams is collected from the sender.
- K28 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*

- K29 2.2.1.1 No charge for radio transmission in the Maritime Mobile Service is made for radiotelegrams of immediate general interest, provided that they are:
- K30 a) distress messages or replies thereto;
- K31 b) radiotelegrams originating in mobile stations notifying the presence of icebergs, derelicts, mines and other dangers to navigation, or announcing cyclones and storms;
- K32 c) radiotelegrams originating in mobile stations announcing unexpected phenomena threatening air navigation or the sudden occurrence of obstacles at airports;

- K33 d) radiotelegrams originating in mobile stations notifying sudden changes in the position of buoys, the working of lighthouses, devices connected with buoyage, etc.; or
- K34 e) service radiotelegrams relating to the maritime mobile service.

2.2.2 *Radiotelegrams relating to medical advice*

- K35 2.2.2.1 No charge for radio transmission is made for radiotelegrams relating to medical advice provided that:
- K36 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,
- K37 b) they are addressed in accordance with the conditions indicated in that List.

2.2.3 *Meteorological radiotelegrams*

- K38 2.2.3.1 Land station charges and mobile station charges applicable to meteorological radiotelegrams (see Recommendation F.1) should be reduced by at least 50 per cent in all relations.

2.2.4 *Radiotelegrams concerning persons protected in time of war*

- K39 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.
- K40 2.2.4.2 The land station charges and the mobile station charges for these RCT radiotelegrams shall be decreased in the same proportion as specified for RCT telegrams in CCITT Recommendation F.1.
- K41 (Spare, no text)
- K42 (Spare, no text)

2.2.5 *Radiomaritime letters*

- K43 2.2.5.1 Except as otherwise provided in K44 to K47, radiomaritime letters may be accepted, taking into account CCITT Recommendations relating to letter telegrams, if the telegram service is used to convey radiomaritime letters.
- K44 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.
- K45 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.
- K46 2.2.5.4 The following charges are added where applicable:
- K47 a) charges due for special services;
- K48 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*

- K49 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.
- K50 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.

- K51 3.1.3 The unit charge is the charge for an ordinary private call of one-minute duration except when provision K55 is applied for automatic operation.
- K52 3.1.4 The minimum charge for a manual, single-operator or semi-automatic call is three units.
- K53 3.1.5 Automatic calls should be charged by one of the following two methods, taking into account CCITT Recommendations:
- K54 a) charging minute by minute;
- K55 b) charging by periodic pulses of the type used in the national automatic service.
- K56 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.
- K57 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.
- K58 3.1.8 The decision of the land station according to K57 will also be valid for international accounting.

3.2 *Special charges*

- K59 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.
- K60 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.
- K61 3.2.3 The charge of special call facilities shall be calculated on the basis used for an international call, applied to either:
- K62 a) the landline charge only; or
- K63 b) all components of the call charge.
- K64 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**

- K65 4.1 The international telex charge shall be the same as is applied in the international telex relation concerned.
- K66 4.2 The land station and the mobile station charges if any may be the same charges as applied to Radiotelegrams except for charges related to special services as specified in K29 to K48, or they may be fixed in terms of the unit of chargeable duration as converted on the basis of the number of words.
- K67 4.3 The total charge for radiotelexograms should be collected from the sender except where other provisions are agreed.

5 **Radiomaritime telex letter**

- K68 5.1 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 Administration may authorize accounting authorities recognized by them to notify the ITU directly of additions and deletions of ship stations for which they have responsibility. Copies of any such notification to the ITU by an accounting authority may also be required by the licensing Administration. 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 L63 to L66.

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 (Spare, no text)
- L14 c) any charges for special services for telegrams;
- L15 d) where appropriate, the special charges for radiotelephone calls with special facilities;
- L16 e) where appropriate, postal charges on radiomaritime letters.
- L17 2.1.2 The accounting for radiocommunications originating in mobile stations shall be based on accounting data gathered in the land station country, recording:
- L18 a) the mobile station identification;
- L19 b) the accounting authority identification code, if applicable;
- L20 c) the number of the addressee, including country and area codes;
- L21 d) chargeable duration;
- L22 e) start of the conversation time, if applicable;
- L23 f) traffic category.

- 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 L42, debit the origin Administration with:
- L25 a) the land station charges; and
- L26 b) the mobile station charges, if any.
- L27 2.1.4 As regards automatic and semi-automatic radiocommunications, see L43 and L44.
- L28 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 and B54), only the land station charge shall be debited.
- L29 2.1.6 In the case of a completed radiocommunication in the direction to a mobile station, the land station Administration credits the accounting authority for the destination mobile station with:
- L30 a) the mobile station charges, (if any), and
- L31 b) the total charge collected for prepaid reply, if occasion arises.
- L32 2.1.7 In the case of radiocommunications exchanged between mobile stations:
- L33 2.1.8 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. Thereafter, if occasion arises, the provisions of L29 to L31 are applied.
- L34 2.1.9 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 L28 and, if occasion arises, the provisions of L29 to L31 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.
- L35 2.1.10 For accounting purposes, collect calls shall be regarded as originating in the destination country or mobile station.
- L36 2.1.11 Accounts are prepared monthly by the land station Administration and rendered by it to:
- L37 a) the accounting authority responsible for the mobile station (see L10 to L16 and L29 to L31);
- L38 b) the origin Administration (see L24 to L26) with the exception referred to in L42.

2.2 *International accounts*

- L39 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.
- L40 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.
- L41 2.2.3 Except as provided for in L43, land station charges and mobile station charges shall, in principle, not be entered in the international telegram, telephone and telex accounts.
- L42 2.2.4 However, by previous agreements, Administrations may establish a system by which the land station charges and the mobile station charges are included in the international accounts by the origin Administration.
- L43 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.

- L44 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 L43.
- L45 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.
- L46 2.2.8 A specimen statement is given in Annex C to this Recommendation.

2.3 *Accounting for single-operator service*

- L47 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.
- L48 2.3.2 The operating and charging procedures are described in Recommendation F.110.
- L49 2.3.3 The billing and settlement procedures for single-operator radiomaritime calls to mobile stations are as follows:
- L50 2.3.4 Except as provided for in L52, the call details are forwarded at least monthly to the Administration in question in the caller's country.
- L51 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.
- L52 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 L16).
- L53 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**

- L54 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.

- L55 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.

- L56 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.
- L57 3.4 Administrations shall normally 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.

- L58 3.5 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, these statements should give the total charge for each mobile station and be covered by a single invoice.

- L59 3.6 A specimen statement is given in Annex B.
- L60 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.
- L61 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.
- L62 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.
- L63 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 (see Note below) except where the settlement of accounts is undertaken in accordance with the *Telegraph Regulations* and the *Telephone Regulations*. The unique invoice numbers and the traffic period(s) covered by the payment should be quoted at the time of payment.
- L64 3.11 If international maritime accounts remain unpaid after 4 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.
- L65 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 from the date of receipt of the account.

Note — This period may be re-examined during the 1985-1988 study period, with a view to seeking a further reduction which might be made possible as a result of improvements in traffic account handling processes. Other factors affecting the period of payment should also be studied.

- L66 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

- L67 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

- L68 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.

- L69 5.2 However, should an Administration deem it desirable to destroy the originals of radiotelegrams or any other documents or records mentioned in L68 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

- L70 6.1 Normal international accounting procedures should apply except as specified below:
- L71 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:
- a) the land station charges;
 - b) the international telex charges;
 - c) any charges for special services.
- L72 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 radiotelexogram originated with:
- a) the land station charges; and
 - b) the mobile station charges (if any);
 - c) any charges for special services.

DIVISION M

REFUNDS

1 Radiotelegrams

1.1 General

- M1 1.1.1 The provisions of Recommendation F.42, Division C 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 F.42, C38 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.

(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.

(to Recommendation D.90)

Account between country A and country B in respect of:

- radiotelegrams
- radiotelephone calls
- radiotelex calls

sent through the land stations of country A during the month of ...

[illegible]

(to Recommendation D.90)

Account between Administration A and Administration B in respect of:

- telephone calls,
- telegrams,
- telex calls.

Traffic month	Country of origin	Destination ocean area	Class of service	Number of messages/calls ^{a)}	Minutes/ words ^{b)}	Accounting rate share ^{c)}	Total amount due (SDR or GF)

b) Chargeable duration.

- land line charge;
- coast earth station charge;
- space segment charge;

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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.
- [5] *List of Coast Stations*, (published every 2 years), ITU, Geneva.
- [6] *List of Ship Stations*, 24th edition, ITU, Geneva, 1984.
- [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.

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SECTION 9

TRANSFERRED ACCOUNT SERVICE

Recommendation D.98

THE TRANSFERRED ACCOUNT TELEGRAPH SERVICE

(Mar del Plata, 1968)

The text of this Recommendation can be found in Recommendation F.41.

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SECTION 10

CHARGING AND ACCOUNTING IN THE INTERNATIONAL TELEPHONE SERVICE

10.1 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)

1 The unit charge 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 three charge units.

The unit charge 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 in the same class, with the same priority and of the same duration, exchanged during the same charge period, plus a special charge for personal calls fixed by agreement between the Administrations concerned.

¹⁾ The provisions of this Recommendation were contained in the former Recommendations cited in [1] and [2].

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.

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 personal call charge or to a special charge²⁾ fixed by agreement between the Administrations concerned. In this case the called subscriber may be informed that the charge he will have to pay will be the charge for personal calls or the charge for station calls plus a special charge.

9 For the sake of simplifying the telephone service and in view of the small proportion of personal calls requiring the dispatch of a messenger, Administrations are recommended not to apply a special surcharge. However, if Administrations wish to apply such a surcharge they should fix for themselves a uniform rate for all calls involving a messenger and inform the General Secretariat of the ITU so that this rate can be circulated 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.

²⁾ In certain European countries the special charge for station collect calls levied by Administrations is equal to the charge for two minutes of conversation.

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.

1.1.3 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.

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*.

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 SUBSCRIBERS

The text of this Recommendation can be found in Recommendation E.231¹⁾.

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 ABSENCE

The text of this Recommendation can be found in Recommendation E.232¹⁾.

¹⁾ These Recommendations were numbered E.203 and E.204 respectively in Volume II.2 of the *Orange Book*, Geneva, 1977.

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.

10.2 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.

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 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;

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*, Vol. II, Rec. E.151.

[2] CCITT Recommendation *Charging (Determination of collection charges) in the international telephone service*, Vol. II, Rec. E.230.

10.3 Procedures for remuneration of Administrations for facilities made available

Recommendation D.150

NEW SYSTEM FOR ACCOUNTING IN INTERNATIONAL TELEPHONY

(Mar del Plata, 1968)

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.

1.1.6 Annex A provides the explanation of terms used in this Recommendation.

1.2 Basic principles of a new system for accounting in international telephony

1.2.1 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.

1.2.2 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.

1.2.3 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.

1.3 Procedures

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

1.3.1 Remuneration of countries of destination

Administrations of countries of destination will be remunerated,

either by:

1.3.1.1 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:

1.3.1.2 the procedure whereby accounting revenue is shared between terminal Administrations (called the *accounting revenue division procedure*).

1.3.2 *Remuneration of transit countries*

Administrations of transit countries will be remunerated for facilities made available,

either by:

1.3.2.1 the *flat-rate price procedure* relating in the main to direct transit operations;

or by:

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

1.3.3 *Remuneration of the country of origin*

For the remuneration of the country of origin, see § 4 of this Recommendation.

1.4 *Traffic unit*

1.4.1 *Definition of the traffic unit – Conversation time*

It is recommended that, when the traffic-unit price procedure is used (see §§ 1.3.1.1 b) and 1.3.2.2 above), the traffic unit adopted for the purpose of remunerating other Administrations should be *one minute of conversation time*.

1.4.1.1 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.

1.4.1.2 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⁾ 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.

1.4.1.3 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.

1.4.1.4 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.

1.4.2 *Remarks*

1.4.2.1 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.

1.4.2.2 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.

1.4.2.3 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 §§ 1.4.2.1 and 1.4.2.2 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 extension²⁾.

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.

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 extension³⁾.

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 circuits⁴⁾ 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 concerned⁴⁾.

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 extension³⁾.

³⁾ 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.

⁴⁾ 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.

2.5.2 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.

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 § 1.4.2 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 D and may be used by originating Administrations subject to agreement of the Administrations concerned.

4 Remuneration of the Administration of the country of origin

As far as collect calls and credit card calls 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 in addition to the normal share relating to the call. The purpose of this flat-rate charge, the level of which is to be fixed by bilateral agreement, would be to cover the costs incurred in the country of origin for the establishment of the call.

5 Notes and examples

To assist in an understanding of the new procedures, the following four annexes are provided:

Annex A: Explanation of terms used in international telephone accounting.

Annex B: Differences between collection charges and accounting rates.

Annex C: Examples of the various procedures for remunerating Administrations.

Annex D: Traffic measurement conversions from seizures or erlangs into conversation time for temporary alternative routes.

ANNEX A

(to Recommendation D.150)

**Explanation of terms used in international
telephone accounting**

A.1 (telephone) relation

F: relation (téléphonique)

S: relación (telefónica)

A (telephone) relation between two terminal countries exists when there is between them an exchange of telephone traffic (and, normally, a settlement of accounts).

A.2 country (or Administration) of origin

F: pays (ou Administration) d'origine

S: país (o Administración) de origen

The country of origin is the country in which the calling subscriber is located.

A.3 country (or Administration) of destination

F: pays (ou Administration) de destination

S: país (o Administración) de destino

The country of destination is the country in which the called subscriber is located.

A.4 terminal country (or Administration)

F: pays (ou Administration) terminal(e)

S: país (o Administración) terminal

A terminal country is both a country of origin and a country of destination in a given relation.

A.5 transit country (or Administration)

F: pays (ou Administration) de transit

S: país (o Administración) de tránsito

A.5.1 A transit country is a country through which traffic is routed between two terminal countries.

A.5.2 direct transit country

F: pays de transit direct

S: país de tránsito directo

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

A.5.3 switched-transit country

F: pays de transit en commutation

S: país de tránsito con conmutación

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

A.6 international circuit

F: circuit international

S: circuito internacional

A.6.1 A circuit between two international exchanges situated in different countries is called an international circuit.

A.6.2 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.6.3 intercontinental circuit

F: circuit intercontinental

S: circuito intercontinental

An international circuit between two international exchanges in different continents.

A.7 national extension

F: prolongement national

S: prolongación nacional

A national extension is that part of the connection which extends from the national side of the international exchange to the subscribers.

A.8 Remuneration for shared use and exclusive use

A.8.1 remuneration for shared use of circuits and equipment

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

S: remuneración por utilización en común 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; or
- b) by a fixed amount covering a certain period of time and based on the estimated volume of traffic and its time characteristics.

A.8.2 remuneration for exclusive use of circuits

F: rémunération pour utilisation exclusive des circuits

S: remuneración por utilización exclusiva de los circuitos

A.8.2.1 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.8.2.2 For further clarification, it should be mentioned that:

- a) the general term "lease" (in French: *location*) used until now applies only to the case cited in § A.8.2.1 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.9 accounting rate

F: taxe de répartition

S: tasa de distribución

The accounting rate is the rate per traffic unit agreed between the Administrations for a given relation which is used for the establishment of international accounts.

A.10 collection charge

F: taxe de perception

S: tasa de percepción

The collection charge is the charge collected by an Administration from its public for the use of the international telephone service. The establishment of that charge is a national matter.

A.11 flat-rate price (per circuit) procedure

F: méthode de rémunération forfaitaire (par circuit)

S: procedimiento de remuneración a tanto alzado (por circuito)

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

A.12 traffic-unit price procedure

F: méthode de rémunération en fonction d'unités de trafic

S: procedimiento de remuneración en función de las unidades de tráfico

The traffic-unit price procedure is the procedure whereby remuneration of an Administration is based on traffic units.

A.13 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.

A.14 accounting revenue division procedure

F: méthode de division des recettes de répartition

S: procedimiento de división de los ingresos de distribución

The accounting revenue division procedure is the procedure whereby accounting revenue is shared only between terminal Administrations.

ANNEX B

(to Recommendation D.150)

**Differences between collection charges
and accounting rates**

B.1 The collection charge is the charge collected by an Administration from its public for the use of the international telephone service.

B.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.

B.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.

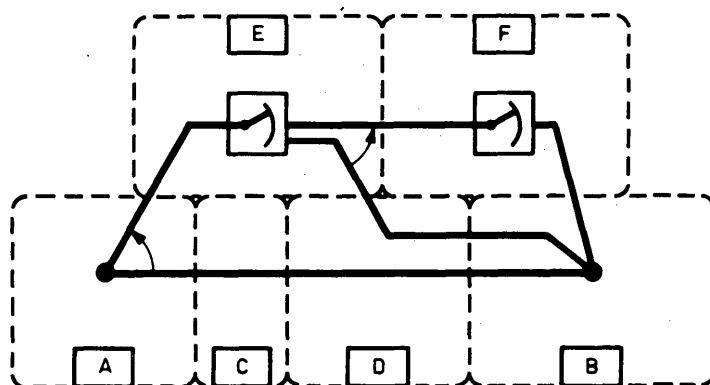
B.4 As a general principle, in fixing the collection charges, Administrations should make every effort to avoid too large a dissymmetry between the charges applicable in each direction of the same relation.

(to Recommendation D.150)

**Examples of the various procedures
for remunerating Administrations**

C.1 General

C.1.1 The diagram in Figure C-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 C-1/D.150

Typical pattern of circuit interconnections between various countries

C.1.2 Three basic situations are examined in relation to use of Recommendation D.150:

C.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.

C.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.

C.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.

C.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.

C.2 Case 1 – Use of the accounting revenue division procedure for all traffic

C.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.

C.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.

C.2.3 *Switched-transit traffic handled by the exchange in E*

C.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.

C.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.

C.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.

C.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 § C.4 below.

C.3 Case 2 – Use of traffic-unit and/or flat-rate price procedure for all traffic

C.3.1 Traffic on direct circuits

C.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.

C.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.

C.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.

C.3.2 Switched-transit traffic handled by the exchange in E

C.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.

C.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.

C.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

C.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.

C.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 § C.2.1 above.

C.4.3 Switched-transit traffic handled by the exchange in E

C.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 § C.3.2 above.

C.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 D

(to Recommendation D.150)

**Traffic measurement conversions from seizures or erlangs
into conversation time for temporary alternative routes**

D.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:

Conversation time = (Seizures) × (Answer/seizure ratio) × (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.

D.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*, Vol. II, Rec. E.230.
- [2] CCITT Recommendation *Basic technical problems concerning the measurement and recording of call durations*, Vol. II, Rec. E.260.
- [3] CCITT Recommendation *The international telephone routing plan*, Vol. II, 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.

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.

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.152

**MODE OF APPLICATION OF THE FLAT-RATE PRICE PROCEDURE
SET FORTH IN RECOMMENDATION D.150 FOR REMUNERATION OF
FACILITIES MADE AVAILABLE TO THE ADMINISTRATIONS OF OTHER COUNTRIES**

(Geneva, 1976)

1 Introduction

1.1 The general procedures for remuneration of Administrations for facilities made available are given in Recommendation D.150. 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;
- 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 Recommendation 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:

Date of availability: 24 June

Charging: from 2 July

Date of availability: 10 July

Charging: 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.152.

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.

TABLE 1/D.152

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 + $\frac{16}{30}$ 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 + $\frac{15}{30}$ of this rental
4 January-10 February 4 January not counted 5-31 January = 27 days 1-10 February = 10 days	37 days	$\frac{37}{30}$ of monthly rental

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 + $\frac{2}{24}$ day) i.e. 5 chargeable days.

The remuneration shall be equal to $\frac{1}{30}$ th of the monthly rental for each day of the period of availability¹⁾.

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.

¹⁾ 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 $\frac{2}{30}$ ths of the monthly rental.

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.

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.

**GUIDING PRINCIPLES GOVERNING THE APPORTIONMENT OF
ACCOUNTING RATES IN INTERCONTINENTAL TELEPHONE RELATIONS ¹⁾**

(Malaga-Torremolinos, 1984)

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;
- 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 ²⁾

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 either to reach agreement with the transit Administration with a view to remunerating it by drawing on the terminal share of the Administration of origin or to negotiate with the terminal Administration of destination an equitable allocation, in principle on a 50/50 basis, of the remainder of the accounting rate after deduction of the share due to the transit Administration.

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.

¹⁾ The study of this Recommendation should be continued during Study Period 1985-1988.

²⁾ Belgium and Italy have expressed reservations concerning the application of § 1.3 of this Recommendation.

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.

10.4 Establishment and exchange of international telephone accounts

Recommendation D.170

MONTHLY TELEPHONE ACCOUNTS

The following arrangements are recommended for the drawing up, exchange and acceptance of monthly telephone accounts between Administrations.

1 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;
- b) sound- and television-programme and phototelegraph transmissions — Forms 1 or 2, suitably adapted.

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.

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.

In accordance with the *Telephone Regulation* [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.

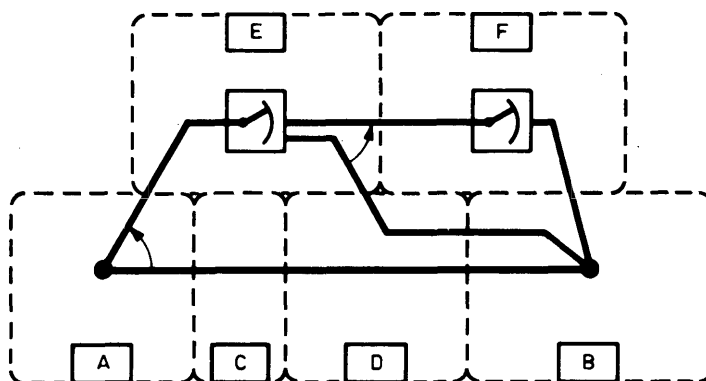
2 Accounts in international relations where Recommendation D.150 applies

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 C 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 C 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 Recommendation D.150 does not apply

3.1 The following provisions apply to certain international relations to which Recommendation D.150 does 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 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 call as an outgoing call for the purpose of international accounting.

4.3.2 Collect 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 Amounts in payment for telephone directories may be included in the monthly telephone account, or may, by arrangement, be the subject of a separate account which should be established at least once a year.

4.7 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.

5 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 the following table (where references to gold francs should be read as applying equally to other accounting units):

<i>Amount of the account</i>	<i>Difference exceeding</i>
a) less than 10 000 gold francs or 3267 SDR	100 gold francs or 32.67 SDR
b) from 10 000 to 300 000 gold francs from 3267 to 98 000 SDR	} 1% of the sum of the accounts
c) more than 300 000 gold francs or 98 000 SDR	
	3000 gold francs or 980 SDR

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.

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.

6 Adjustments and refunds

For the accounting procedure in the case of adjustments and refunds see Recommendation D.171.

7 Checks of accounting data

Data relating to Forms 1 or 2 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.

8 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.

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		Gross 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.

References

- [1] *Final Acts of the World Administrative Telegraph and Telephone Conference, Telegraph Regulations, Telephone Regulations, Article 8 of the Telephone Regulations, ITU, Geneva, 1973.*

ADJUSTMENTS AND REFUNDS

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 be borne by the Administration which levied the charge for the call in question. This provision does not cover the case of a collect call when the subscriber to whom it is charged claims that it was an ordinary call or that of an ordinary call when the caller to whom it is charged claims that it was a collect call. In both cases the international accounts may be adjusted subject to the consent of the Administrations concerned.

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.

**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.

1.2 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.

¹⁾ The term "Reversed Charge" is used to mean collect, credit card and third number paying calls.

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;

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	Reversed charge type code	1	—	—	1. Collect 2. Credit card 3. Third party paying 4. Collect pay phone
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
6	Rate level 1	1	—	—	1. Personal rate 2. Station rate
7	Rate level 2	1	—	—	1. Full rate 2. Reduced rate A ^{a)} 3. Reduced rate B ^{a)}

^{a)} For telephone only.

A.2 Detail record (end)

Item number	Contents	Field size	Justification	Fill	Comments
8	Charged duration	3	Right	Zero	Time to be paid for. 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	16	Left	Space	National (significant) number or credit card number use when charges are not to called number (item 4)
11	Additional charges	1	-	-	Additional charges to be collected: ADC (advice of duration of call) Space to fill to indicate no additional charge
12	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.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 detail 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.

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.

SECTION 11

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.

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.

¹⁾ Any reference to broadcasting organizations in this Recommendation applies equally to other users.

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 and maintaining international television connections and for the supervision of the transmissions made on them.

The centre at the end of a 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 transmissions.

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⁾ More than one such sound-programme circuit may be required for association with a single television circuit.

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.

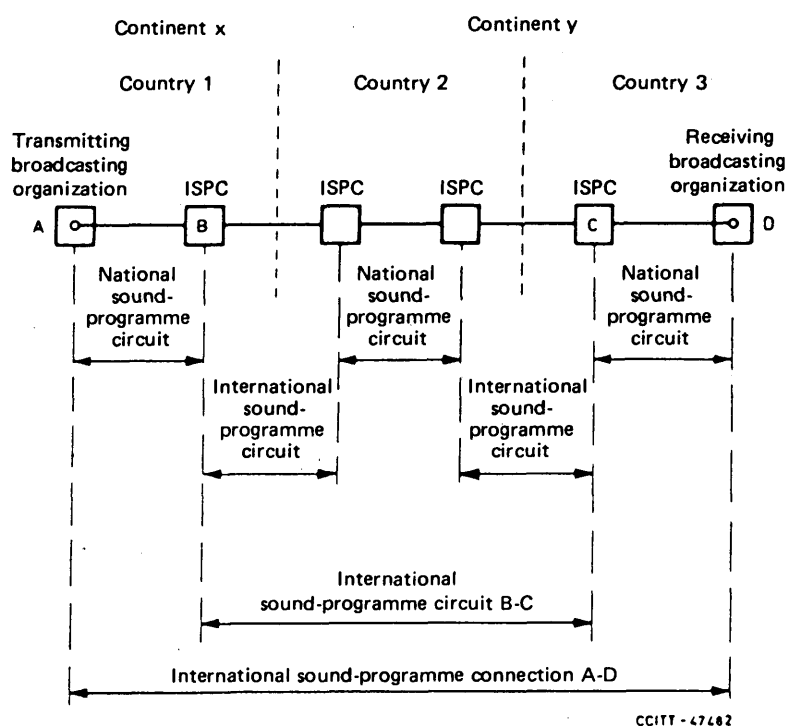


FIGURE 1/D.180

Example of an international sound-programme connection

³⁾ More than one such control circuit may be required for association with a single television circuit.

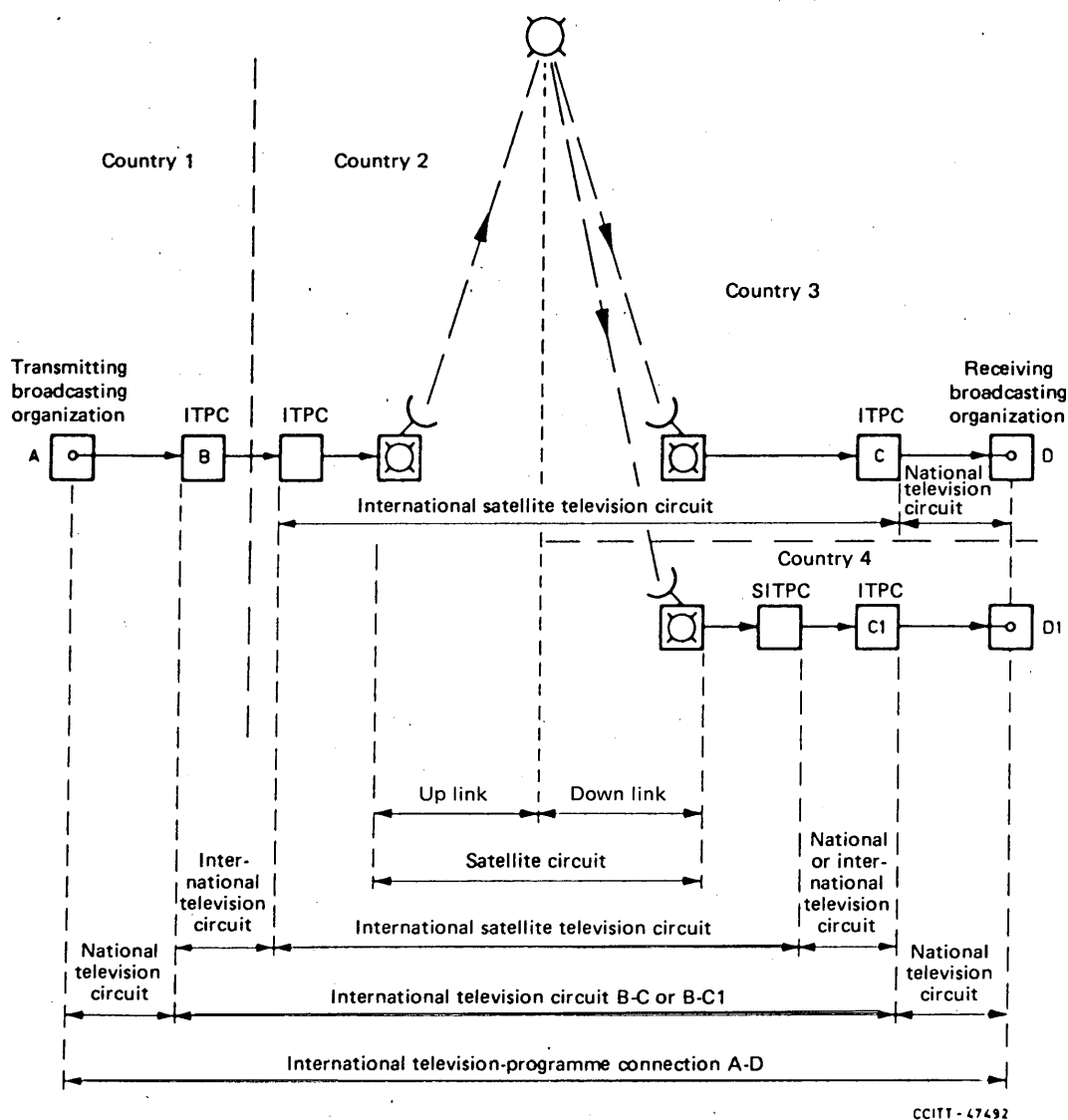


FIGURE 2/D.180

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 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 transmission 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 and control circuits provided by means of satellite channels specially assigned for use in association with television transmissions but not necessarily to other sound circuits provided via the satellite or to sound 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 transmission, 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 transmission 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 facilities and 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 a transmission, 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.

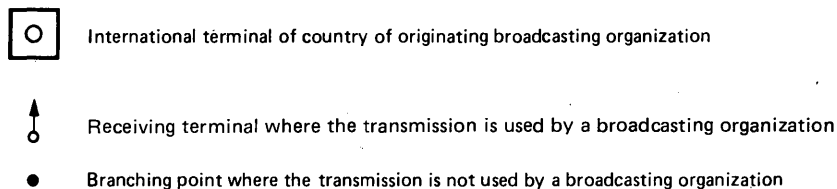
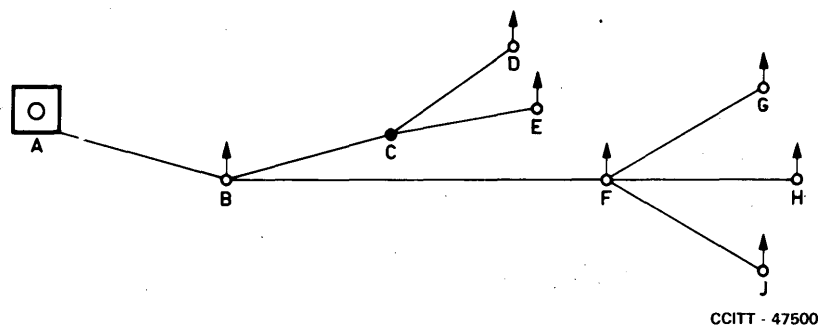


FIGURE 3/D.180

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 circuits used in sound- and television-programme transmissions.

5.1.9 The same charge should apply in principle to 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 television-programme transmissions, 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 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 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 transmission on the planned route, or causes an interruption in a transmission, 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.

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 transmission to be separately identified.

6.3 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 transmissions 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 12

TRANSMISSION OF MONTHLY INTERNATIONAL ACCOUNTING INFORMATION

Recommendation D.190

TRANSMISSION IN ENCODED FORM OF MONTHLY INTERNATIONAL ACCOUNTING INFORMATION

(Geneva, 1976)

1 Introduction

1.1 Under the provisions of Recommendations D.170, F.42 [1] and F.67 [2] 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.170 – telephone; F.67 [2] – telex; F.42 [1] – telegram). 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 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 [3]), 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 <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	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 date	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 [4] telegram country codes (and city codes if required). Use for telegram, telex and telephone services.
2	Destination	4	Left	Space	
3	Route in	2	Left	Space	
4	Route out	2	Left	Space	
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	-	-	<p><i>For telephone</i></p> <p>1. Telephone.</p> <p>2. Sound programme</p> <p>3. Television - video</p> <p>4. Television - sound</p> <p>5. Transit rentals</p> <p><i>For telex</i></p> <p>1. Telex</p> <p><i>For the telegraph service</i></p> <p>1. Telegraph</p> <p><i>For Facsimile</i></p> <p>1. Phototelegraph</p> <p>2. Bureau fax service</p> <p><i>For switched data</i></p> <p>1. Packet switching</p> <p>2. Circuit switching</p>
8	Rate level 1	1	-	-	<p><i>Telephone</i></p> <p>1. Personal rate</p> <p>2. Station rate</p> <p>3. International subscriber dialling rate</p> <p><i>Sound programme</i></p> <p>1. Medium passband</p> <p>2. Wide passband</p> <p><i>Telegraph</i></p> <p>Recommendation F.31 [3] tariff class indicator</p> <p><i>Phototelegraph</i></p> <p>1. Public station to public station</p> <p>2. Public station to private station</p> <p>3. Private station to public station</p> <p>4. Private station to private station</p> <p><i>Bureau fax</i></p> <p>1. A4 size page</p> <p>2. Other size page</p> <p><i>Switched data</i></p> <p>1. Segment</p>

A.2 Detail record

Item number	Contents	Field size	Justification	Fill	Comments
9	Rate level 2	1	—	—	For telephone or telex 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	To be used for packet switching data only
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. Mobile station charges – all services ^{b)} 5. 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.

^{b)} For use until mobile station charges are abolished.

A.3 Batch trailer

Item number	Contents	Field size	Justification	Fill	Comments
1	Record type identifier	3	—	—	Always <u>TRL</u>
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” fill as appropriate.

References

- [1] CCITT Recommendation *Charging, accounting and refunds in the international public telegram service*, Vol. II, Rec. F.42.
- [2] CCITT Recommendation *Charging and accounting in the international telex service*, Vol. II, Rec. F.67.
- [3] CCITT Recommendation *Telegram transmission system*, Vol. II, Rec. F.31.
- [4] CCITT Recommendation *List of destination indicators*, Vol. II, Rec. F.96.

SECTION 13

SETTLEMENT OF INTERNATIONAL TELECOMMUNICATION BALANCES OF ACCOUNTS

Recommendation D.195

SETTLEMENT OF INTERNATIONAL TELECOMMUNICATION BALANCES OF ACCOUNTS

(Geneva, 1980)

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,

having noted

the Resolution 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, 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,

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).

PART II

Recommendations D.200 R to D.501 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 APPLICABLE TO THE AFRICAN REGION

Recommendation D.200 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.

An explanation of some of the terms used in this Recommendation is given in § 1 below.

1 Explanation of some of the terms used in this Recommendation

1.1 (telephone) relation

F: relation (téléphonique)

S: relación (telefónica)

A (telephone) relation between two terminal countries exists when there is between them an exchange of telephone traffic (and, normally, a settlement of accounts).

1.2 country (or Administration) of origin

F: pays (ou Administration) d'origine

S: país (o Administración) de origen

The country of origin is the country in which the calling subscriber is located.

1.3 country (or Administration) of destination

F: pays (ou Administration) de destination

S: país (o Administración) de destino

The country of destination is the country in which the called subscriber is located.

1.4 terminal country (or Administration)

F: pays (ou Administration) terminal(e)

S: país (o Administración) terminal

A terminal country is both a country of origin and a country of destination in a given relation.

1.5 transit country (or Administration)

F: pays (ou Administration) de transit

S: país (o Administración) de tránsito

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

1.5.1 direct transit country

F: pays de transit direct

S: país de tránsito directo

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

1.5.2 switched transit country

F: pays de transit en commutation

S: país de tránsito con conmutación

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

1.6 international circuit

F: circuit international

S: circuito internacional

A circuit between two international exchanges situated in different countries is called an international circuit.

1.7 national extension

F: prolongement national

S: prolongación nacional

A national extension is that part of the connection which extends from the national side of the international exchange to the subscriber.

1.8 accounting rate

F: taxe de répartition

S: tasa de distribución

The accounting rate is the rate per traffic unit agreed between the Administrations in a given relation, which is used for the establishment of international accounts.

1.9 accounting rate share

F: quote-part de répartition

S: parte alícuota de distribución

The accounting rate share is that part of the total accounting rate per traffic unit (minute of telephone call) corresponding to the facilities made available in each country; this share is fixed by agreement among the Administrations.

1.10 collection charge

F: taxe de perception

S: tasa de percepción

The collection charge is the charge in its national currency collected by an Administration from its customers for the use of the international service. The establishment of the charge is a national matter.

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

Manual operation

$$0.60^a) \times 35\,000^b) \\ = 21\,000 \text{ gold francs}$$

Automatic operation

$$0.46^a) \times 40\,000^c) \\ = 18\,400 \text{ gold francs}$$

3) For the national extension

- per year and per international circuit connected

Manual operation

$$PN^d) \times 35\,000^b)$$

Automatic operation

$$PN^d) \times 40\,000^c)$$

^{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 (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 (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	1.12
>4000 km (5000 km)	2.86	8.00	10.86	3.20	8.96	12.16	

^{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.200 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		Semiautomatic 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.200 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)
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.200 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	$0.60^a) \times 35\,000^b) =$ 21 000 gold francs	$0.46^a) \times 40\,000^c) =$ 18 400 gold francs	$PN^d) \times 35\,000^b)$	$PN^d) \times 40\,000^c)$
Group	40 000 gold francs				
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.200 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 above, 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.201 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 § 1 of Recommendation D.200 R.

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:

2.3.1.1 Remuneration of the international network in semi-automatic and automatic operation

- | | | |
|---|--|--------------------------------|
| — | <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) | 2 gold centimes ^{a)} |
| — | for the semi-automatic international exchange in the country of origin: | |
| | operating cost | c) gold centimes |
| | switching cost | c) gold centimes ^{b)} |
| | Total | 50 gold centimes |
| — | for the automatic international exchange in the country: | |
| | of origin | 32 gold centimes ^{b)} |
| | of destination | 32 gold centimes ^{b)} |
| — | for an automatic international exchange in a transit country | 50 gold centimes ^{b)} |

a) Where, in order to establish a telex circuit, telegraph channels are connected in a direct transit country, an additional charge of 10 gold centimes shall be made for the translating equipment used to connect them.

b) This share includes the cost of the transmission equipment for one extremity in terminal operation and for two extremities in transit operation.

c) These amounts will be provided when the next cost study is made.

2.3.1.2 Remuneration of the national extension

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 its country for each relation concerned. It is recommended that as a general rule this amount should not exceed 80 gold centimes per minute. This amount is considered as covering the costs of accounting operations as well as the costs of switching and transmission over the national extension.

2.3.2 Remuneration on the basis of a 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; however, these rates represent a maximum which Administrations undertake not to exceed:

	Per year and per 100 km of transmission channel (line part)
— per 50-baud telegraph channel	400 gold francs ^{a)}
— per VFT bearer circuit	4000 gold francs

a) Where, in order to establish a circuit, two telegraph channels 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, i.e. $1000 \times 2 = 2000$ gold francs, irrespective of the number of such connections in the direct transit country.

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 above.

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.201 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.201R

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 (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.201 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	Semiautomatic 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.201 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.201 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	400 gold francs	$0.32 \times 25\,000^a) = 8000$ gold francs ^{b)}	$PN^c) \times 25\,000^a)$
VFT bearer	4000 gold francs	Not applicable	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.

(to Recommendation D.201 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 above, 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.206 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.

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SECTION 2

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.

The standard rates given in this Recommendation are expressed in gold francs but, in accordance with Article 30 of the *International Telecommunication Convention*, Nairobi, 1982, these rates may be established in either gold francs or the monetary unit of the International Monetary Fund (IMF), the Special Drawing Right (SDR). To calculate the amount in SDRs, the conversion rate 1 SDR = 3.061 gold francs should be applied to the gold franc values given in this Recommendation. The amounts thus obtained should normally be expressed to at least three significant figures.

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 § 1 of Recommendation D.200 R.

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

- *per 100 km* of international circuit (excluding any national circuit required for connecting the international exchange to the national exchange serving the subscriber) 4 gold centimes ^{a)}
- for the manual international exchange in the country of origin or destination 200 gold centimes ^{b)}
- for a manual international exchange in a transit country 200 gold centimes ^{b)}

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) 2 gold centimes ^{a)}
- for the semi-automatic international exchange in the country of origin 180 gold centimes ^{b)}
- for the automatic international exchange in the country of origin . . . 18 gold centimes ^{b)}
- for the automatic and semi-automatic international exchange in the country of destination (including code 11 and 12 operator service) . . 11 gold centimes ^{b)}
- for an automatic international transit exchange (in a transit country) . 16 gold centimes ^{b)}

^{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) 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,

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.

- 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: 40 gold centimes;
- b) for incoming traffic: 35 gold centimes.

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)
– for a telephone circuit	1 200 gold francs ^{a), b)}
– for a group	12 000 gold francs ^{a), b)}
– for a supergroup	50 000 gold francs ^{a), b)}
– for a mastergroup	200 000 gold francs ^{b)}
– for a supermastergroup	550 000 gold francs ^{b)}

^{a)} To allow for the small capacity of some submarine cables, a correction factor may be applied to these rates.

^{b)} Including, wherever applicable, use of modulation and demodulation equipments 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 rates in § 2.4.2.1.1 above.

The same rule applies to the lease to a private user of groups, supergroups, etc.

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.

2.4.2.2 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
— for a telephone circuit	1 200 gold francs ^{a)}
— for a group	12 000 gold francs ^{a)}
— for a supergroup	50 000 gold francs ^{a)}
— for a mastergroup	200 000 gold francs
— for a supermastergroup	550 000 gold francs

^{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:

Manual operation	Automatic operation
$2.00^a) \times 30\,000^b)$	$0.11^a) \times 65\,000^c)$
= 60 000 gold francs	= 7 150 gold francs

3) For the national extension

— per year and per international circuit connected:

Manual operation	Automatic operation
$PN^d) \times 30\,000^b)$	$PN^d) \times 65\,000^c)$

^{a)} The cost of the transmission equipment for one extremity is included in the amounts of 2.00 gold francs and 0.11 gold francs.

^{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:

- 30 000 gold francs for a supermastergroup;
- 16 000 gold francs for a mastergroup;
- 6 700 gold francs for a supergroup;
- 3 200 gold francs for a group;
- 1 300 gold francs 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.

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		Semiautomatic 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)}
Outgoing	4 gold centimes	200 gold centimes	2 gold centimes	180 gold centimes	2 gold centimes	18 gold centimes
Incoming	4 gold centimes	200 gold centimes	2 gold centimes	11 gold centimes	2 gold centimes	11 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) ^{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)}
4 gold centimes	2 gold centimes	4 gold centimes	200 gold centimes	2 gold centimes	16 gold centimes

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 (<i>line</i> part)
	Rates per 100 km per annum (in gold francs)
Telephone circuit	1 200 ^{b) c)}
Group	12 000 ^{b) c)}
Supergroup	50 000 ^{b) c)}
Mastergroup	200 000 ^{c)}
Supermastergroup	550 000 ^{c)}

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, wherever applicable, use of modulation and demodulation equipments or throughband filters in the direct transit country.

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
		per year	per year	per year	per year
Circuit	1 200 gold francs ^{a)}	$2.00^b \times 30\,000^c =$	$0.11^b \times 65\,000^d =$	$PN^e \times 30\,000^c$	$PN^e \times 65\,000^d$
Group	12 000 gold francs ^{a)}	60 000 gold francs ^{a)}	7150 gold francs ^{a)}		
Supergroup	50 000 gold francs ^{a)}	} not applicable	not applicable	not applicable	not applicable
Mastergroup	200 000 gold francs				
Supermastergroup	550 000 gold francs				

^{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 2.00 and 0.11 gold francs and was based on annual costs of 1300 gold francs for a circuit, which amount includes an allowance for the terminal equipment of a group (3200 gold francs) and supergroup (6700 gold francs).

^{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 station ⁴⁾:

- in accordance with the standard rates set out in § 2.4.2.2, 1) of this Recommendation, 1200 gold francs 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:

- 35 000 gold francs per telephone-type circuit per annum as from 1 January 1985;
- 30 000 gold francs per telephone-type circuit per annum as from 1 January 1987.

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):
 - 54 gold centimes from 1 January 1985;
 - 46 gold centimes from 1 January 1987;
- for the space segment: 23 gold centimes.

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.

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.

(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.

Recommendation D.301 R

**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.

¹⁾ Countries in the Mediterranean Basin are countries not belonging to Europe but bordering the Mediterranean Sea.

The standard rates given in this Recommendation are expressed in gold francs but, in accordance with Article 30 of the *International Telecommunication Convention*, Nairobi, 1982, these rates may be established in either gold francs or the monetary unit of the International Monetary Fund (IMF), the Special Drawing Right (SDR). To calculate the amounts in SDR, the conversion rate 1 SDR = 3.061 gold francs should be applied to the gold franc values given in this Recommendation. The amounts thus obtained should normally be expressed to at least three significant figures.

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 § 1 of Recommendation D.200 R.

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.

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

- *per 100 km* of international circuit (excluding any national circuit required for connecting the international exchange to the national exchange serving the subscriber) a) gold centimes^{b)}
- for the manual international exchange in the country of origin or destination 250 gold centimes^{b), c)}
- for a manual international exchange in a transit country 250 gold centimes^{b), c)}

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) a) gold centimes^{b)}
- for the semi-automatic international exchange in the country of origin: 240 gold centimes^{b)}
- for the automatic international exchange in the country of origin 9 gold centimes^{b), c)}
- for the automatic international exchange in the country of destination 9 gold centimes^{b), c)}
- for an automatic international exchange in a transit country 12 gold centimes^{b), c)}

^{a)} The rate for the *line* element was calculated at 0.26 and 0.115 gold centimes 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: 27 gold centimes;
- b) for incoming traffic: 25 gold centimes.

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)
– per telegraph channel (VFT or TDM)	50 bauds	45 gold francs ^{a), b)}
	100 bauds	90 gold francs ^{a), b)}
	200 bauds	180 gold francs ^{a), b)}
	300 bauds	210 gold francs
– per telegraph carrier circuit		1200 gold francs ^{a), b)}

^{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 channels 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:

- $660 \times 2 = 1320$ gold francs for a 50-baud circuit,
- $900 \times 2 = 1800$ gold francs for a 100-baud circuit,
- $1350 \times 2 = 2700$ gold francs for a 200-baud circuit,
- $2200 \times 2 = 4400$ gold francs for a 300-baud circuit.

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.

2.3.2.1.2 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
— per telegraph channel (VFT or TDM)	50 bauds	(see ^{a)} below)
	100 bauds	90 gold francs ^{b)}
	200 bauds	180 gold francs ^{b)}
	300 bauds	210 gold francs ^{b)}
— per telephone carrier circuit		1200 gold francs ^{b)}

2) For the international exchange (including terminal transmission equipment)

- per year and per 50-baud international circuit connected:

Manual operation	Automatic operation
$2.50^c) \times 18\,000^d)$	$0.09^c) \times 40\,000^e)$
= 45 000 gold francs	= 3600 gold francs

3) For the national extension

- per year and per 50-baud international circuit connected:

Manual operation	Automatic operation
$PN^f) \times 18\,000^d)$	$PN^f) \times 40\,000^e)$

^{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 2.50 and 0.09 gold francs.

^{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:

- 660 gold francs per 50-baud telegraph channel,
- 900 gold francs per 100-baud telegraph channel,
- 1350 gold francs per 200-baud telegraph channel,
- 2200 gold francs 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 660 gold francs 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.

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)}
Outgoing	gold centime ^{b)}	250 gold centimes ^{b)}	gold centime ^{b)}	240 gold centimes ^{b)}	gold centime ^{b)}	9 gold centimes ^{b)}
Incoming	gold centime ^{b)}	250 gold centimes ^{b)}	gold centime ^{b)}	9 gold centimes ^{b)}	gold centime ^{b)}	9 gold centimes ^{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)}
gold centime ^{b)}	250 gold centimes ^{b)}	gold centime ^{b)}	12 gold centimes ^{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 some 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 0.26 and 0.115 gold centimes 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 (<i>line</i> part)
	Rates per 100 km per annum (in gold francs)
Telegraph carrier circuit	1200 ^{a) b)}
Telegraph channel {	50 bauds 45 ^{a) c)}
	100 bauds 90 ^{a) c)}
	200 bauds 180 ^{a) c)}
	300 bauds 210 ^{a) c)}

- a) To allow for the small capacity 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 throughband 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 :
- 660 × 2 = 1320 gold francs for a 50-baud circuit,
 - 900 × 2 = 1800 gold francs for a 100-baud circuit,
 - 1350 × 2 = 2700 gold francs for a 200-baud circuit,
 - 2200 × 2 = 4400 gold francs 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
		per year	per year	per year	per year
Per international telegraph circuit :	a)				
– 50 bauds.....	90 gold francs	$2.50^b \times 18\,000^c = 45\,000$ gold francs ^{b)}	$0.09^b \times 40\,000^d = 3\,600$ gold francs ^{b)}	$PN^e \times 18\,000^c$	$PN^e \times 40\,000^d$
– 100 bauds	180 gold francs	not applicable	not applicable	not applicable	not applicable
– 200 bauds	210 gold francs				
– 300 bauds					
Per telegraph carrier circuit	1200 gold francs				

a) Included in the international exchange price [see footnote b) of Annex A].

b) The cost of telex terminal transmission equipment for one extremity is included in the amounts of 2.50 and 0.09 gold francs.

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:

		From 1 January 1985	From 1 January 1987
— per telegraph channel (VFT or TDM) per annum	50 bauds	1 300 gold francs	1 100 gold francs
	100 bauds	2 500 gold francs	2 100 gold francs
	200 bauds	5 000 gold francs	4 000 gold francs
	300 bauds	5 900 gold francs	5 000 gold francs
— per telegraph carrier circuit per annum		35 000 gold francs	30 000 gold francs

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	

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:

- 4.3 gold centimes per minute from 1 January 1985⁵⁾;
- 3.8 gold centimes per minute from 1 January 1987⁵⁾.

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.

³⁾ Part of the circuits provided at the expense of the Administration operating the earth station.

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.

The standard rates given in this Recommendation are expressed in gold francs but, in accordance with Article 30 of the *International Telecommunication Convention* (Nairobi, 1982), these rates may be established in either gold francs or the monetary unit of the International Monetary Fund (IMF), the Special Drawing Right (SDR). To calculate the amounts in SDR, the conversion rate 1 SDR = 3.061 gold francs should be applied to the gold franc values given in this Recommendation. The amounts thus obtained should normally be expressed to at least three significant figures.

An explanation of some of the terms used in the Recommendation is given in § 1 below.

1 Explanation of some of the terms used in this Recommendation

1.1 relation (international public telegram service)

F: relation (service télégraphique public international)

S: relación (servicio público internacional de telegramas)

A relation between two terminal countries exists when telegrams are exchanged between them (and, normally, accounts are settled).

1.2 country (or Administration) of origin

F: pays (ou Administration) d'origine

S: país (o Administración) de origen

The country of origin is the country in which the telegram is handed in.

1.3 country (or Administration) of destination

F: pays (ou Administration) de destination

S: país (o Administración) de destino

The country of destination is the country in which the telegram is to be delivered.

1.4 terminal country (or Administration)

F: pays (ou Administration) terminal(e)

S: país (o Administración) terminal

A terminal country is both a country of origin and a country of destination of a telegram.

¹⁾ Countries in the Mediterranean Basin are countries not belonging to Europe but bordering the Mediterranean Sea.

1.5 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.

1.6 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).

1.7 accounting rate

F: taxe de répartition

S: tasa de distribución

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 service, agreed between the Administrations in a given relation, and used for the establishment of international accounts.

In the binary tariff system, the accounting rate is the fixed rate per ordinary private telegram without any special service plus the rate per word of such a telegram, both rates being agreed between Administrations in a given relation and being used for the establishment of international accounts.

1.8 accounting rate share

F: quote-part de répartition

S: parte alicuota de distribución

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

1.9 terminal share

F: quote-part terminale

S: parte alicuota terminal

The terminal share is that part of the accounting rate which is due to a terminal country.

1.10 transit share

F: quote-part de transit

S: parte alicuota de tránsito

The transit share is that part of the accounting rate which is due to a country through which traffic is routed between two terminal countries.

1.11 collection charge

F: taxe de perception

S: tasa de percepción

The collection charge is the charge in its national currency collected by an Administration from its customers for the use of the international service. The establishment of the collection charge is a national matter.

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 1.11 gold francs and that in the binary tariff system the cost price per terminal country is 15 gold francs for the fixed charge of a telegram and 0.55 gold francs 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.

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:

- 60 gold centimes from 1 January 1985;
- 70 gold centimes from 1 January 1987;
- 80 gold centimes from 1 January 1989.

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 | | 1.2 gold centimes |
| – manual transit | { | |
| | from 1 January 1985 | 38 gold centimes |
| | from 1 January 1987 | 44 gold centimes |
| | from 1 January 1989 | 50 gold centimes |
| – 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⁾ Administrations providing this service indicate the shares they apply for the use of their telegram retransmission centre in the *Table of Telegraph Rates* [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).

2.1.2.2 *Terminal shares*

The shares due to each terminal country for ordinary private telegrams without any special service:

— fixed rate per telegram	{	from 1 January 1985	7.5 gold francs
		from 1 January 1987	9.5 gold francs
		from 1 January 1989	11.5 gold francs
— rate per word	{	from 1 January 1985	30 gold centimes
		from 1 January 1987	35 gold centimes
		from 1 January 1989	40 gold centimes

These shares were established on the assumption of an average number of 27 words per telegram.

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:

- in most countries, collection charges and accounting rates will be expressed in different currencies;
- the value of national currencies may fluctuate in relation to the SDR or the gold franc;
- the collection charges may be based on the per word tariff system and the accounting rate on the binary system or vice versa;
- collection charges may be influenced by government fiscal policies;
- 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 Telegraph Rates*, 2nd edition, ITU, Geneva, 1981.
- [2] *Final Acts of the World Administrative Telegraph and Telephone Conference — Telegraph Regulations, Telephone Regulations*, ITU, Geneva, 1973.

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.

¹⁾ Countries in the Mediterranean Basin are countries not belonging to Europe but bordering the Mediterranean Sea.

The standard rates given in this Recommendation are expressed in gold francs but, in accordance with Article 30 of the *International Telecommunication Convention* (Nairobi, 1982) these rates may be established in either gold francs or the monetary unit of the International Monetary Fund (IMF), the Special Drawing Right (SDR). To calculate the amounts in SDR, the conversion rate 1 SDR = 3.061 gold francs should be applied to the gold franc values given in this Recommendation. The amounts thus obtained should normally be expressed to at least three significant figures.

An explanation of some of the terms used in this Recommendation is given in Recommendation D.180.

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 (SPC)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.

²⁾ In some countries the distance is measured to the studio and not to the ISPC.

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.

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 transmission):*
 - in a terminal country 90 gold francs
 - in a transit country having an interconnection point (whatever the number of interconnection points in that country) 90 gold francs
- 2) *Rate for terminal equipment in a terminal country, per minute:*
 - 10 kHz or 15 kHz circuit 2 gold francs
 - narrow-band (telephone-type) circuit telephone rate⁴⁾
 - stereophonic pair 4 gold francs
- 3) *Rate for interconnection equipment in a transit country, per minute⁵⁾:*
 - 10 kHz or 15 kHz circuit 3.20 gold francs
 - narrow-band (telephone-type) circuit telephone rate⁴⁾
 - stereophonic pair 6.40 gold francs
- 4) *Rate per 100 km of international circuit, per minute, for the provision of:*
 - a 10 kHz or 15 kHz circuit 0.40 gold franc
 - a narrow-band (telephone-type) circuit telephone rate⁴⁾
 - a stereophonic pair 1 gold franc

³⁾ In some countries the distance is measured to the studio and not to the ITPC.

⁴⁾ The charges given in 2), 3) and 4) of § 1.3.1 are combined to form a single rate equivalent to the telephone rate of the relation considered.

⁵⁾ Usually only one interconnection point is remunerated per transit country.

- 5) *Fixed surcharge per transmission 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:*

— in a terminal country	30 gold francs
— in a transit country when there is interconnection	30 gold francs

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) of § 1.3.1 above.

- 6) *Any special expenses per transmission 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 sound-programme transmissions are given in Annex B.

Note 1 — The minimum chargeable duration 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 transmission given in 5) of § 1.3.1 above is 60 gold francs.

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:

- 1) *Fixed rate for preparation and operation of television circuits (per transmission):*

— in a terminal country	150 gold francs
— in a transit country having an interconnection point (whatever the number of interconnection points in that country)	150 gold francs
- 2) *Rate for terminal equipment in a terminal country, per minute* 10 gold francs
- 3) *Rate for interconnection equipment and operation in a transit country, per minute⁶⁾* 17 gold francs
- 4) *Rate per 100 km of international circuit, per minute of transmission* 15 gold francs
- 5) *Any special expenses per transmission for provision of national extensions beyond the ITPC and for setting up and clearing down temporary extensions*

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.

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 television-programme transmissions are given in Annex B.

⁶⁾ Usually only one interconnection point is remunerated per transit country.

Note 1 – The minimum chargeable duration 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 of transmission. 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:

- a) 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 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 Intercontinental sound-programme transmissions effected over narrow-band circuits are subject to the same charging rules as those governing European continental transmissions, namely, application of:

- a) the fixed rate for preparation and operation,
- b) the fixed surcharge per transmission 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 for 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 for the provision of earth station facilities for occasional television services via satellite showed that the costs were higher than the charges generally applied. As a result it was decided to recommend that the charges for the terrestrial services should be increased and the new rates are shown in Annex A to this Recommendation.

For the service via satellite, the study showed that the cost per minute for earth station facilities was of the order of 120 gold francs compared with average charges per minute of between 82-119 gold francs (based on tariffs of 1700/50 gold francs and 2300/80 gold francs and for an average duration of 38 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 1982, space segment charges were \$ 8 per minute (approximately 23 gold francs) and the charge for the terrestrial circuit based on an average distance of 400 km would be 73.6 gold francs at 1985-recommended levels.

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. It is therefore recommended that staged increases should be applied with effect from 1 January 1985.

For multi-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.

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 pro- gramme circuit
	Narrow-band (telephone-type circuit)		Wide- band at approx- imately 10 kHz)	Estab- lished on a television channel sub- carrier	Very wide- band at approx- imately 15 kHz)	Stereo- phonic pair	
	2-wire terminal	4-wire terminal					
	Gold francs	Gold francs	Gold francs	Gold francs	Gold francs	Gold francs	Gold francs
1) Fixed rate for preparation and operation per transmission and per country having an interconnection point (whatever the number of interconnection points within terminal and transit countries)	90	90	90	90	90	90	150
2) Charge per minute of transmission per terminal country	} tele- phone rate ^{a)}	} tele- phone- rate ^{a)}	2	2	2	4	10
3) Charge per minute of transmission and per interconnection point in a transit country ^{b)}			3.20	3.20	3.20	6.40	17
4) Charge per 100 km of circuit per minute of transmission			0.40	0.40	0.40	1.00	15
5) Fixed surcharge per transmission per terminal country and per transit country with an interconnection point for the provision of a narrow-band (telephone-type circuit) ^{c)}	30	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.

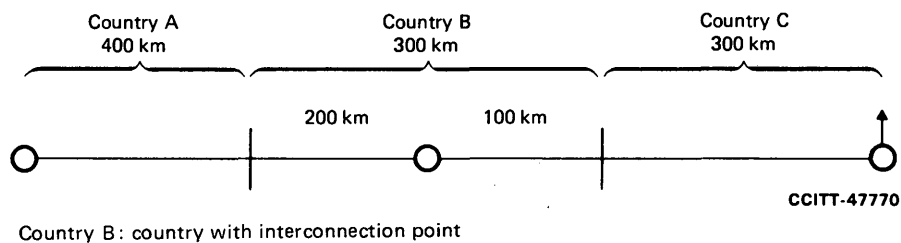
c) This fixed surcharge should be collected in addition to the fixed rate mentioned in 1).

(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*

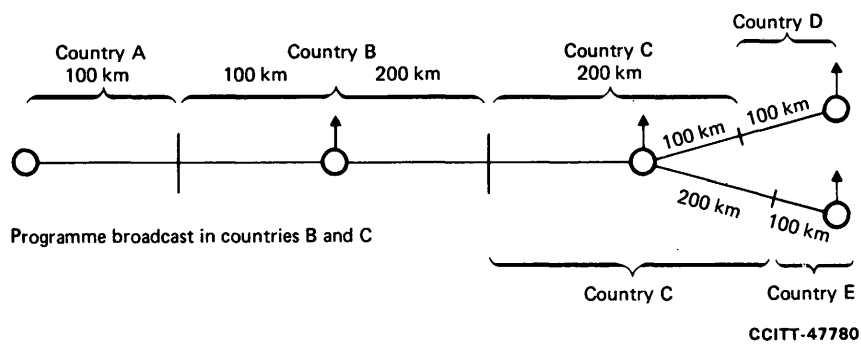
Example 1 – Provision of sound-programme circuits: 20 minutes



Accounting rate shares

Country A	$\left\{ \begin{array}{l} 90 \\ 2.00 \times 20 \\ 0.40 \times 4 \times 20 \end{array} \right.$	162 gold francs
Country B	$\left\{ \begin{array}{l} 90 \\ 3.20 \times 20 \\ 0.40 \times 3 \times 20 \end{array} \right.$	178 gold francs
Country C	$\left\{ \begin{array}{l} 90 \\ 2.00 \times 20 \\ 0.40 \times 3 \times 20 \end{array} \right.$	154 gold francs
Accounting rate		<u>494 gold francs</u>

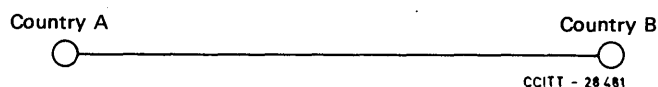
Example 2 – Provision of sound-programme circuits: 20 minutes



Accounting rate shares

Country A	<div>90</div> <div>2.00×20</div> <div>$0.40 \times 1 \times 20$</div>	138 gold francs
Country B	<div>90</div> <div>2.00×20</div> <div>$0.40 \times 1 \times 20$</div> <div>90</div> <div>2.00×20</div> <div>$0.40 \times 2 \times 20$</div>	284 gold francs
Country C	<div>90</div> <div>2.00×20</div> <div>$0.40 \times 2 \times 20$</div> <div>90</div> <div>2.00×20</div> <div>$0.40 \times 1 \times 20$</div> <div>90</div> <div>2.00×20</div> <div>$0.40 \times 2 \times 20$</div>	430 gold francs
Country D	<div>90</div> <div>2.00×20</div> <div>$0.40 \times 1 \times 20$</div>	138 gold francs
Country E	<div>90</div> <div>2.00×20</div> <div>$0.40 \times 1 \times 20$</div>	138 gold francs
Accounting rate		1128 gold francs

Example 3 – Provision of a narrow-band (direct route) circuit for an intercontinental sound-programme transmission: 20 minutes



Accounting rate shares⁷⁾

Country A

– fixed rate for preparation and operation ⁸⁾	90	} 200 gold francs
– fixed surcharge for the provision of a narrow-band circuit ⁹⁾	30	
– charge per minute (20 × 4) ¹⁰⁾	80	

Country B

– fixed rate for preparation and operation ⁸⁾	90	} 200 gold francs
– fixed surcharge for the provision of a narrow-band circuit ⁹⁾	30	
– charge per minute (20 × 4) ¹⁰⁾	80	

Accounting rate 400 gold francs

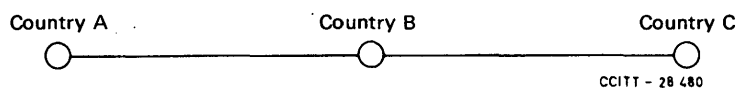
⁷⁾ In Examples 3 and 4, it is assumed that countries outside Europe apply the same standard rates as the countries of the TEUREM Region.

⁸⁾ This charge is not levied if the narrow-band circuit is used only for sound- or television-programme transmission coordination or monitoring.

⁹⁾ When a narrow-band circuit is provided with a 4-wire terminal and is used for any purpose, the fixed surcharge is 60 gold francs.

¹⁰⁾ The regular telephone rate used in Examples 3 and 4 is 8 gold francs.

Example 4 — Provision of narrow-band circuits (with interconnection in Europe) for an intercontinental sound-programme transmission: 20 minutes



Country B: European country with interconnection point

Accounting rate shares¹¹⁾

Country A (Europe)

— fixed rate for preparation and operation ¹²⁾	90	} 185 gold francs
— fixed surcharge ¹³⁾	30	
— charge per minute (20 × 3.25) ¹⁴⁾	65	

Country B (transit in Europe)

— fixed rate for preparation and operation ¹²⁾	90	} 150 gold francs
— fixed surcharge ¹³⁾	30	
— charge per minute (20 × 1.50) ¹⁴⁾	30	

Country C (outside Europe)

— fixed rate for preparation and operation ¹²⁾	90	} 185 gold francs
— fixed surcharge ¹³⁾	30	
— charge per minute (20 × 3.25) ¹⁴⁾	65	

Accounting rate	520 gold francs
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¹¹⁾ In Examples 3 and 4, it is assumed that countries outside Europe apply the same standard rates as the countries of the TEUREM Region.

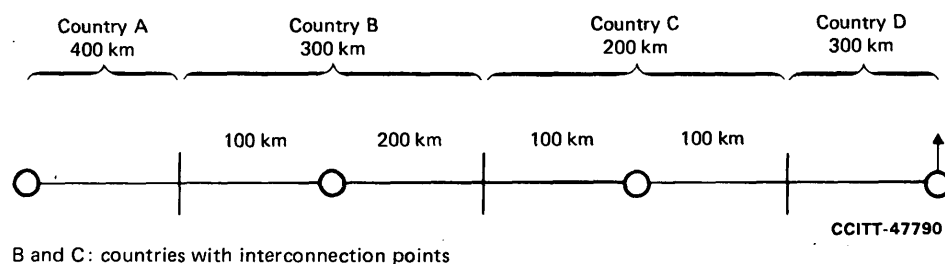
¹²⁾ This charge is not levied if the narrow-band circuit is used only for sound- or television-programme transmission coordination or monitoring.

¹³⁾ When a narrow-band circuit is provided with a 4-wire terminal and is used for any purpose, the fixed surcharge is 60 gold francs.

¹⁴⁾ The regular telephone rate used in Examples 3 and 4 is 8 gold francs.

B.2 Circuits provided for television-programme transmissions

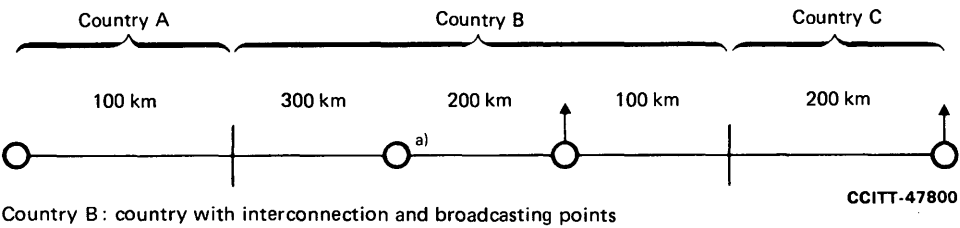
Example 1 — Provision of television-programme circuits: 30 minutes



Accounting rate shares

Country A	$\left\{ \begin{array}{l} 150 \\ 10 \times 30 \\ 15 \times 4 \times 30 \end{array} \right.$	2250 gold francs
Country B	$\left\{ \begin{array}{l} 150 \\ 17 \times 30 \\ 15 \times 3 \times 30 \end{array} \right.$	2010 gold francs
Country C	$\left\{ \begin{array}{l} 150 \\ 17 \times 30 \\ 15 \times 2 \times 30 \end{array} \right.$	1560 gold francs
Country D	$\left\{ \begin{array}{l} 150 \\ 10 \times 30 \\ 15 \times 3 \times 30 \end{array} \right.$	1800 gold francs
Accounting rate		<hr/> 7620 gold francs

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

Country A	$\left\{ \begin{array}{l} 150 \\ 10 \times 50 \\ 15 \times 1 \times 50 \end{array} \right.$	1400 gold francs
Country B	$\left\{ \begin{array}{l} 150 \\ 10 \times 50 \\ 15 \times 5 \times 50 \\ 150 \\ 10 \times 50 \\ 15 \times 1 \times 50 \end{array} \right.$	5800 gold francs
Country C	$\left\{ \begin{array}{l} 150 \\ 10 \times 50 \\ 15 \times 2 \times 50 \end{array} \right.$	2150 gold francs
Accounting rate		<hr/> 9350 gold francs

**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 an intercontinental circuit 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.

TABLE 1/D.305

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
0.49	1.50	1.11	3.40	0.65	2.00	1.30	4.00

The above figures are reference values and may be adjusted to take account of special circumstances.

3 The values given in Table 1/D.305 may also be applicable to the handling of traffic via intercontinental submarine cables.

4 The Administration of the non-European terminal country shall share in defraying part (generally one half) of the transit costs, in accordance with the provision of Recommendation D.150.

Recommendation D.310 R

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.

The standard rates given in this Recommendation are expressed in gold francs but, in accordance with Article 30 of the *International Telecommunication Convention* (Nairobi, 1982) these rates may be established in either gold francs or the monetary unit of the International Monetary Fund (IMF), the Special Drawing Right (SDR). To calculate the amounts in SDR, the conversion rate 1 SDR = 3.061 gold francs should be applied to the gold franc values given in this Recommendation. The amounts thus obtained should normally be expressed to at least three significant figures.

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*;

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.

- 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.
- 2.1.2 The following annual rentals are recommended for the lease of television-programme circuits:
 - 125 000 gold francs per terminal equipment at each end;³⁾
 - 200 000 gold francs 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), as distinct from the provisions of § 2.5.2 of Recommendation D.1, the rentals are calculated as follows:
 - a) for the first day of lease: 1/5 of the monthly rental;
 - b) for each consecutive day: 1/30 of the monthly rental, but the total amount paid per month by the customer may not exceed that of the monthly rental.

³⁾ In a transit country where two circuits are interconnected, the rental for two terminal equipments (i.e. 250 000 gold francs) should be applied.

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.

Recommendation D.390 R

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.

SECTION 3

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.150 is the rate per traffic unit agreed between the Administrations for a given relation which 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.150, is the rate per traffic unit agreed between the Administration for a given relation which 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 4

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.

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 of 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 (e.g. in gold francs or in SDRs) and 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.

3.1.3 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 usually 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) semiautomatic outgoing
- c) semiautomatic 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) semiautomatic 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 R.R. S.M.											
Group A B { coax/SP R.R. S.M.											
Tele- phone circuit A B { coax/SP R.R. S.M.											
Tele- graph 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

R.R. Radio-relay

S.P. Symmetric pair cable

S.M. Submarine cable

Calculation of annual costs for maintenance and buildings (transmission part)

[illegible]

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
Super-group			{ A B									
Group			{ A B									
Telephone circuit			{ A B									
Tele-graph 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)	Costs increases					Circuit in service (year)
				Annual rate	Coef- ficient				
<i>Manual operation</i> Outgoing or incoming circuit } Transit circuit									
<i>Semiautomatic operation</i> Outgoing circuit..... Incoming circuit									
<i>Automatic operation</i> Outgoing circuit..... Incoming circuit									
Transit circuit									

TABLE B-5
Telephone switching and operation – Total annual costs

Mode of operation	Switching											Operation				Total annual costs (year)
	Capital costs (year)	Maintenance			Buildings						Total switching costs (year)	Circuit in service (year)	Cost increase		Circuit in service (year)	
		Circuit in service (year)	Cost increases		Circuit in service (year)	Circuit installed (year)	Coefficient of increase for spare	Circuit in service (year)	Cost increases							
			Annual rate	Coef- ficient					Annual rate	Coef- ficient						
Manual operation Outgoing or incoming circuit } Transit circuit																
Semiautomatic operation Outgoing circuit Incoming circuit																
Automatic operation Outgoing circuit.... Incoming circuit ... Transit circuit																

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

**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

Rate of return on capital investment 15%

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
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b) *maintenance costs*

percentage of investment costs:	5%
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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 4.12 million gold francs
20.52 million gold francs
 - *cost per supergroup actually installed*
 - *cable* 20.52 million gold francs: 120 supergroup 171 000 gold francs
 - *translation equipments:*
 - supermastergroup
 - two A elements at 78 000 = 156 000
 - 1 filter = 33 000
 - $189\,000 \times 0.5 = 94\,500$
 - per supergroup (1/15) 6 300 gold francs
 - supergroup
 - two A elements at 20 800 = 41 600
 - 1 filter = 8 000
 - $49\,600 \times 0.5 =$ 24 800 gold francs
- 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	25	—
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
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– terminal transmission equipments (Element A) (2 × 0.02 gold francs)	4.0 gold centimes
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– national circuits: (average 150 km) (1.5×0.05 gold francs)	7.5 gold centimes
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- administrative cost: outgoing: 10.0 gold centimes

incoming: 5.0 gold centimes

Total cost per minute 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	4 024 100
<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: 16 000 000 gold francs

Total 39 000 000 gold francs

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 1 650 gold francs

Total costs per circuit: 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.

