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CHARGING AND ACCOUNTING IN INTERNATIONAL TELECOMMUNICATION SERVICES

DETERMINATION OF ACCOUNTING RATE SHARES AND COLLECTION CHARGES IN TELEX RELATIONS BETWEEN COUNTRIES IN AFRICA

ITU-T Recommendation D.601 R

(Previously “CCITT Recommendation”)

FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (ITU). The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

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The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, March 1-12, 1993).

ITU-T Recommendation D.601 R was revised by ITU-T Study Group 3 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 6th of October 1993.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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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 clause 2 (Determination of accounting rate shares);
- for fixing the collection charges, the provisions contained in clause 3;
- for fixing tariffs and remuneration for the facilities used for international telex traffic routed via satellite, the provisions of clause 4.

DETERMINATION OF ACCOUNTING RATE SHARES AND COLLECTION CHARGES IN TELEX RELATIONS BETWEEN COUNTRIES IN AFRICA[1)]

(revised in 1993)

1 Explanation of some of the terms used in this Recommendation

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

2 Determination of accounting rate shares in telex relations between countries in Africa

2.1 General

2.1.1 Since the setting up of any international call involves both the international network and the national networks of the terminal countries, the accounting rate share for each country is derived from three basic elements, to which separate standard rates are applied:

- the *line* (*transmission)* part of the international network, which includes the various transmission systems used and is based on distance;
- the *international exchange*, i.e. the *switching* part of the international circuit plus the terminal transmission equipment;
- the *national extension*, which denotes that part of the national network of each terminal country involved in completing the connection.

2.1.2 In special cases where the *line* (transmission) part of an international connection is:

- a 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 among 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.

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1) The standard rates given in this Recommendation are expressed in gold francs. In accordance with the International Telecommunication Regulations, the gold franc is equivalent to 1/3.061 SDR. Recommendation applicable to the African Region.

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 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 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.

2.2.3.3 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 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

– *per 100 km* of international circuit (excluding any national circuit required for connecting the international exchange to the national exchange serving the subscriber)	0.18 gold centimes[2)]
– for the semi-automatic international exchange in the country of origin	61.2 gold centimes
– for the automatic international exchange in the country:	
of origin	9.3 gold centimes
of destination	9.3 gold centimes
– for an automatic international exchange in a transit country	18.4 gold centimes

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 50 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	54 gold francs[3)]
– per VFT bearer circuit.....	1300 gold francs

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2) 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.

3) 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 × 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	54 gold francs
– per VFT telephone bearer circuit.....	1300 gold francs

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

– per year and per 50-baud international circuit connected

Automatic operation

$0.93 \times 30\,000$[4] = 2790 gold francs[5]

3) *For the national extension*

– per year and per 50-baud international circuit connected

Automatic operation

PN[6] × 30 000[4]

2.3.3 All the amounts given in clause 2 above are reproduced in Tables A.1, B.1 and C.1.

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 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.

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4) Average number of minutes of traffic routed per year and per international telex circuit.

5) The cost of the terminal telex transmission equipment for one extremity is included in the amount of 9.3 gold centimes.

6) 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.

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 clause 2 above for determining collection charges

Table 1 gives examples of the application of standard rates for 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.601 R

Distance steps[a]	Accounting rates			Collection charges			Factor K
	Share independent of distance (in gold francs)	Share based on distance[a] (in gold francs)	Total (in gold francs)	Share independent of distance (in gold francs)	Share based on distance[a] (in gold francs)	Total (in gold francs)	
0-1000 km	1.18[b]	0.02	1.20	1.53	0.03	1.56	1.30
1000-2000 km	1.18	0.04	1.22	1.53	0.05	1.58	
2000-3000 km	1.18	0.06	1.24	1.53	0.08	1.61	
3000-4000 km	1.18	0.08	1.26	1.53	0.10	1.63	
> 4000 km (5000 km)	1.18	0.10	1.28	2.12	0.18	2.30	1.80

a) In calculating the accounting rate share based on distance, the maximum distance in each step was taken. The amount of 0.18 gold centime has been rounded off to 0.2 gold centime.

b) This share is calculated as follows:

	Country of origin	Country of destination
National extension	0.50	0.50
International exchange	0.09[c]	0.09[c]
Total	0.59	0.59
	1.18 gold francs	

c) Rounded sum

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.

Annex A

Standard rates to be applied in Africa in determining accounting rate shares in the telex service (traffic unit basis)

(This annex forms an integral part of this Recommendation)

See Table A.1.

TABLE A.1a)/D.601 R

Accounting rate shares applicable in *terminal countries* per *minute* of telex call

Direction of operation	Semi-automatic operation		Automatic operation	
	Transmission (per 100 km of circuit)	International exchange[a)]	Transmission (per 100 km of circuit)	International exchange[a)]
Outgoing	0.18 gold centime	61 gold centimes	0.18 gold centime	9.3 gold centimes
Incoming	0.18 gold centime	9.3 gold centimes	0.18 gold centime	9.3 gold centimes

a) Including the cost of the transmission equipments for one extremity in terminal operation and for two extremities in transit operation.

TABLE A.1b)/D.601 R

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)]
0,18 gold centime	0.18 gold centime	18 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 equipement used to connect them.

Annex B

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)

(This annex forms an integral part of this Recommendation)

See Table B.1.

TABLE B.1/D.601 R

Unit element considered	Transmission (*line* part)
	Rates per 100 km per annum (in gold francs)
VFT bearer circuit	1300[a)]
Telegraph channel, 50 bauds	54[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 × 2 = 2000 gold francs, irrespective of the number of such connections in the direct transit country.

Annex C

Standard rates to be applied in Africa in remuneration for facilities made available by Administrations in a destination country (flat-rate price basis)

(This annex forms an integral part of this Recommendation)

See Table C.1.

TABLE C.1/D.601 R

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	54 gold francs	0.093 × 30 000[a)] = 2790 gold francs[b)]	PN[c)] × 30 000[a)]
VFT bearer	1300 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 9.3 gold centimes.

c) PN represents the amount, per minute of telex call, of the share to be fixed by each Administration for the extension of the connection on national territory.

Annex D

Tariffs and remuneration for the facilities used for international telex traffic in Africa routed via satellite

(This annex forms an integral part of this Recommendation)

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

- 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: 19 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 clause 2, should therefore be added.

  The share of 19 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 11 400 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 6000 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.