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SERIES D: GENERAL TARIFF PRINCIPLES

General tariff principles – Charging and accounting in the
international telephone service

**Accounting rate principles for the international
telephone service**

ITU-T Recommendation D.140

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ITU-T Recommendation D.140

Accounting rate principles for the international telephone service

Source

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FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. 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.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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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As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

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ITU-T Recommendation D.140

Accounting rate principles for the international telephone service

The ITU-T,

bearing in mind

- a) that the International Telecommunication Regulations indicate that Administrations shall by mutual agreement establish and revise accounting rates to be applied between them, taking into account the Recommendations of the ITU-T and trends in the cost of providing the telecommunication services;
- b) that the costs incurred in providing telecommunication services, although based on the same components, may have a different impact depending on the country's development status which, in turn, may affect the quality of international services;
- c) that one of the purposes of the ITU is to foster collaboration among its Members with a view to the establishment of rates at levels as low as possible consistent with an efficient service,

considering

- a) that Administrations should endeavour to lower the provisioning costs of international telephone services;
- b) that Administrations should strive to offer customers high quality international telephone services at the lowest possible prices;
- c) that too great a dissymmetry between the charges applicable in each direction of the same relation may contribute to the distortion of the balance of traffic and encourage the retention of high accounting rates;
- d) that the remuneration for the use of telecommunication facilities made available to Administrations should cover the costs incurred in providing those facilities, such as:
 - network costs;
 - financial costs;
 - overheads;
- e) that costs depend on many factors which vary by country;
- f) that international telephone networks should be used in an efficient way;
- g) that demand for international telephone services should be stimulated;
- h) that some accounting rates have not kept pace with the recent cost trends and are therefore too high;
- i) that accounting rates that are not cost-orientated may encourage inefficient routings;
- j) that the existing accounting procedures contained in the D-series Recommendations continue to provide Administrations with efficient and flexible processes,

recommends

that the following principles be applied when establishing or revising accounting rates for international telephone services:

- 1 accounting rates for international telephone services should be cost-orientated and should take into account relevant cost trends;

2 each Administration should apply the above principle to all relations on a non-discriminatory basis;

3 Administrations should seek to achieve cost-orientated accounting rates in an expeditious manner, recognizing that this may need to be implemented on a scheduled basis where the level of reduction required is significant. In the event of scheduling, Administrations should aim to agree staged reductions over a period normally of one to five years. However, the actual length of the period of implementation may depend on the extent of reductions agreed and/or the difference in the development of the countries concerned,

further recommends

4 that Administrations should periodically review accounting rates to ensure that they continue to reflect current cost trends;

5 that information relative to accounting rates for the international automatic telephone service should be made available on a voluntary basis to the Director of TSB in an aggregated format, in accordance with the guidelines set out in Annex B, to assist ITU-T studies into accounting rate movements.

Annex A contains guidelines for the cost elements to be taken into account when determining international telephone accounting rates.

Annex B contains guidelines concerning the provision of information relating to accounting rates for the international automatic telephone service.

Annex C contains guidelines for bilateral negotiation of accounting rates in the international telephone service.

Annex A

Guidelines for the cost elements to be taken into account when determining accounting rates and accounting rate shares for the international telephone service

Introduction

These guidelines identify the main cost elements to be used when establishing or revising cost-orientated accounting rates and accounting rate shares for the international telephone service.

A.1 Network elements

The network elements used to provide the international telephone services are generally classified as follows:

- international transmission facilities;
- international switching facilities;
- national extension.

A.1.1 International transmission facilities

The international transmission facilities consist of international terrestrial transmission or international submarine cables, or international satellite transmission or a combination of these.

These facilities include links between earth stations or cable landing stations and the international switching facilities.

A.1.2 International switching facilities

These facilities consist of international switching centres and their associated transmission and signalling equipment.

A.1.3 National extension

The national extension, used for international telephone traffic, consists of national exchanges, national transmission facilities and, if appropriate and identified under a bilateral or multilateral agreement, the local loop.

A.2 Related costs

The related costs are those identified in accordance with generally accepted accounting practices and are divided into:

- direct costs;
- indirect or common costs.

A.2.1 Direct costs

These are:

- investment costs, i.e. depreciation, interest expenses on loans and a reasonable return on equity;
- operation and maintenance costs;
- rental and lease costs of telecommunications facilities including direct transit leasing costs where applicable;
- switched transit costs where applicable;
- cost of access to national or local networks, if applicable;
- directly attributable research and development costs.

A.2.2 Indirect or common costs

These costs cannot be solely attributed to the international telephone service and thus must be allocated. They may be related to:

- general administration (e.g. head office expenses, overheads, training, etc.);
- management systems (e.g. accounting systems);
- other research and development;
- appropriate taxes (or equivalent).

A.3 Other related costs

Other costs may qualify for inclusion by bilateral agreement.

Annex B

Guidelines regarding the provision of information relating to accounting rates for the international automatic telephone service

B.1 Information relating to accounting rates for the international automatic telephone accounting rates will be requested from Administrations by means of a circular-letter sent by the TSB Director.

B.2 Administrations should provide on a voluntary basis the information requested to the TSB Director in the format as shown in B.4 for the reference dates January 1988 and 1992. The same information will subsequently be requested on an annual basis.

B.3 Alternatively, Administrations could provide the information to the Director of TSB as an average annual global accounting rate percentage movement on a yearly basis as illustrated in B.5, starting with year 1988.

B.4 Example format for the presentation of requested information (non normative)

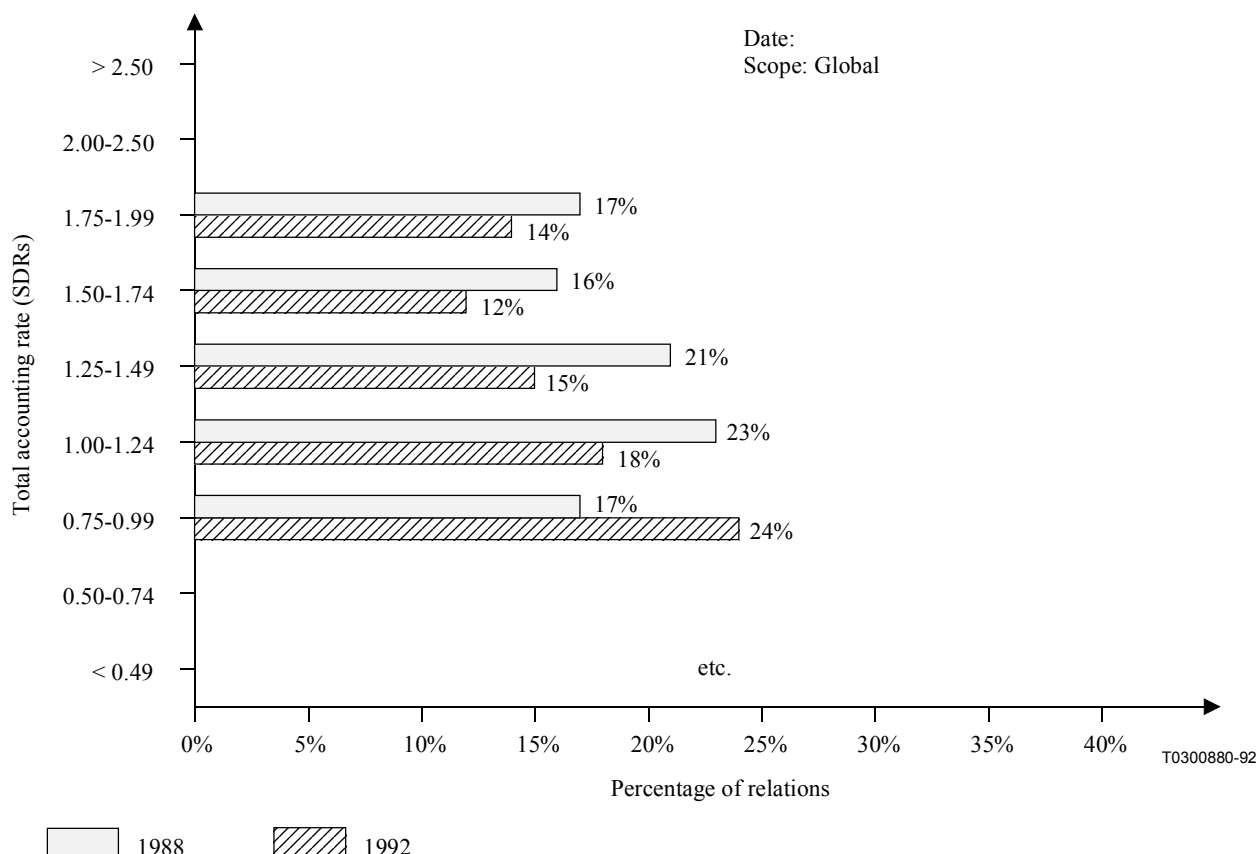


Figure B.1/D.140 – Distribution and movement of automatic telephone accounting rates (January 1988-January 1992)

B.5 Global accounting rate percentage movement (non normative)

This information will be shown as an average annual accounting rate percentage movement.

This average percentage movement should be weighted by the traffic destined to each country on a global basis, starting with the year 1988.

Illustration of the formula to be used to calculate the average accounting rate percentage movement (var % t)

For example, if an Administration has three relations:

$$t = t_1 \times \frac{T_1}{T_t} + t_2 \frac{T_2}{T_t} + t_3 \times \frac{T_3}{T_t}$$

$$\text{var \% } t = \frac{t_{\text{period1}} - t_{\text{period0}}}{t_{\text{period0}}}$$

where:

- t is the weighted average accounting rates;
- t_1 is the accounting rates related to T_1 and so on;
- T_1 is the outgoing traffic related to Administration 1 and so on;
- T_t is the total outgoing traffic;
- var % t is the variation percentage.

Annex C

Guidelines for bilateral negotiation of accounting rates and accounting rate shares in the international telephone service

C.1 Introduction

This annex contains the guidelines to be used in bilateral negotiations to establish and revise accounting rates and accounting rate shares orientated to individual parties' costs,

given:

- ITU-T Recommendation D.150 (*New system in accounting in international telephony*);
- ITU-T Recommendation D.155 (*Guiding principles governing apportionment of accounting rates in intercontinental telephone relations*);
- ITU-T D-series Recommendations – Supplement 1 (*Cost and tariff study method*);
- ITU-T D-series Recommendations – Supplement 2 (*Method for carrying out a cost price study by regional tariff groups*).

C.2 General guidelines

C.2.1 Accounting rates and accounting rate shares are established and revised through bilateral agreement.

C.2.2 The related costs for network elements, as specified in Annex A, should be calculated by each Administration before any bilateral negotiation.

C.2.3 When negotiating on a bilateral basis the establishment or revision of the level of the accounting rates and accounting rate shares in a particular relation, the Administrations concerned should, as far as possible, agree on the approach to be used.

C.2.4 In the establishment or revision of accounting rates and accounting rate shares, due account should be taken of the impact of, among other things:

- changes in technology, the nature of the transmission routes used (land cables, submarine cables, satellite links), economies of scale and agreed routings;
- completion ratios recorded on international circuits;
- trends in the volume of incoming and outgoing traffic;
- changes in unit costs, if any, due to the provision of other telephony-based service applications (e.g. free phone, country direct, charge cards);
- differences in costs between countries.

C.2.5 Negotiations on the revision of accounting rates and accounting rate shares should be conducted periodically, for example on an annual basis.

C.2.6 Cost information presented by Administrations is of a confidential nature when identified as such by either of the parties.

C.3 Approaches

The following describes some possible approaches in which negotiation could be conducted by mutual agreement. This agreement should not be interpreted as automatic.

C.3.1 Approach 1¹

C.3.1.1 Party A and Party B each independently conducts its own cost study using its own cost model to determine, in accordance with Annex A, its transmission, switching and national extension costs.

C.3.1.2 As a variation, both parties may agree to use the same reference values for any of the network elements and if appropriate, some cost elements contained in Annex A.

C.3.1.3 To the extent possible, factors affecting cost movement should be identified, e.g. the introduction of circuit multiplication equipment, traffic growth, etc.

C.3.1.4 From the above results, each could establish and then agree on a target cost-orientated accounting rate and accounting rate shares. The period over which the target is to be achieved should also be agreed.

C.3.1.5 Where the two parties cannot agree a target rate, they should aim nevertheless to reach an agreement for a rate adjustment, staged if appropriate, taking due account of the trend in rate movements (e.g. established via Approach 2 below).

¹ The Administrations of some countries may find it desirable to use the cost models developed by Regional Tariff Groups or other public information.

C.3.2 Approach 2

C.3.2.1 In the absence of the necessary cost data for use of Approach 1, Party A and Party B may compare the accounting rate movement for their relation with:

- a) underlying trends developed using historical cost data; and/or
- b) accounting rate movement trends either:
 - globally, assisted for example by the results of the questionnaire associated with Annex B; or
 - regionally, by examining the movement in the various rates/values contained in the regional Recommendations of the D series; or
 - using respective achievements of rate movements in other relations (for example in the same region).

C.3.2.2 From the above cost and/or accounting rate trends, each party could establish and then agree upon a target accounting rate and accounting rate shares. The period over which the target is to be achieved should also be agreed.

C.3.2.3 Where the two parties cannot agree upon a target rate, they should aim nevertheless to reach an agreement for a rate adjustment, staged if appropriate.

C.3.3 Approach 3

Where an operator (Party A) chooses not to use a cost model but there is competitively established market price available in its own country, it may substantiate its rate claim for terminating a service in its own network by reference to this market price to the other operator (Party B); in this choice, operator (Party A) should be prepared to back up this claim by demonstrating that this rate would correspond to the price or sum of prices of a comparable competitively offered service (or of several such services).

Annex D

Transitional arrangements to cost-orientated mechanisms²

Recognizing the change in the international telecommunications environment, and the agreement to expand the menu of the remuneration arrangements to be incorporated into ITU-T Rec. D.150, it is recommended that transitional arrangements to cost-orientated mechanisms be adopted as follows.

- i) As an initial step, agreement to a target for Administrations/ROAs, through bilateral agreement, to reduce total accounting rates to a level such that after deducting transit charges, where appropriate, the balance is less than 1 SDR per minute by the end of 1998. In so doing, special provisions be given to facilitate the transition by developing countries, in particular least developed countries. In this regard, where circumstances are identified, through a transparent process, of the significant difficulties these Administrations/ROAs may have in coping with the reduction, the target date may be deferred to a mutually agreed date. These provisions may include, as necessary, alterations of the 50/50 arrangement to cushion revenue reductions, provided that such alterations are made within the context of an agreement to achieve cost orientated rates³.

² India, Lebanon and Viet Nam have expressed reservations regarding the application of these arrangements.

³ Russia considers that alternations of the 50/50 arrangement should also be given to Russia because of its higher network costs stipulated by its geographical characteristics, economical and national feature.

- ii) Administrations/ROAs whose accounting rates are below 1 SDR per minute should continue to take positive steps to reduce their accounting rates to cost-orientated levels.
- iii) Administrations/ROAs should seek to implement this proposal in an expeditious manner, recognizing that this may need to be done on a scheduled basis where the levels of reductions are significant. Accordingly, Administrations/ROAs should submit to the ITU-T by March 2nd 1998 a schedule of reductions pursuant to i) above.
- iv) Administrations/ROAs should utilize an appropriate costing methodology as soon as possible, but not later than the end of 1999, to determine their relevant costs⁴.
- v) The ITU-T should collect data from Administrations/ROAs to enable the measurement of progress in following these arrangements.

The ITU-T should continue work to define cost models and methodologies for achieving cost orientation of the current and new remuneration arrangements on an ongoing basis in order to achieve timely implementation of this Recommendation.

Annex E⁵

Guidelines for bilateral negotiations of transitional arrangements towards cost-orientation, 1999 to 2001⁶

E.1 Introduction

This annex contains the multilaterally-agreed guidelines to be used in bilateral negotiations to establish and revise accounting rates, accounting rate shares and transit shares during the transition to cost-orientation, in cases where it has not proved possible to apply Approach 1 in Annex C, to the satisfaction of all parties in a correspondent relationship. When implementing these guidelines, the International Telecommunication Regulation (ITRs), ITU-T Recs D.150, D.155 and other relevant D-series Recommendations should also be taken into account.

E.2 General

Recognizing the change in the international telecommunications environment and the agreement to expand the menu of remuneration arrangements to be incorporated into ITU-T Rec. D.150, it is recommended that Administrations take into account the transitional arrangements towards cost-orientation, detailed below.

⁴ Russia expressed a reservation on the interpretation of this paragraph.

⁵ The Arab Republic of Egypt, Cuba, Canada, the Russian Federation, the Syrian Arab Republic, the United Kingdom of Great Britain and Northern Ireland, the United States of America and Venezuela have expressed reservations and will not apply the indicative target rates contained in this annex.

⁶ This period may be extended, subject to the provisions in E.5.3.

E.3 Indicative target rates for direct relations⁷

E.3.1 As a transitional measure pending the application of Approach 1 in Annex C, it is recommended that Administrations progressively move towards and attain the indicative target rates set out in Table E.1 in their bilateral negotiations. The target rates are shown in SDRs per minute, for countries/territories grouped according to their level of teledensity (telephone lines per 100 inhabitants) at 1st January 1998. Administrations which have already attained these indicative target rates should continue to take positive steps to reduce their accounting rates to cost-orientated levels. When after 1 January 1999, a country or territory moves from one teledensity group to the next owing to an increase in the number of subscribers, the applicable indicative target rate should be adjusted accordingly and achieved within the same period as previously, subject to E.5.

Table E.1/D.140 – Indicative target rates for direct relations (settlement rates)

| Teledensity $T \leq 1$ | $1 < T \leq 5$ | $5 < T \leq 10$ | $10 < T \leq 20$ | $20 < T \leq 35$ | $35 < T \leq 50$ | $T > 50$ |
|--|-------------------------------------|--------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|-------------------------------|
| 0.327 SDR | 0.251 SDR | 0.210 SDR | 0.162 SDR | 0.118 SDR | 0.088 SDR | 0.043 SDR |
| NOTE – Indicative target rate in each teledensity group is expressed in SDRs per minute (T = telephone lines per 100 inhabitants). | | | | | | |

E.3.2 The indicative target rates in Table E.1 show upper limits and should not be interpreted as providing any guidance for establishing lower limits for direct relations, nor should they be taken as cost-orientated levels.

E.3.3 For small island states, which are defined as having a population of less than 300 000 inhabitants, distant from a continental mainland, off the main cable routes and therefore reliant on satellite communications, the indicative target rate of 0.266 SDR per minute may be used. The countries/territories within this category (see Appendix I) may choose to adhere to this target or the one relevant to its teledensity.

E.3.4 For the Least Developed Countries, which are recognized by the United Nations, the indicative target rate of 0.312 SDR per minute may be used. The 48 LDCs, plus the 3 "as if" LDCs, eligible within category (see Appendix I) may choose to adhere to this target or the one relevant to its teledensity.

E.3.5 The transitional rates under Table E.1 are not applicable to those Administrations which have calculated their costs according to a mutually agreed costing approach and are aware that their cost is different for terminating an international call on their network than that identified for them under Table E.1.

E.3.6 Where the indicative target rates proposed in Table E.1 differ from the results obtained by applying a regional cost model which has been recognized by ITU-T Study Group 3, the results of the cost model could be applied, by bilateral agreement, within the region and in relations with Administrations outside the region, as described in Approach 1 of Annex C. It is recognized that where this is not possible, the indicative target rates proposed in Table E.1 could be used as the basis for the cost and/or accounting rate trends described in Approach 2 of Annex C.

E.3.7 It is recommended that Administrations should utilize an appropriate costing methodology as soon as possible to determine their relevant costs.

⁷ The direct and transit target rates are not applicable between competitive markets.

E.3.8 Where the indicative target rates proposed in Table E.1 differ from the cost elements identified in a country case study, which has been validated by the region concerned and endorsed by ITU-T Study Group 3, the cost elements from the case study could be applied, by bilateral agreement, within the region and in relations with Administrations outside the region.

E.4 Indicative target rate for indirect relations (transit shares)⁷

E.4.1 In order to provide guidance on transit shares, on routes where an origin Administration lacks choice⁸ among transit routes and service providers, it is recommended that transit Administrations move towards the indicative target rate (upper limit) of 0.05 SDRs per minute.

E.4.2 The indicative target rate of 0.05 SDR (upper limit) should not be interpreted as providing any guidance for establishing lower limit for transit shares, nor should it be taken as cost-orientated levels. It is recognized that, on competitive routes, transit shares may be considerably below that target rate.

E.5 Transition period

E.5.1 The starting point for the transition would be the current settlement rate level and transit share level.

E.5.2 The transitional arrangements towards cost-orientation should be negotiated through bilateral agreement, for instance in the following ways:

- a) On the principle of a 50/50 division of accounting revenue from traffic exchanged (symmetry), with both Administrations applying the same rate (settlement rate) to attain a level at or below the indicative target rate of the Administration in the lower teledensity category by or before the end of the transition period.
- b) In an asymmetric manner, with both Administrations applying different rates for call termination, in the context of an agreement to move to below the indicative target rate of the Administration in the lower teledensity category. In this case the Administration in the higher teledensity category would apply a lower rate for call termination than the Administration in the lower teledensity category.
- c) In order to enhance Universal Access to telecommunications in developing countries, Administrations in developed countries may give consideration to terminating incoming calls at their own cost-orientated rate without requiring reciprocal treatment. Such consideration would be voluntary and based on bilateral agreement.

⁸ Only has access to three or less independent and comparable transit providers.

E.5.3 It is recommended that the indicative target rates for direct relations in Table E.1 be attained by staged reductions over a three-year period (i.e. by year-end 2001).

However, for those Administrations in LDCs plus the 3 "as if" LDCs, a longer transition period is recommended, as a function of the level of dependency of the country on net settlement payments, as proposed in Table E.2.

Table E.2/D.140 – Transition period as a function of dependence on net settlement payments (NSP)

| Net settlement payments (NSP) as a percentage of total telecommunication revenue (TTR) | Target year for achieving target rate |
|--|---------------------------------------|
| NSP ≤ 10 per cent of TTR | year-end 2001 |
| 10 < NSP ≤ 20 per cent of TTR | year-end 2002 |
| 20 < NSP ≤ 30 per cent of TTR | year-end 2003 |
| NSP > 30 per cent of TTR | year-end 2004 |
| NOTE 1 – Calculations should be based on published data, from company accounts, on net settlement payments and total telecommunication revenue. It is calculated on the basis of the moving average of the last three years. | |
| NOTE 2 – Data for net settlement payments and total telecommunication revenue should be valid for the country/territory as a whole, not just for an individual Administration. | |

The level of dependence on net settlement payments as shown in Table E.2 should be calculated on the basis of the moving average of the last three years. It shall be recalculated each year. If an Administration's level of dependence moves, from one year to the next, from one category to another, the target year will be adjusted accordingly but not beyond 2004.

Where circumstances are identified, through a transparent process, of the significant difficulties other Administrations may have in coping with the reduction, the target date may be deferred by bilateral agreement. Similarly Administrations which have identified through a transparent process, serious difficulties in meeting the target rates proposed in Table E.1 may apply, by bilateral agreement a program of regular/annual reductions.

E.5.4 It is recommended that the transit shares be reduced progressively in order to arrive at the indicative target rate of 0.05 SDR (upper limit) by the end of year 2000.

E.6 Universal Service Obligations

Any Member State has the right to define the kind of Universal Service Obligation it wishes to maintain. However, such Obligations should be administered in a transparent, non-discriminatory and competitively neutral manner which is not more burdensome than necessary for the kind of universal service defined by the Member.

Annex F

Principles to be applied by Administrations in developing and using a cost model

F.1 Introduction

The following set of Principles should be used during bilateral discussion on the value and applicability of any given costing methodology that may be proposed for use in determining accounting rates, settlement rates or termination charges. These principles are applicable in all cases including where a competitively determined market price is available or is not available. Any proposed costing methodology should, at a minimum, adhere to the following set of principles:

F.2 Principle of open availability of information

The open availability of information in the cost derivation process used to substantiate rate claims. Alternatively, if prices from competitive environments are used as guides/proxies for actual cost data, the open provision of this price data and information (regarding the competitiveness of these market environments).

F.3 Principle of practicability

The ability to implement a costing methodology with reasonable demands being placed on data availability and data processing in order to keep the costing exercise economical, yet still useful.

F.4 Principle of causality

The demonstration of a clear cause and effect relationship between service delivery on the one hand and the network elements and other resources used to provide it on the other hand, taking into account the relevant underlying cost determinants.

F.5 Principle of contribution to common cost

Costing methodologies should provide for mutually agreed reasonable contribution to common cost as defined in ITU-T Rec. D.140.

F.6 Principle of economic provisioning

The use of a costing methodology that reflects the principle of economic provision of services taking into consideration all the reasonable circumstances that affect the conditions in each country, for instance, macro-economic conditions, network size and teledensity levels, etc. and recognizes the need for a better combination and use of resources over time.

Appendix I

Groups of countries/territories

| T ≤ 1 (Group A) | 1 < T ≤ 5 (B) | 5 < T ≤ 10 (C) | 10 < T ≤ 20 (D) | 20 < T ≤ 35 (E) | 35 < T ≤ 50 (F) | T > 50 (G) |
|------------------------|-----------------------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|
| Afghanistan* | Albania | Azerbaijan | Argentina | Bahamas+ | Andorra | Anguilla+ |
| Angola* | Algeria | Bolivia | Armenia | Bahrain | Antigua & Barbuda+ | Australia |
| Bangladesh* | Bhutan* | Bosnia | Belize | Belarus | Aruba | Bermuda |
| Benin* | Cuba | Botswana | Chile | Brunei Darussalam | Ascension+ | British Virgin Islands+ |
| Burkina Faso* | D.P.R. Korea | Brazil | Colombia | Bulgaria | Austria | Canada |
| Burundi* | Djibouti* | Cape Verde* | Costa Rica | Cook Islands+ | Barbados+ | Cayman Islands+ |
| Cambodia* | Gabon | China | Georgia | Croatia | Belgium | Cyprus |
| Cameroon | Gambia* | Dominican Rep. | Iran (I.R.) | Czech Republic | Greenland | Denmark |
| Central African Rep.* | Guatemala | Ecuador | Jamaica | Dominica+ | Guadeloupe | Falkland Islands (Malvinas)+ |
| Chad* | Honduras | Egypt | Kazakistan | Estonia | Guam | Faroe Islands |
| Comoros* | India | El Salvador | Lebanon | French Guyana | Ireland | Finland |
| Congo | Indonesia | Fiji | Libya | French Polynesia+ | Israel | France |
| DPR Congo* | Iraq | Guyana | Malaysia | Grenada+ | Italy | Germany |
| Côte d'Ivoire | Kiribati*+ | Jordan | Mauritius | Hungary | Japan | Gibraltar |
| Equatorial Guinea* | Mongolia | Kyrgyzstan | Moldova | Kuwait | Korea (Rep.) | Greece |
| Eritrea* | Nicaragua* | Maldives*+ | Nauru+ | Latvia | Macao | Guernsey |
| Ethiopia* | Pakistan | Marshall Islands+ | Panama | Lithuania | Malta | Hong Kong China |
| Ghana | Papua New Guinea | Mayotte+ | Poland | New Caledonia+ | Martinique | Iceland+ |
| Guinea* | Paraguay | Mexico | Romania | Niue+ | Montserrat+ | Jersey |
| Guinea-Bissau* | Philippines | Micronesia+ | Russia | Puerto Rico | Neth. Antilles+ | Liechtenstein |
| Haiti* | S.Tome & Principe*+ | Morocco | Saudi Arabia | Qatar | New Zealand | Luxembourg |
| Kenya | Senegal* | Namibia* | Seychelles+ | Slovak Republic | Northern Marianas+ | Monaco |
| Lao P.D.R.* | Solomon Islands* | Oman | South Africa | St. Helena+ | Portugal | Netherlands |

| T ≤ 1 (Group A) | 1 < T ≤ 5 (B) | 5 < T ≤ 10 (C) | 10 < T ≤ 20 (D) | 20 < T ≤ 35 (E) | 35 < T ≤ 50 (F) | T > 50 (G) |
|--|---|---|---|--|---|--|
| Lesotho* Liberia* Madagascar* Malawi* Mali* Mauritania* Mozambique* Myanmar* Nepal* Niger* Nigeria Rwanda* Sierra Leone* Somalia* Sudan* Tanzania* Togo* Uganda* Zambia* | Sri Lanka Swaziland Tajikistan Vanuatu*+ Viet Nam West Bank and Gaza Yemen* Zimbabwe | Peru Samoa*+ Syria Thailand Tonga+ Tunisia Turkmenistan Tuvalu*+ Uzbekistan Wallis and Futuna+ | St. Vincent+ Suriname TFYR Macedonia Trinidad & Tobago Ukraine Venezuela Yugoslavia (F. R.) | St. Lucia+ Turkey Turks & Caicos+ Uruguay | Réunion Singapore Slovenia Spain St. Kitts and Nevis+ United Arab Emirates | Norway San Marino St. Pierre & Miquelon Sweden Switzerland Taiwan-China United Kingdom United States Virgin Islands (US) |
| * (LDC) Least Developed Country and "as if LDC" + Small island state NOTE – Teledensity: As of 1st January 1998; see E.3.1 for further adjustment. | | | | | | |

SERIES OF ITU-T RECOMMENDATIONS

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|-----------------|--|
| Series A | Organization of the work of ITU-T |
| Series B | Means of expression: definitions, symbols, classification |
| Series C | General telecommunication statistics |
| Series D | General tariff principles |
| Series E | Overall network operation, telephone service, service operation and human factors |
| Series F | Non-telephone telecommunication services |
| Series G | Transmission systems and media, digital systems and networks |
| Series H | Audiovisual and multimedia systems |
| Series I | Integrated services digital network |
| Series J | Cable networks and transmission of television, sound programme and other multimedia signals |
| Series K | Protection against interference |
| Series L | Construction, installation and protection of cables and other elements of outside plant |
| Series M | TMN and network maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits |
| Series N | Maintenance: international sound programme and television transmission circuits |
| Series O | Specifications of measuring equipment |
| Series P | Telephone transmission quality, telephone installations, local line networks |
| Series Q | Switching and signalling |
| Series R | Telegraph transmission |
| Series S | Telegraph services terminal equipment |
| Series T | Terminals for telematic services |
| Series U | Telegraph switching |
| Series V | Data communication over the telephone network |
| Series X | Data networks and open system communications |
| Series Y | Global information infrastructure and Internet protocol aspects |
| Series Z | Languages and general software aspects for telecommunication systems |