INTERNATIONAL TELECOMMUNICATION UNION

CCITT D.11

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

GENERAL TARIFF PRINCIPLES

CHARGING AND ACCOUNTING IN INTERNATIONAL TELECOMMUNICATIONS SERVICES

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

Recommendation D.11

Geneva, 1991

FOREWORD

The CCITT (the International Telegraph and Telephone Consultative Committee) is a permanent organ of the International Telecommunication Union (ITU). CCITT 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 Plenary Assembly of CCITT which meets every four years, establishes the topics for study and approves Recommendations prepared by its Study Groups. The approval of Recommendations by the members of CCITT between Plenary Assemblies is covered by the procedure laid down in CCITT Resolution No. 2 (Melbourne, 1988).

Recommendation D.11 was prepared by Study Group III and was approved under the Resolution No. 2 procedure on the 22 of March 1991.

CCITT NOTE

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

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

(Geneva, 1980, revised 1990)

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.

Since this is a rapidly developing field at the present time in terms of the diversity of application, flexibility is essential.

1 Definition

virtual call (switched 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, during 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 chargeable[1)] :

– data packet;

– interrupt packet;

– call request/call incoming packet;

– reset request/reset indication packet, provided the cause of call reset is either DTE originated, local procedure error or remote procedure error;

– clear request (when the fast select facility is signalled in the call request packet without restrictions).

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 DSE[2)] 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.

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

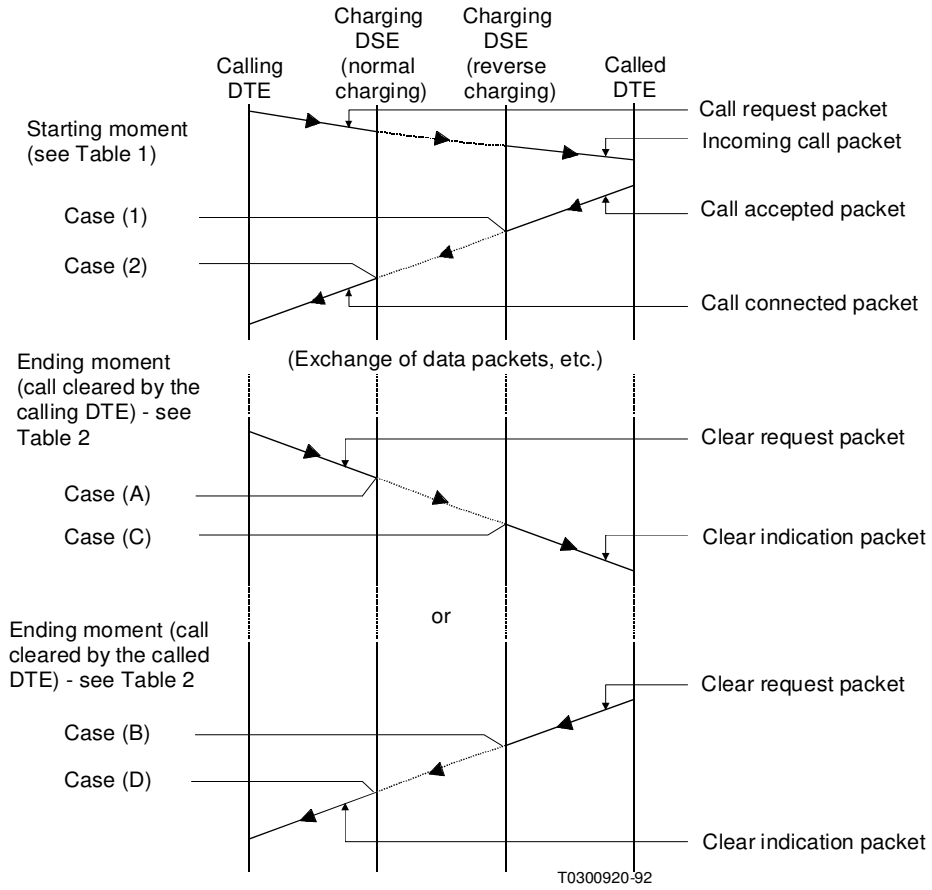
2) The charging Administration should, in principle, obtain the information required for charging purposes. Therefore, in the case of a call using the reverse charging facility, it is the called Administration which is responsible for obtaining charging information.

4 International accounts

Accounting rates should be determined on the basis of either:

i) volume of information transmitted, or

ii) volume of information transmitted and duration of communication.



DTE Data terminal equipement
DSE Data switching exchange

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 calling DTE	Case (D)	Case (B)

FIGURE 1/D.11

Diagrams illustrating the starting and ending moments of the chargeable duration