INTERNATIONAL TELECOMMUNICATION UNION

CCITT D.232 (rev. 1)

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

GENERAL TARIFF PRINCIPLES

CHARGING AND ACCOUNTING IN INTERNATIONAL TELECOMMUNICATIONS SERVICES

SPECIFIC TARIFF AND ACCOUNTING PRINCIPLES APPLICABLE TO ISDN SUPPLEMENTARY SERVICES

Recommendation D.232 (rev. 1)

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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.

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Recommendation D.232 was prepared by Study Group III and was approved under the Resolution No. 2 procedure on the 16th of June 1992.

CCITT NOTES

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

2) A list of abbreviations used in this Recommendation can be found in Annex B.

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Recommendation D.232

SPECIFIC TARIFF AND ACCOUNTING PRINCIPLES APPLICABLE TO ISDN SUPPLEMENTARY SERVICES

(revised 1992)

1 Introduction

General charging and accounting principles for ISDN supplementary services may be found in Recommendation D.230. This Recommendation indicates the application of the general principles to each ISDN supplementary service. The supplementary services are placed in logical groupings where they share similar considerations and charging principles. Annex A summarizes the charging mechanisms and support requirements.

2 Charging aspects

2.1 *Number identification*

This section provides charging principles for the supplementary services, Calling Line Identification Presentation (CLIP), Calling Line Identification Restriction (CLIR), Connected Line Identification Presentation (COLP) and Connected Line Identification Restriction (COLR). Detailed descriptions of the services are provided in Recommendation I.251, § 3 (CLIP), § 4 (CLIR), § 5 (COLP) and § 6 (COLR).

Considering that:

a) the calling line number and connected line number are present in the signalling messages associated with call control;

b) the supplementary services identified above merely allow or prevent the displaying of the embedded information;

c) the mechanisms are, therefore, invoked at either the calling or called user's location and do not require additional network resources for invocation,

it is recommended that the charging principles in § 2.1.1 be applied.

2.1.1 *Charging principles*

The display or restriction service may be charged for by:

a) inclusion in the rental charges raised against customers; or

b) the setting of a separate subscription charge; or

c) a per event charge, or

d) combinations of a) to c).

2.2 *Direct Dialling-In and Multiple Subscriber Number*

This section provides charging principles for the supplementary services, Direct-Dialling-In (DDI) and Multiple Subscriber Number (MSN). Detailed descriptions of the services are provided in Recommendation I.251, § 1 (DDI) and § 2 (MSN).

Considering that:

a) the call establishment procedures are fundamentally unaltered;

b) the supplementary services identified above merely allow the direct establishment of calls to users connected to integrated services PBXs or passive busses;

c) the mechanisms are invoked only at the called user's location and do not require additional originating or international network resources for invocation,

it is recommended that the charging principles in § 2.2.1 be applied.

2.2.1 *Charging principles*

The services may be charged for by either:

a) inclusion in the rental charges raised against customers; or

b) the setting of a separate subscription charge.

Those charges would normally be proportional to the quantity of the numbers assigned.

2.3 *Call Forward and Call Transfer*

This section provides charging principles for the supplementary services, Call Transfer (CT), Call Forwarding Busy (CFB), Call Forwarding No Reply (CFNR) and Call Forwarding Unconditional (CFU). Detailed descriptions of the services are provided in Recommendation I.252, § 1 (CT), § 2 (CFB), § 3 (CFNR) and § 4 (CFU).

Considering that:

a) Call Transfer and Call Forwarding are functionally equivalent;

b) the supplementary services identified above allow the diversion of active (Call Transfer), or incoming (Call Forward) calls to a third party;

c) the mechanisms are invoked only at the served user's location and do not require additional originating or international network resources for invocation,

it is recommended that the charging principles in § 2.3.1 be applied.

2.3.1 *Charging principles*

The services may be charged for by either:

a) inclusion in the rental charges raised against customers; or

b) the setting of a separate subscription charge; and

c) a usage charge based upon the number of successful invocations.

The served user is also responsible for the basic charges raised against the transferred (re-used connection method only) or forwarded call.

2.4 *Line Hunting*

This section provides charging principles for the Line Hunting supplementary service. Detailed description of the service is provided in Recommendation I.252, § 6.

Considering that:

a) the call establishment procedures are fundamentally unaltered;

b) the supplementary service identified above merely allows the sequential or uniform establishment of calls to users connected to a group of ISDN interfaces;

c) the mechanisms are invoked only at the called user's location and do not require additional originating or international network resources for invocation,

it is recommended that the charging principles in § 2.4.1 be applied.

2.4.1 *Charging principles*

The service may be charged for by either:

a) inclusion in the rental charges raised against customers; or

b) the setting of a separate subscription charge.

Those charges would normally be proportional to the quantity of the interfaces in the group.

2.5 *Call Waiting and Call Hold*

This section provides charging principles for the supplementary services, Call Waiting (CW) and Call Hold (HOLD). Detailed descriptions of the services are provided in Recommendation I.253.1 (CW) and in Recommendation I.253, § 2 (HOLD).

Considering that:

a) the call establishment procedures are fundamentally unaltered;

b) the supplementary services identified above merely allow the notification of incoming calls (CW) or the interruption of an existing communication (HOLD);

c) the mechanisms are invoked only at the served user's location and do not require additional originating, terminating or international network resources for invocation,

it is recommended that the charging principles in § 2.5.1 be applied.

2.5.1 *Charging principles*

The services may be charged for by either:

a) inclusion in the rental charges raised against customers; or

b) the setting of a separate subscription charge.

Charging for the associated bearer service shall continue during the period that bearer service is placed on hold.

2.6 *Conference calls*

This section provides charging principles for the supplementary services, Conference Call (CONF) and Three-Party Service (3PTY). Detailed descriptions of the services are provided in Recommendation I.254, § 1 (CONF) and § 2 (3PTY).

Considering that:

a) the basic call components (bearers and teleservices) are dealt with under their respective Recommendations;

b) the supplementary services identified above employ the use of bridging equipment to allow communication between the served user and multiple parties, however, the served user in Three-Party service is not allowed to combine multi-party calls into a three-way conversation;

c) the mechanisms are invoked only at the served user's location and do not require additional originating or international network resources for invocation;

d) principles associated with "cascading bridges" are for further study,

it is recommended that the charging principles in § 2.6.1 be applied.

2.6.1 *Charging principles*

The services may be charged for:

a) on the demand basis of bridge usage, i.e. holding time per port; or

b) by a bundled invocation charge (Three-Party service only).

2.7 *Closed User Group*

This section provides charging principles for the Closed User Group supplementary service. A detailed description of the service is provided in Recommendation I.255, § 1.

Considering that

a) the call establishment procedures are fundamentally unaltered;

b) the supplementary service identified above merely allows the access or restriction to a specified list of numbers or optionally to the public network;

c) the mechanisms are invoked only at the served user's location and do not require additional originating, terminating or international network resources for invocation beyond the checking of the appropriate level of access,

it is recommended that the charging principles in § 2.7.1 be applied.

2.7.1 *Charging principles*

The services may be charged for by either:

a) inclusion in the rental charges raised against customers; or

b) the setting of a separate subscription charge.

Those charges may be proportional to the access or restriction options subscribed to.

2.8 *Advice of Charge*

This section provides charging principles for the Advice of Charge (AOC) supplementary service. A detailed description of the service is provided in Recommendation I.256, § 2.

Considering that:

a) the basic call establishment procedures are fundamentally unaltered;

b) the supplementary service identified above merely allows the customer to be notified of the price of the current call;

c) the mechanisms are invoked only at the served user's location and do not require additional originating, terminating or international network resources for invocation,

and recognizing that not all services and charging processes can accommodate this service, it is recommended that the charging principles in § 2.8.1 be applied.

2.8.1 *Charging principles*

The services may be charged for by either:

a) inclusion in the rental charges raised against customers; or

b) the setting of a separate subscription charge; and/or

c) a per successful invocation charge which may vary according to the stage in the call at which the invocation occurs.

2.9 *Priority service*

This section provides charging and accounting principles for the Priority supplementary service (A- and B-priorities). Detailed description of the service is provided in Recommendation I.255.4 (A-priority, B-priority).

Considering that:

a) the call establishment procedures will have to be modified in order to set up the proper level of priority;

b) the originating, transit (if applicable) and terminating exchanges will need to process the priority information;

c) the mechanisms will be invoked at the calling user's location for both the A-priority and B-priority,

it is recommended that the charging principles in § 2.9.1 be applied.

2.9.1 *Charging principle*

The service may be charged for by either:

a) the setting of a separate subscription charge; and/or

b) a uniform charge per call or a variable charge per call based on the level of priority required.

2.10 *Multi-level Precedence and Preemption Service*

This section provides for charging and accounting principles for the Multi-Level Precedence and Preemption (MLPP) Service. Detailed description of the service is provided in Recommendation I.255.3 (MLPP).

Considering that:

a) the Multi-Level Precedence and Preemption can be considered as a special form of priority service;

b) the originating, transit (if applicable) and terminating exchanges will need to process the priority information,

it is recommended that the charging principles in § 2.10.1 be applied.

2.10.1 *Charging principles*

The service may be charged for by either:

a) a subscription charge for the setting up of the call; and/or

b) a uniform charge per call or a variable charge per call based on the level of precedence required; and/or

c) a uniform charge per call or a variable charge per call based on the number of alternate party(ies) requested (for further study).

3 Accounting

3.1 Except for Priority service and MLPP, no additional originating or international network resources are required to provide the supplementary services in this Recommendation and accordingly, no additional accounting should be required. In the case of Priority service and MLPP, since there might be additional network resources used to complete an international call using this supplementary service, a surcharge per call might be appropriate.

3.2 Should the services be provided in an interworking environment, additional resources may be required and accounting arrangements may be necessary (further study).

4 Charging mechanisms and support requirements

4.1 The charging elements in Annex A have been identified as being in need of network support mechanisms.

4.2 Administrations may elect to use all, none or any combination of the charging elements identified.

4.3 The charging elements and mechanisms are explained in Recommendation D.260.

ANNEX A

(to Recommendation D.232)

Summary of charging mechanisms and support requirements for supplementary services

Supplementary service	Element	Form	Unit	Modifier
CLIP, CLIR	Access Invocation	Subscription Setup	UPC UCI	None None
COLP, COLR	Access Invocation	Subscription Setup	UPC UCI	None None
DDI, MSN	Access	Subscription	UPC	Quantity of numbers assigned
Call Transfer, Call Forwarding	Access Invocation	Subscription Setup	UPC UCI	None None
Line Hunting	Access	Subscription	UPC	Quantity of interfaces
Call Waiting, Call hold	Access	Subscription	UPC	None
Conference call, Three-Party [a)]	Invocation Usage	Setup Call duration/ Number of ports	Uniform charge per event Holding time per port	None
Closed User Group	Access (manager or each party)	Subscription per member	UPC	Services required
Advice of Charge	Access Invocation	Subscription Per request	UPC UCI	None Stage at which invoked
Priority	Access Invocation	Subscription Call set up	Uniform periodic charge Uniform or variable charge per successful invocation	Priority level
MLPP	Access Invocation	Subscription Call Set Up	Uniform periodic charge Uniform or variable charge per successful invocation and/or per alternate party(ies) requested	Level of precedence

[a)] assumes bridge in country of origin

UPC Uniform periodic charge (rental)
UCI Uniform charge for (successful) invocation

Note – The subscription is included in normal rental or additional rental.

Summary of accounting requirements
for supplementary services (for further study)

Supplementary service	Elements	Form	Unit
Priority, MLPP	Invocation	Surcharge	Uniform per call amount

ANNEX B

(to Recommendation D.232)

Alphabetical list of abbreviations used in this Recommendation

3PTY Three-party service

AOC Advice of charge

CFB Call forwarding busy

CFNR Call forwarding no reply

CFU Call forwarding unconditional

CLIP Calling line identification presentation

CLIR Calling line identification restriction

COLP Connected line identification presentation

COLR Connected line identification restriction

CONF Conference call

CT Call transfer

CW Call waiting

DDI Direct dialling-in

HOLD Call hold

MLPP Multi-level precedence and preemption

MSN Multiple subscriber number