INTERNATIONAL TELECOMMUNICATION UNION

CCITT I.251.2 (rev.1)

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

INTEGRATED SERVICES DIGITAL NETWORK (ISDN)

GENERAL STRUCTURE AND SERVICE CAPABILITIES

MULTIPLE SUBSCRIBER NUMBER

Recommendation I.251.2 (rev.1)

Geneva, 1992

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 I.251.2 was prepared by Study Group I and was approved under the Resolution No. 2 procedure on the 4th of August 1992.

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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Recommendation I.251.2

MULTIPLE SUBSCRIBER NUMBER

(revised 1992)

1 Definition

Multiple Subscriber Number provides the possibility for assigning multiple integrated services digital network numbers to a single interface. For example, this service:

1) allows dialling from a line connected to a public network directly to terminals connected to a basic access which has subscribed to Multiple Subscriber Number (e.g. in a passive bus configuration);

2) enables the network to determine which ISDN number is applicable on originating calls (e.g. for charging purposes, for notification to the called party and application for supplementary services).

It is considered:

– that some Administrations may not have knowledge or control over what is connected to the basic access, e.g. an network termination 2 (NT2) or passive bus;

– that Administration have differing numbering methods;

– that common international terminal specifications are desired.

2 Description

2.1 *General description*

The Multiple Subscriber Number (MSN) supplementary service provides the possibility for assigning multiple numbers (not necessarily consecutive) to a single public or private interface. This enables the selection of one or multiple distinct terminals attached to the same interface.

The service provider shall fix the length of the numbers to be transmitted to the user's installation. They may comprise the least significant digit up to the full integrated services digital network (ISDN) number (see Recommendation E.164).

The digit(s) significant for terminal differentiation shall be an integral part of the ISDN numbering scheme.

Note 1 – Within a private ISDN, multiple subscriber number digits may be different from the digits of the public ISDN number. This additional possibility, if provided, has no impact on the public ISDN.

Note 2 – More than one multiple subscriber number may be assigned to one terminal.

Note 3 – The actual method of relating the ISDN number to a particular terminal is a matter of national implementation.

2.2 *Specific terminology*

None.

2.3 *Qualifications on the applicability to telecommunication services*

No restriction to either circuit or packet mode.

3 Procedures

3.1 *Provision/withdrawal*

The service shall be provided after pre-arrangement with the service provider.

The service provider shall allocate a set of ISDN numbers (not necessarily consecutive). At the option of the service provider, one of these numbers may be designated by the MSN subscriber as the default number for the interface. At the option of the service provider, the user may specify a mapping arrangement between ISDN number and MSN digit(s).

3.2 *Normal procedures*

3.2.1 *Activation/deactivation/registration*

Activation through subscription.

3.2.2 *Invocation and operation*

The destination number sent by the calling user will be analyzed in the network. If the called user subscribes to this supplementary service, the network sends the available part of the ISDN number or at least the relating digit(s):

i) identical to that last digit(s) of the ISDN number; or

ii) generated by the network on the basis of a mapping process between ISDN number(s) and MSN digit(s).

Terminals compatible to the MSN service will react on a call as follows:

– if MSN digit(s) equal to their own preadjusted identity is (are) presented, they react to it in a predetermined way;

– if there is a set-up message without MSN digit(s), the terminal will interpret it as a normal call. (This may happen if a terminal with MSN capabilities is used on an interface where MSN is not subscribed for.)

In outgoing calls a terminal compatible to the MSN supplementary service can insert its multiple subscriber number in the originating address information of the call request (see also the Calling Line Identification Presentation supplementary service).

It is possible to allocate one ISDN number to one or more terminals. Similarly, one terminal may allow the assignment of one or more than one number. Further, as an administrative option, a specific digit or sequence of digits may be allocated to enable all terminals in a point-to-multipoint configuration to react in the same way as they would if the supplementary service MSN were not subscribed to.

3.3 *Exceptional procedures*

3.3.1 *Activation/deactivation/registration*

Not applicable.

3.3.2 *Invocation and operation*

Terminals not compatible with the MSN supplementary service and receiving a call request containing multiple subscriber number digit(s) shall interpret it as a basic call.

3.4 *Alternative procedures*

3.4.1 *Activation/deactivation/registration*

None identified.

3.4.2 *Invocation and operation*

None identified.

4 Network capabilities for charging

This Recommendation does not cover charging principles. Futures Recommendations in the D-Series are expected to contain that information.

It shall be possible to charge the subscriber accurately for the service.

5 Interworking requirements

None identified.

6 Interaction with other supplementary services

In case of interaction with other supplementary services, these services could be applicable to the individual MSN rather than to the subscriber access.

6.1 *Call Waiting*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.2 *Call Transfer*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.3 *Connected Line Identification Presentation*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.4 *Connected Line Identification Restriction*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.5 *Calling Line Identification Presentation*

If MSN is subscribed to by the calling party, then this party may provide the appropriate calling party MSN digits or the full ISDN number on outgoing calls. If no arrangement has been made with the calling subscriber, the network shall check the user provided calling party number information for validity on the corresponding access. If the check fails, or if no calling number information is provided by the user, then the network should apply the default ISDN number of the calling party's access.

At the called party's interface, there is no impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.6 *Calling Line Identification Restriction*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.7 *Closed User Group*

Different closed user groups can be assigned to each multiple subscriber number. The network cannot guarantee that a given closed user group matches beyond the access towards the user. As the closed user group assignment to the multiple subscriber numbers is the full responsibility of the user, this may lead to restricted applicability of a combination of the closed user group and MSN supplementary services.

6.8 *Conference Calling*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.9 *Direct-Dialling-In*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

Note 1 – In some networks, subscription to the Direct-Dialling-In (DDI) and the multiple subscriber number supplementary service is mutually exclusive.

Note 2 – The DDI digits can be used by the private ISDN in the context of the private ISDNs Multiple Subscriber Number supplementary service.

6.10 *Call diversion services*

6.10.1 *Call Forwarding Busy*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.10.2 *Call Forwarding No Reply*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.10.3 *Call Forwarding Unconditional*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.10.4 *Call Deflection*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.11 *Line Hunting*

For further study.

6.12 *Three-Party Service*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.13 *User-to-User Signalling*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.14 *Multiple Subscriber Number*

Not applicable.

6.15 *Call Hold*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.16 *Advice of Charge*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.17 *Multi-Level Precedence and Preemption*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.18 *Priority*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.19 *Malicious Call Identification*

If MSN is provided to the served user of Malicious Call Identification (MCID), then MCID shall be provided either globally for the whole access or on a per MSN number basis, according to access arrangements.

6.20 *Outgoing Call Barring*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.21 *Reverse Charging*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.22 *Sub-addressing*

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

7 Dynamic description

The dynamic description is as for the basic services.