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SERIES I: INTEGRATED SERVICES DIGITAL
NETWORK (ISDN)

Service capabilities – Supplementary services in ISDN

NUMBER IDENTIFICATION SUPPLEMENTARY SERVICES: MULTIPLE SUBSCRIBER NUMBER

Reedition of CCITT Recommendation I.251.2 published in
the Blue Book, Fascicle III.7 (1988)

NOTES

1 CCITT Recommendation I.251.2 was published in Fascicle III.7 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

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

Recommendation I.251.2

NUMBER IDENTIFICATION SUPPLEMENTARY SERVICES: MULTIPLE SUBSCRIBER NUMBER

(Melbourne, 1988)

2 I.251.2 – Multiple Subscriber Number

2.1 Definition

Multiple Subscriber Number (MSN) provides the possibility for assigning multiple ISDN 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 MSN (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 NT2 or passive bus;
- that Administrations have differing numbering methods;
- that common international terminal specifications are desired.

2.2 Description

2.2.1 General description

The addressing of terminals on a basic access may be achieved by applying a set of ISDN numbers to the single basic access. When a call with one of these ISDN numbers is delivered, the called number is indicated to the MSN user, either directly or through a mapping by the network.

In general, any set of numbers may be sent from the network to the subscriber's equipment during call establishment. However, it is recognized that administrative practices and certain equipment designs may lead to the adoption of restricted numbering sequences, e.g. by relating the last digit(s) of a fixed length ISDN number to the terminals to be connected. The actual method of relating the ISDN number to a particular terminal is a matter of national implementation but may, for example, be done by central intelligence or by distributed intelligence within the terminals.

The essential difference between this supplementary service and DDI concerns the length of the number sent to, and processed by, the user's installation. In the DDI situation the user (ISPBX) will be tailored on a per installation basis to receive the particular number of digits necessary to identify the terminals of this user (ISPBX).

With the multiple subscriber number supplementary service however, the service provider will fix the length of the number to be transmitted to the user's installation. It may comprise 1 or 2 or 3 of the last digits up to the full ISDN number. This number will be sent to the user network interface.

The digit(s) significant for terminal differentiation is/are an integral part of the ISDN numbering scheme.

Note – MSN is independent from and does not impose any constraints on “service indication” and “sub-addressing”.

2.2.2 Specific terminology

None.

2.2.3 Qualifications on the applicability to telecommunication services

No restrictions.

2.3 Procedures

2.3.1 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).

2.3.2 *Normal procedures*

2.3.2.1 *Activation/deactivation/registration*

Activation through subscription.

2.3.2.2 *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.)

Terminals not compatible to the MSN service will react to a call as follows:

- whether there is (are) MSN digit(s) or not, the call will be interpreted as a normal call.

On outgoing calls a terminal compatible with the MSN service may provide the ISDN number (or MSN digits) when placing the call. The network will carry this identity unchanged or will replace the digit(s) by the associated ISDN number. The ISDN number of the calling terminal will then be sent to the called user with the incoming call (refer to § 3, CLIP 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.

2.3.3 *Exceptional procedures*

2.3.3.1 *Activation/deactivation/registration*

Not applicable.

2.3.3.2 *Invocation and operation*

An ISDN number or MSN digits, generated by a terminal at an interface where MSN is in operation shall be discarded by the network unless this number is subscribed to by this interface. A default number may be provided by the network.

2.3.4 *Alternative procedures*

2.3.4.1 *Activation/deactivation/registration*

None identified.

2.3.4.2 *Invocation and operation*

None identified.

2.4 *Network capabilities for charging*

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

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

2.5 *Interworking requirements*

None identified.

2.6 *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.

2.6.1 *Call Waiting*

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

2.6.2 *Call Transfer*

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

2.6.3 *Connected Line Identification Presentation*

See COLP (§ 5) interaction with MSN.

2.6.4 *Connected Line Identification Restriction*

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

2.6.5 *Calling Line Identification Presentation*

Upon call initiation, if the ISDN number indicated by the MSN user terminal is not subscribed to for the interface, or if no numbering information is indicated, a default number (if designated by the MSN subscriber) or a number unavailable indication is provided to the CLIP user.

2.6.6 *Calling Line Identification Restriction*

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

2.6.7 *Closed User Group*

For further study.

2.6.8 *Conference Calling*

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

2.6.9 *Direct-Dialling-In*

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

2.6.10 *Call Diversion (i.e. Call Forwarding) services*

2.6.10.1 *Call Forwarding Busy*

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

2.6.10.2 *Call Forwarding No Reply*

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

2.6.10.3 *Call Forwarding Unconditional*

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

2.6.11 *Line Hunting service*

For further study.

2.6.12 *Three-Party Service*

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

2.6.13 *User-to-User Signalling*

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

2.6.14 *Multiple Subscriber Number*

Not applicable.

2.6.15 *Call Hold*

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

2.6.16 *Advice of Charge*

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

2.7 *Dynamic description*

The dynamic description is as for the basic services.

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