INTERNATIONAL TELECOMMUNICATION UNION

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THE INTERNATIONAL
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CONSULTATIVE COMMITTEE

INTEGRATED SERVICES DIGITAL NETWORK (ISDN)

GENERAL STRUCTURE AND SERVICE CAPABILITIES

SUB-ADDRESSING SUPPLEMENTARY SERVICE

Recommendation I.251.8 (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.

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.251.8 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.

Recommendation I.251.8

SUB-ADDRESSING SUPPLEMENTARY SERVICE

(*revised 1992*)

1 Definition

The **sub-addressing** supplementary service allows the called (served) user to expand his addressing capacity beyond the one given by the ISDN number.

2 Description

2.1 *General description*

A sub-address, if presented by a calling user, is delivered unaffected to the called (served) user. Only the served user defines the significance of the sub-address. Applications can be for example:

1) to select or to prefer a specific terminal at the called customer's termination;

2) to invoke a specific process in a terminal at the called customer's termination.

2.1.1 *Size of sub-address*

The maximum size of the sub-address is 20 octets.

2.2 *Specific terminology*

Maximum authorized length of sub-address accepted by network (MALSAN): is the maximum number of sub-address octets that the network can accept and transmit.

2.3 *Applicability to telecommunications services*

Sub-addressing (SUB) supplementary service is applicable to all telecommunication services.

3 Procedures

3.1 *Provision/withdrawal*

For calling subscriber, provision shall be without any prior arrangement with the service provider.

For the called subscriber, provision may be general without any prior arrangement or by prior arrangement with the service provider.

Withdrawal is done by the service provider at the subscriber's request or for administrative reasons.

3.2 *Normal procedures*

3.2.1 *Activation, deactivation and registration*

Not applicable.

Note – Registration may be provided by an appropriate user-terminal procedure (because sub-address is stored within the terminal).

3.2.2 *Erasure*

Not applicable.

Note – Erasure may be provided by an appropriate user-terminal procedure (because sub-address is stored within the terminal).

3.2.3 *Invocation and operation*

Sub-address information can be provided by the calling user in the call set-up phase. The service is invoked when sub-address information is sent from the network to the called (served) user.

3.2.3.1 *Calling user side*

During the call set-up phase, the calling user can insert the destination sub-address information which is then transported transparently by the network from the originating terminal to the destination terminal.

During the call set-up phase, the calling user can also insert its own sub-address to complement the calling number identification (see the Calling Line Identification Presentation supplementary service).

Note – Delivery of both these pieces of information from the calling user to the network, is part of the basic call.

3.2.3.2 *Called user side*

The sub-address that complements the called user's ISDN number is transferred transparently through the network and sent from the destination network to the called user's terminal(s).

This sub-address information is used by the called user's terminals in association with the requested service indications to check the ability to accept the incoming call. In the case where sub-address is not included by the calling user, the destination network always provides a normal call offering without sub-address information to the called user's terminal(s) (except where other supplementary services apply).

The called user's terminal which is finally selected for the incoming call, can also insert its own sub-address in the response to complement the called number identification (see Connected Line Identification Presentation supplementary service).

Note 1 – Delivery of this information from the called user to the network, is part of the basic call.

Note 2 – If different kinds of terminals are attached to the same interface, e.g. in passive bus configurations, it cannot be guaranteed that the sub-addressing supplementary service will be processed correctly in terms of terminal selection. Especially in cases where terminals which support the SUB supplementary service as a terminal selection criterion and terminals which do not, are attached to the same interface. In these cases, those terminals which do not support the SUB supplementary service or those which use the sub-address only internally to invoke a specific process, will react to every incoming call based only on the check of the indicated requested service and/or multiple subscriber number (if any and if applicable). At such an interface, the sub-addressing supplementary service procedures may be overridden by the basic call procedures and, if applicable, by the execution of the multiple subscriber number supplementary service.

3.2.4 *Interrogation*

Not applicable.

3.3 *Exceptional procedures*

3.3.1 *Activation, deactivation and registration*

Not applicable.

3.3.2 *Erasure*

Not applicable.

3.3.3 *Invocation and operation*

If provision of the SUB supplementary service requires a prior arrangement with the service provider and if the called user has not subscribed to the SUB supplementary service, the network shall not send a called user's sub-address with the incoming call request.

When sub-address information is used by the called user's terminal(s), then if any value without operational significance is received by the called party, the incoming call can be rejected or ignored.

3.3.4 *Interrogation*

Not applicable.

4 Network capabilities for charging

Charging principles are outside the scope of this Recommendation.

5 Intercommunication considerations

5.1 *Interworking with non-ISDNs*

The SUB supplementary service need not be applicable if at least one of the two parties is not an ISDN subscriber.

If the sub-address cannot be transmitted to the destination side, no indication shall be sent to the calling user.

Note – The calling user will be aware of the interworking situation through normal call procedures and by that means will know that the sub-address cannot be transmitted to the destination side.

5.2 *Interworking between ISDNs*

In the case where interworking between ISDNs occurs (either public or private), if the sub-address cannot be transmitted to the destination side due to different network capabilities, the sub-address shall be discarded and no indication shall be sent to the calling user.

Note – It is expected that this situation will occur only for a limited period of time.

6 Interaction with other supplementary services

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.

Note – If the calling user subscribes to the Connected Line Identification Presentation supplementary service, the connected party sub-address, if provided by the connected user, and the connected party number are presented to the calling user.

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*

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

Note – If the called user subscribes to the Calling Line Identification Presentation supplementary service, the calling party sub-address, if provided by the calling user, and the calling party number are presented to the called user.

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*

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

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.

6.10 *Call diversion services*

6.10.1 *Call Forwarding Busy*

The sub-address associated with the original called party number shall not be forwarded if the call is forwarded.

6.10.2 *Call Forwarding No Reply*

The sub-address associated with the original called party number is delivered to the original called party and shall not be forwarded if the call is forwarded.

6.10.3 *Call Forwarding Unconditional*

The sub-address associated with the original called party number shall not be forwarded if the call is forwarded.

6.10.4 *Call Deflection*

The sub-address associated with the original called party number is delivered to the original called party and shall not be forwarded if the call is deflected.

6.11 *Line Hunting*

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

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*

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

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*

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

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*

Not applicable.

7 Dynamic description

The dynamic description is as for basic services.

ANNEX A

(to Recommendation I.251.8)

Interim restrictions to the Sub-address supplementary service

A.1 *Scope*

This annex describes additional characteristics to the Sub-address supplementary service that may be provided by some public ISDN networks as a network provider option.

These additional characteristics shall have no impact and shall place no requirement whatever on the provision and operation of the Sub-address supplementary service defined in this Recommendation by the ISDN networks that do not support these options.

A.2 *Description*

For a certain period of time, the size of a sub-address can be limited to a maximum which is less than 20 and at least 4 octets, either within certain networks or between certain networks.

MALSAN shall be the specific terminology that defines the maximum number of sub-address octets that the network can accept or transmit. The value of MALSAN for the first implementation could be changed to a greater value (up to 20 octets) at a later date and then be dependent on the requested telecommunication service.

In the case where a sub-address exceeds the MALSAN value, the entire sub-address shall be discarded by the network. No additional indications beyond those provided in Recommendation Q.931, § 5.8.7.2 will be returned to the calling user.