TELE DANMARK

COMMITTEE FOR SPECIFICATION AND STANDARDISATION (SSU)

TECHNICAL SPECIFICATION

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Public Switched Telephone Network (PSTN)
Calling Line Identification Presentation (CLIP) supplementary service
Specification of the NTP

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Foreword

This document is provided by TDC Tele Danmark and applies to TDC Tele Danmark's PSTN network.

1 Scope

This specification defines the access characteristics of the CLIP supplementary service using DTMF signalling at the PSTN NTP for analogue access lines.

The aim of the document is to provide information to terminal manufacturers who have interest in designing terminal equipment for TDC Tele Danmark's PSTN network.

The CLIP supplementary service provides the called party with the possibility of receiving an identification of the calling party, i.e. the calling party's number.

2 Normative references

[1] TDK-TS 900 221 (Edition 3): "User-network interface specification for access to the public switched telephone network (PSTN). Specification of the NTP".

[2] TDK-TS 900 301-2 (Edition 1): "Public Switched Telephone Network (PSTN); Call waiting with CLIP supplementary service; Specification of the NTP".

3 Definitions

Calling line identity: The number (information) identifying the calling party.

Calling user: The user whose identity (number) is delivered to the served user.

Served user: The user to whom the CLIP supplementary service is provided. The served user is the called user in a call.

4 Symbols and abbreviations

CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
DTMF	Dual Tone Multi-Frequency
NTP	Network Termination Point
PSTN	Public Switched Telephone Network

5 Description

The CLIP supplementary service enables the served user to have the calling line identity (the calling user's number) delivered in connection with an incoming call. The calling line identity is delivered using DTMF signalling. If the calling user's number cannot be delivered, an indication of the reason is sent to the served user.

6 Procedures

6.1 Provision and withdrawal

The CLIP supplementary service is provided on a subscription basis.

6.2 Registration and erasure

Not applicable.

6.3 Activation and deactivation

The CLIP supplementary service is activated at provision.

Deactivation controlled by the served user is not possible.

6.4 Interrogation

Interrogation controlled by the served user is not possible.

6.5 Invocation and operation

6.5.1 Normal operation

A served user subscribing to the CLIP supplementary service may have the calling line identity delivered from the network in two different situations:

- as part of an incoming call when the served user is in the on-hook condition; or
- as part of an incoming call when the served user is in the off-hook condition, e.g. in connection with the call waiting supplementary service.

In both cases, the calling line information is delivered as a sequence of DTMF based characters.

6.5.1.1 Basic characteristics

The basic characteristics (frequencies, levels, signalling rates etc.) of the DTMF signals used are defined in TDK-TS 900 221 [1], sections 5.8.4.1 and 5.8.4.3.

6.5.1.2 Signalling coding

The DTMF sequence sent to the called user is coded as shown in table 1.

Table 1: Signalling coding

Signalling code	Meaning
Axx....xx#	“A” indicates “Calling line identity” “xx....xx” represents the number digits “#” terminates the DTMF sequence
D1#	“D1” indicates that the calling user has restricted the delivery of the calling line identity (CLIR) “#” terminates the DTMF sequence
D2#	“D2” indicates that the calling line identity is not received in connection with an incoming international call “#” terminates the DTMF sequence
D3#	“D3” indicates that the calling line identity cannot be delivered due to technical reasons “#” terminates the DTMF sequence
A, D and # are DTMF characters as defined in TDK-TS 900 221[1] table 5	

6.5.1.3 Timing conditions in the on-hook condition

If the calling line identity is delivered as part of an incoming call (on-hook condition), the timing diagram is as shown in figure 1.

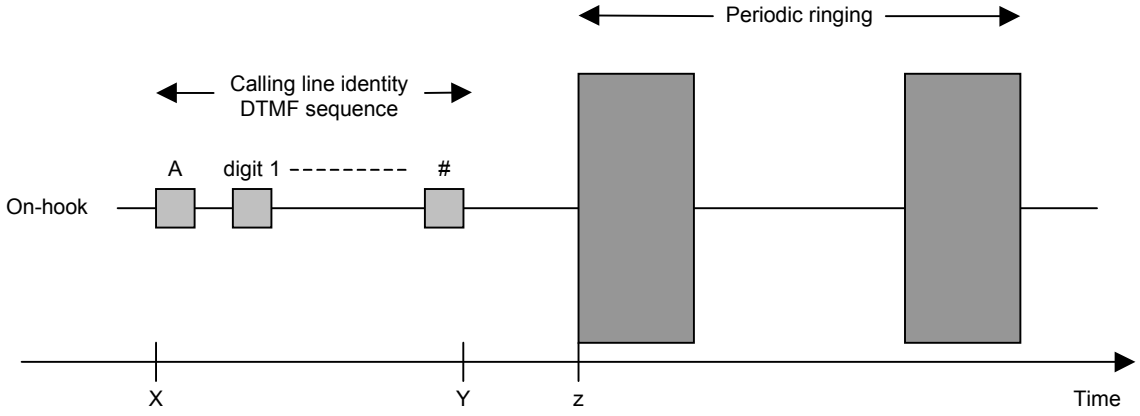

Figure 1: Timing diagram

The DTMF sequence is delivered prior to the ringing, and starts at point X without any preceding wake-up signal.

The duration of the DTMF sequence depends on the number length and the signalling rate defined in TDK-TS 900 221 [1], section 5.8.4.3.

The ringing signal may start (point Z) immediately after the end of the DTMF sequence (point Y).

NOTE: Users may be provided with a service (e.g. Teleaction), which implies that incoming calls to such a service does not include the ringing signal, but only the calling line identity. However, ordinary terminals should not start ringing on these types of calls, but only on calls including the ringing signal.

If the called user goes off-hook after point X, the DTMF sequence will be completed and the called user will be connected to the incoming call.

6.5.1.4 Timing conditions in the off-hook condition

If the calling line identity is to be delivered in the off-hook condition, the timing is defined in the documents describing the services using this signalling.

6.5.2 Exceptional procedures

None identified.

7 Interworking with private networks

The delivery of calling line identity to private networks is outside the scope of this document.

8 Interactions with other networks

The calling line identity will be delivered in connection with incoming calls from TDC Tele Danmark's national ISDN and mobile networks.

The calling line identity will be delivered in connection with incoming calls from other national operators and international operators provided bilateral agreements exist.

9 Interaction with other supplementary services

Interaction is identified with the following supplementary services.

9.1 Calling line identification restriction

If the calling user has invoked the CLIR supplementary service, the served user will receive indication “D1” as shown in table 1.

9.2 Call forwarding services

If the served user receives a call that has previously been forwarded, the calling line identity of the original calling user will be delivered to the served user.

9.3 Call waiting with CLIP

If the served user subscribes to the Call waiting with CLIP supplementary service, the served user can request the calling line identity for an incoming waiting call. In that case the calling line identity will be delivered in the off-hook condition.

See TDK 900 301-2 [2] for further information.

History

Document history		
Date	**Status**	**Comment**
August 2001	Edition 1	
January 2003	Edition 2	Note included in sec. 6.5.1.3.