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*Technical Specification*

**3rd Generation Partnership Project;  
Technical Specification Group Core Network and Terminals;  
Line Identification supplementary services;  
Stage 3  
(Release 11)**

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# Foreword

This Technical Specification has been produced by the 3GPP.

This TS specifies the procedures used at the radio interface for normal operation, registration, erasure, activation, deactivation, invocation and interrogation of line identification supplementary services within the 3GPP system.

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of this TS, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version 3.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 Indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the specification;

## 0 Scope

The present document specifies the procedures used at the radio interface for normal operation, registration, erasure, activation, deactivation, invocation and interrogation of line identification supplementary services. Provision and withdrawal of supplementary services is an administrative matter between the mobile subscriber and the service provider and cause no signalling on the radio interface.

In 3GPP TS 24.010 the general aspects of the specification of supplementary services at the layer 3 radio interface are given.

3GPP TS 24.080 specifies the formats and coding for the supplementary services.

Definitions and descriptions of supplementary services are given in 3GPP TS 22.004 and 3GPP TS 22.08x and 3GPP TS 22.09x-series. 3GPP TS 22.081 is related specially to line identification supplementary services.

Technical realization of supplementary services is described in 3GPP TS 23.011 and 3GPP TS 23.08x and 3GPP TS 23.09x-series. 3GPP TS 23.081 is related specially to line identification supplementary services.

The procedures for Call Control, Mobility Management and Radio Resource management at the layer 3 radio interface are defined in 3GPP TS 24.007 and 3GPP TS 24.008.

The following supplementary services belong to the line identification supplementary services and are described in the present document:

- |  |        |             |
|--|--------|-------------|
| - Calling line identification presentation   | (CLIP) | (clause 1); |
| - Calling line identification restriction    | (CLIR) | (clause 2); |
| - Connected line identification presentation | (COLP) | (clause 3); |
| - Connected line identification restriction  | (COLR) | (clause 4). |

## 0.1 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- |     |  |
|-----|--|
| [1] | 3GPP TS 21.905: "Vocabulary for 3GPP Specifications "                                      |
| [2] | 3GPP TS 22.081: "General on supplementary services".                                       |
| [3] | 3GPP TS 22.081: "Line identification supplementary services - Stage 1".                    |
| [4] | 3GPP TS 22.082: "Call Forwarding (CF) supplementary services - Stage 1".                   |
| [5] | 3GPP TS 22.083: "Call Waiting (CW) and Call Hold (HOLD) supplementary services - Stage 1". |
| [6] | 3GPP TS 22.084: "MultiParty (MPTY) supplementary services - Stage 1".                      |
| [7] | 3GPP TS 22.085: "Closed User Group (CUG) supplementary services - Stage 1".                |
| [8] | 3GPP TS 22.086: "Advice of Charge (AoC) supplementary services - Stage 1".                 |

- [9] 3GPP TS 22.088: "Call Barring (CB) supplementary services - Stage 1".
- [10] 3GPP TS 22.090: "Unstructured Supplementary Service Data (USSD) - Stage 1".
- [11] 3GPP TS 23.011: "Technical realization of supplementary services".
- [12] 3GPP TS 23.081: "Line identification supplementary services - Stage 2".
- [13] 3GPP TS 23.082: "Call Forwarding (CF) supplementary services - Stage 2".
- [14] 3GPP TS 23.083: "Call Waiting (CW) and Call Hold (HOLD) supplementary services - Stage 2".
- [15] 3GPP TS 23.084: "MultiParty (MPTY) supplementary services - Stage 2".
- [16] 3GPP TS 23.085: "Closed User Group (CUG) supplementary services - Stage 2".
- [17] 3GPP TS 23.086: "Advice of Charge (AoC) supplementary services - Stage 2".
- [18] 3GPP TS 23.088: "Call Barring (CB) supplementary services - Stage 2".
- [19] 3GPP TS 23.090: "Unstructured supplementary services operation - Stage 2".
- [20] 3GPP TS 24.007: "Mobile radio interface signalling layer 3; General aspects".
- [21] 3GPP TS 24.008: "Mobile radio interface layer 3 specification".
- [22] 3GPP TS 24.010: "Mobile radio interface layer 3; Supplementary services specification; General aspects".
- [23] 3GPP TS 24.080: "Mobile radio interface layer 3 supplementary services specification; Formats and coding".

## 0.2 Abbreviations

Abbreviations used in the present document are listed in 3GPP TR 21.905.

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# 1 Calling Line Identification Presentation (CLIP)

## 1.1 Normal operation

The calling line identity consists of a calling party BCD number and optionally, a calling party subaddress and/or a cause of no CLI.

The calling party BCD number information element is made up of a number of information units as indicated in 3GPP TS 24.008.

In addition to or instead of the calling party's digits, the subscriber may be given the following information:

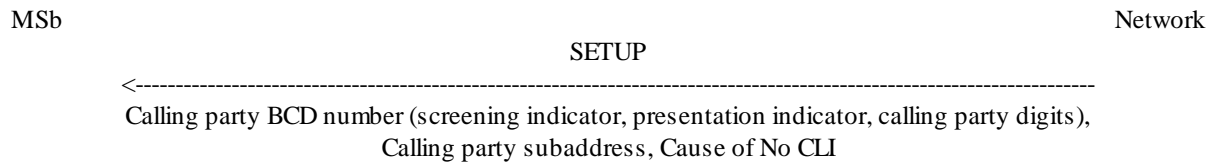
- screening indicator;
- presentation indicator.

Indicator values are given in 3GPP TS 24.008.

The calling party subaddress information element is made up of a number of information units as indicated in 3GPP TS 24.008.

The cause of no CLI information element is made up of a detailed cause of no CLI as indicated in TS 24.008.

A called mobile subscriber subscribing to calling line identification presentation service receives the call with the information indicated above, see figure 1.1.



NOTE: The calling party subaddress is passed to MSb if it is received from the originating network.

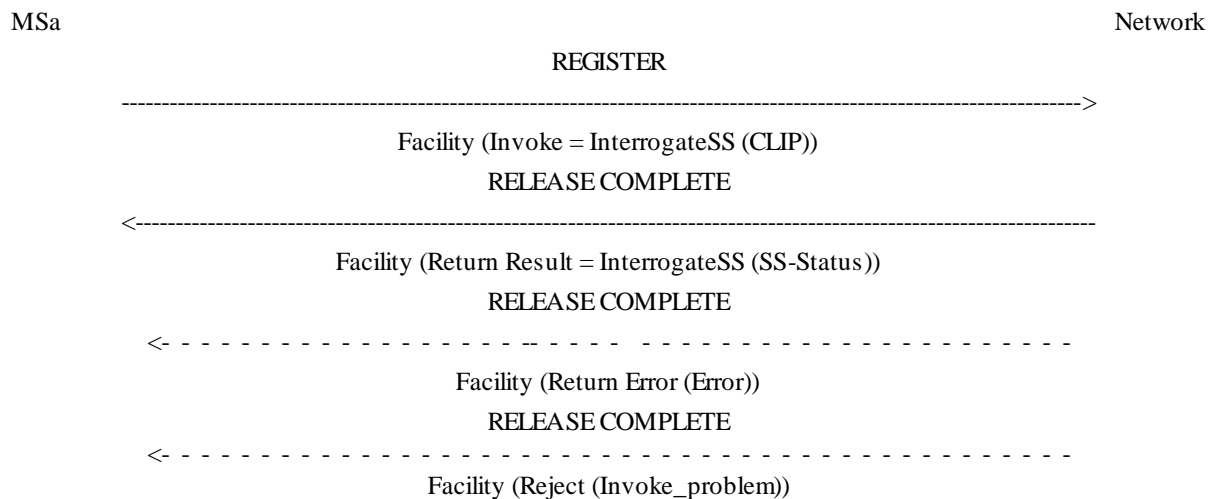
**Figure 1.1: Notification by the network to the called mobile subscriber**

When the calling line identity is not available, the presentation indicator which is given to the called mobile subscriber takes the value of "number not available".

## 1.2 Interrogation

### Status Check

The mobile subscriber can request the status of the supplementary service and be informed if the service is provided to him.



**Figure 1.2: Interrogation of calling line identification presentation**

## 1.3 Activation, deactivation, registration and erasure

Activation, deactivation, registration and erasure of the supplementary service calling line identification presentation are not applicable.

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# 2 Calling Line Identification Restriction (CLIR)

## 2.1 Normal Operation

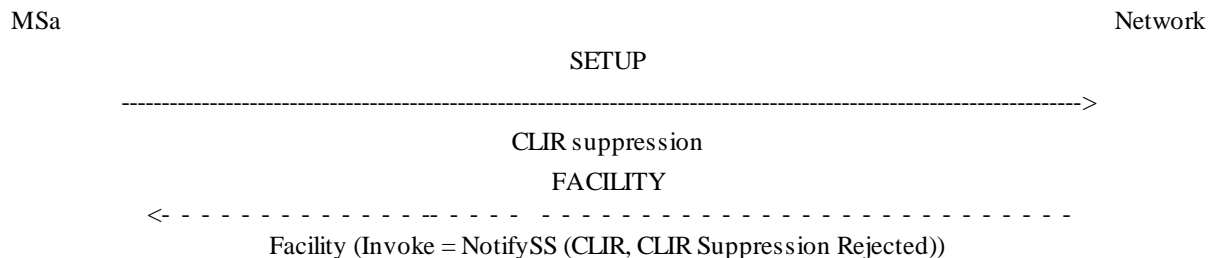
When calling line identification restriction is applicable, the originating network provides the destination network with a notification that the calling party's ISDN number, with possible additional address information, is not allowed to be presented to the called party.

If the called mobile user subscribes to calling line identification presentation and the calling party has calling line identification restriction applied, the called mobile party shall receive the presentation indicator showing "presentation restricted" in the calling party BCD field of the SETUP message, see figure 1.1. In this case, the calling party's number (digits) will not be sent towards the called subscriber.

## 2.2 Requesting presentation of CLI

When the CLIR presentation mode is temporary (presentation restricted), it is possible for the subscriber to present his CLI on a per call basis. The MS shall send a CLIR suppression information element to the network.

If the subscriber tries to override CLIR (i.e. requests that the CLI is displayed), when he has subscribed to permanent mode a NotifySS shall be sent to the MS in order to inform that the override has not been performed and the call set-up shall continue.

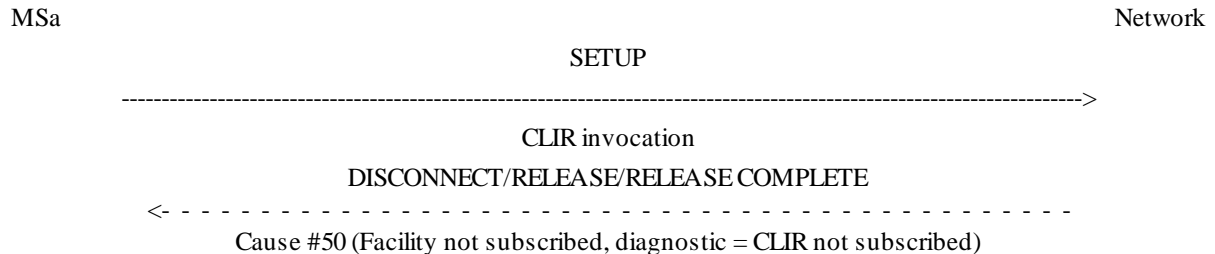


**Figure 2.1: Requesting presentation of CLI**

## 2.3 Requesting restriction of CLI presentation

When the CLIR presentation mode is temporary (presentation allowed), it is possible for the subscriber to restrict the CLI on a per call basis. The MS shall send a CLIR invocation information element to the network.

If the subscriber has not subscribed to CLIR and tries to invoke CLIR (i.e. requests that the CLI is not displayed), the SETUP shall be rejected. The MS and the network shall act in accordance with 3GPP TS 24.008 network initiated call clearing procedure, see figure 2.2.



**Figure 2.2: Requesting restriction of CLI presentation**

## 2.4 Interrogation

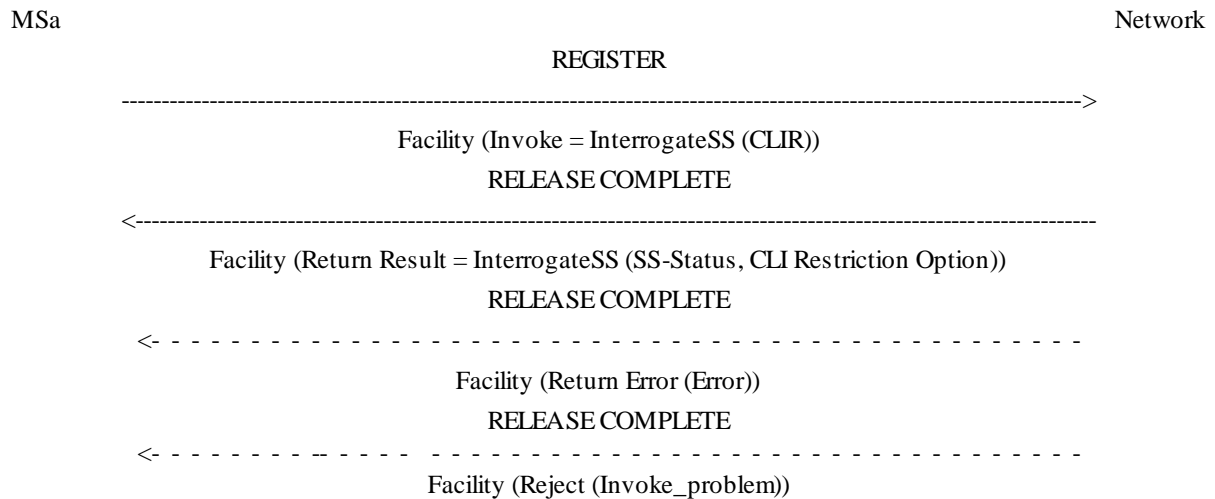
### Data request

The mobile subscriber can request the data of the supplementary service.

If the service is not provisioned the network shall sent a return result including the SS-Status parameter.

If the service is provisioned the network shall sent a return result including the SS-Status and the CLI Restriction Option parameters.





**Figure 2.3: Interrogation of calling line identification restriction**

## 2.5 Activation, deactivation, registration and erasure

Activation, deactivation, registration and erasure of the supplementary service calling line identification restriction are not applicable.

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# 3 Connected Line Identification Presentation (COLP)

## 3.1 Normal operation

The connected line identity consists of a connected number and optionally, a connected subaddress.

The connected number is made up of a number of information units as indicated in 3GPP TS 24.008.

In addition to or instead of the connected number digits, the subscriber may be given the following information:

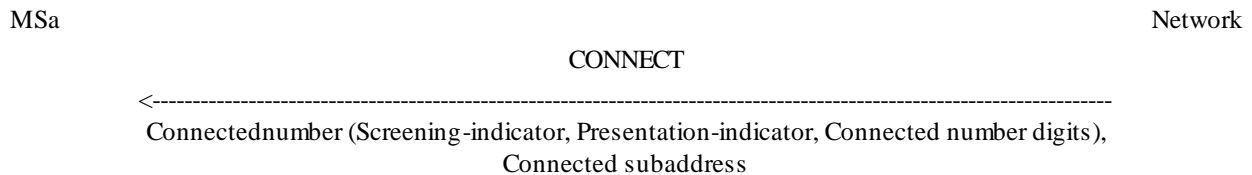
- screening indicator;
- presentation indicator.

Indicator values are given in 3GPP TS 24.008.

In the call set-up phase the calling mobile subscriber receives the information at the end of the call set-up.

The connected subaddress information element is made up of a number of information units as indicated in 3GPP TS 24.008.

A calling mobile subscriber subscribing to connected line identification presentation receives a message with the information indicated above, see figure 3.1.



NOTE: The connected subaddress is passed to MSa if it is received from the terminating network.

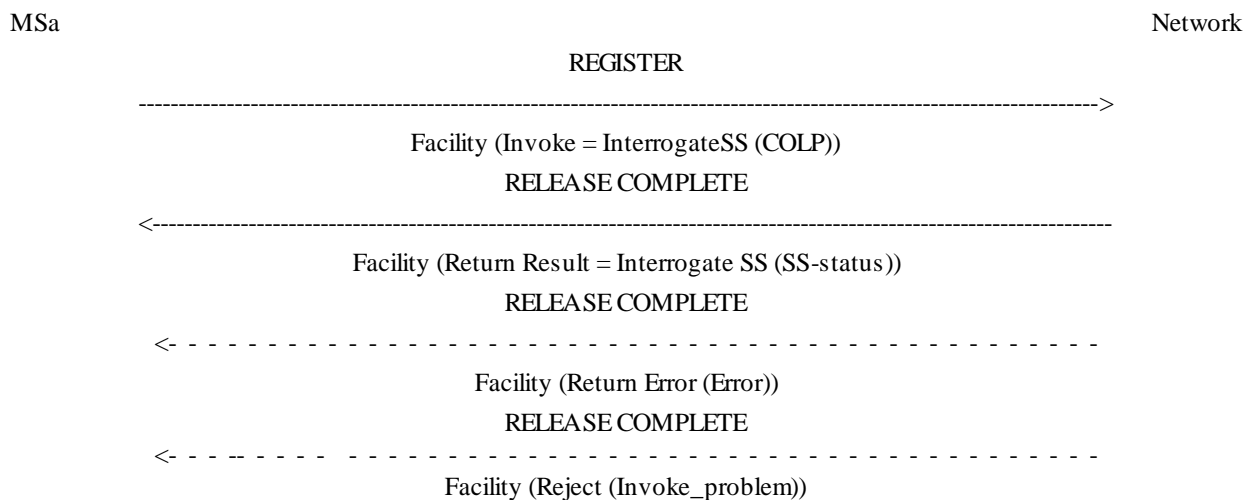
**Figure 3.1: Notification by the network to the calling mobile subscriber**

When the connected line identity is not available (due to interworking or presentation restrictions), appropriate indication information is given to the calling mobile subscriber.

## 3.2 Interrogation

### Status Check

The mobile subscriber can request the status of the supplementary service and be informed if the service is provided to him.



**Figure 3.2: Interrogation of connected line identification presentation**

## 3.3 Activation, deactivation, registration and erasure

Activation, deactivation, registration and erasure of the supplementary service connected line identification presentation is not applicable.

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# 4 Connected Line Identification Restriction (COLR)

## 4.1 Normal operation

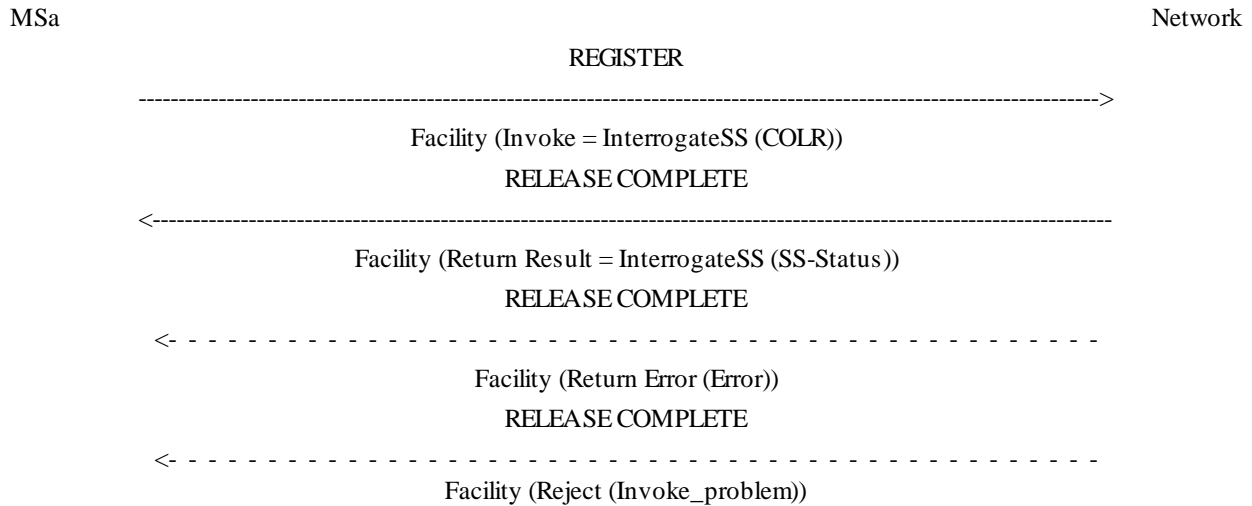
When connected line identification restriction is applicable the destination network provides the originating network with a notification that the connected party's ISDN number, with possible additional address information, is not allowed to be presented to the calling party.

If the calling mobile user subscribes to connected line identification presentation and the connected party has connected line identification restriction applied, the calling mobile party shall receive the presentation indicator showing "presentation restricted", see figure 3.1. In this case, the connected number will not be sent towards the calling subscriber.

## 4.2 Interrogation

### Status Check

The mobile subscriber can request the status of the supplementary service and be informed if the service is provided to him.



**Figure 4.1: Interrogation of connected line identification restriction**

## 4.3 Activation, deactivation, registration and erasure

Activation, deactivation, registration and erasure of the supplementary service connected line identification restriction are not applicable.

## Annex A (informative): Change history

Change history						
TSG CN#	Spec	Version	CR	<Phase>	New Version	Subject/Comment
Apr 1999	GSM 04.81	6.0.0				Transferred to 3GPP CN1
CN#03	24.081				3.0.0	Approved at CN#03
CN#08	24.081	3.0.0	001	R99	3.1.0	Cause of no CLI indication
CN#11	24.081	3.1.0		Rel-4	4.0.0	Release 4 after CN#11
CN#15	24.081	4.0.0		Rel-4	4.0.1	References updated
CN#16	24.081	4.0.1		Rel-5	5.0.0	Release 5 after CN#16
CN#26	24.081	5.0.0		Rel-6	6.0.0	Release 6 after CN#26
CT#36	24.081	6.0.0		Rel-7	7.0.0	Upgraded unchanged from Rel-6
CT#42	24.081	7.0.0		Rel-8	8.0.0	Upgraded unchanged from Rel-7
2009-12	24.081	8.0.0	-	Rel-9	9.0.0	Update to Rel-9 version (MCC)
2011-03	24.081	9.0.0	-	Rel-10	10.0.0	Update to Rel-10 version (MCC)
2012-09	24.081	10.0.0	-	Rel-11	11.0.0	Update to Rel-11 version (MCC)