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GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS

Digital cellular telecommunications system;
Line identification supplementary services - Stage 3
(GSM 04.81 version 5.0.1)

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Special Mobile Group (SMG) Technical Committee (TC) of the European Telecommunications Standards Institute (ETSI).

This ETS 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 digital cellular telecommunications system.

The specification from which this ETS has been derived was originally based on CEPT documentation, hence the presentation of this ETS may not be entirely in accordance with the ETSI/PNE Rules.

Transposition dates	
Date of adoption:	18 April 1997
Date of latest announcement of this ETS (doa):	31 August 1997
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	28 February 1998
Date of withdrawal of any conflicting National Standard (dow):	28 February 1998

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0   Scope

This European Telecommunication Standard (ETS) 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 GSM 04.10 the general aspects of the specification of supplementary services at the layer 3 radio interface are given.

GSM 04.80 specifies the formats and coding for the supplementary services.

Definitions and descriptions of supplementary services are given in GSM 02.04 and GSM 02.8x and GSM 02.9x-series. GSM 02.81 is related specially to line identification supplementary services.

Technical realization of supplementary services is described in GSM 03.11 and GSM 03.8x and GSM 03.9x-series. GSM 03.81 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 GSM 04.07 and GSM 04.08.

The following supplementary services belong to the line identification supplementary services and are described in this ETS:

- 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   Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

[1]   GSM 01.02: "Digital cellular telecommunications system (Phase 2+); General description of a GSM Public Land Mobile Network (PLMN)".

[2]   GSM 02.04   (ETS 300 918):   "Digital   cellular   telecommunications   system (Phase 2+); General on supplementary services".

[3]   GSM 02.81: "Digital cellular telecommunications system; Line identification supplementary services - Stage 1".

[4]   GSM 02.82: "Digital cellular telecommunications system; Call Forwarding (CF) supplementary services - Stage 1".

[5]   GSM 02.83: "Digital cellular telecommunications system; Call Waiting (CW) and Call Hold (HOLD) supplementary services - Stage 1".

[6]   GSM 02.84: "Digital cellular telecommunications system; MultiParty (MPTY) supplementary services - Stage 1".

[7]   GSM 02.85: "Digital cellular telecommunications system; Closed User Group (CUG) supplementary services - Stage 1".

[8]   GSM 02.86: "Digital cellular telecommunications system; Advice of Charge (AoC) supplementary services - Stage 1".

[9]   GSM 02.88: "Digital cellular telecommunications system; Call Barring (CB) supplementary services - Stage 1".

[10]   GSM 02.90: "Digital cellular telecommunications system (Phase 2+); Unstructured Supplementary Service Data (USSD) - Stage 1".

[11]   GSM 03.11 (ETS 300 928): "Digital cellular telecommunications system; Technical realization of supplementary services".

[12]   GSM 03.81: "Digital cellular telecommunications system; Line identification supplementary services - Stage 2".

[13]   GSM 03.82: "Digital cellular telecommunications system; Call Forwarding (CF) supplementary services - Stage 2".

[14]   GSM 03.83: "Digital cellular telecommunications system; Call Waiting (CW) and Call Hold (HOLD) supplementary services - Stage 2".

[15]   GSM 03.84: "Digital cellular telecommunications system; MultiParty (MPTY) supplementary services - Stage 2".

[16]   GSM 03.85: "Digital cellular telecommunications system; Closed User Group (CUG) supplementary services - Stage 2".

[17]   GSM 03.86 (ETS 300 935): "Digital cellular telecommunications system Advice of Charge (AoC) supplementary services - Stage 2".

[18]   GSM 03.88: "Digital cellular telecommunications system; Call Barring (CB) supplementary services - Stage 2".

[19]   GSM 03.90: "Digital cellular telecommunications system; Unstructured Supplementary Service Data (USSD) - Stage 2".

[20]   GSM 04.07 (ETS 300 939): "Digital cellular telecommunications system (Phase 2+); Mobile radio interface signalling layer 3; General aspects".

[21]   GSM 04.08 (ETS 300 940): "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification".

[22]   GSM 04.10 (ETS 300 941): "Digital cellular telecommunications system; Mobile radio interface layer 3; Supplementary services specification; General aspects".

[23]   GSM 04.80 (ETS 300 950): "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 supplementary services specification; Formats and coding".

0.2   Abbreviations

Abbreviations used in the ETS are listed in GSM 01.04.

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.

The calling party BCD number information element is made up of a number of information units as indicated in GSM 04.08.

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 GSM 04.08.

The calling party subaddress information element is made up of a number of information units as indicated in GSM 04.08.

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

```
MSb                                                                                      Network
                                         SETUP
    <--------------------------------------------------------------------------------------------------------
      Calling party BCD number (screening indicator, presentation indicator, calling party digits),
                                Calling party subaddress
```
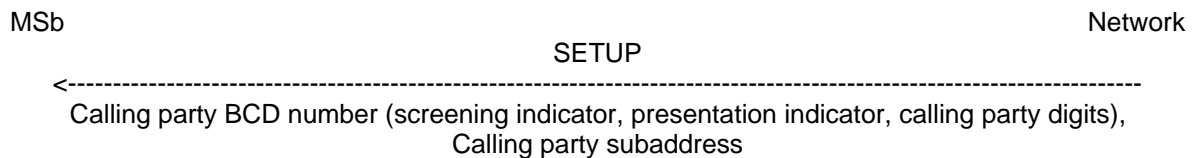
NOTE: The calling party subaddress is passed to MSb if it is received from the originating network.

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.

```
MSa                                                                          Network
                                  REGISTER
    ------------------------------------------------------------------------------->
                      Facility (Invoke = InterrogateSS (CLIP))

                              RELEASE COMPLETE
    <--------------------------------------------------------------------------------
                  Facility (Return Result = InterrogateSS (SS-Status))

                              RELEASE COMPLETE
    <- - - - - - - - - - - - - - - - - -- - - - - - - - - - - - - - - - - - - - - - -
                          Facility (Return Error (Error))

                              RELEASE COMPLETE
    <- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                          Facility (Reject (Invoke_problem))
```

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.

2 Calling Line Identification Restriction (CLIR)

2.1 Normal Operation

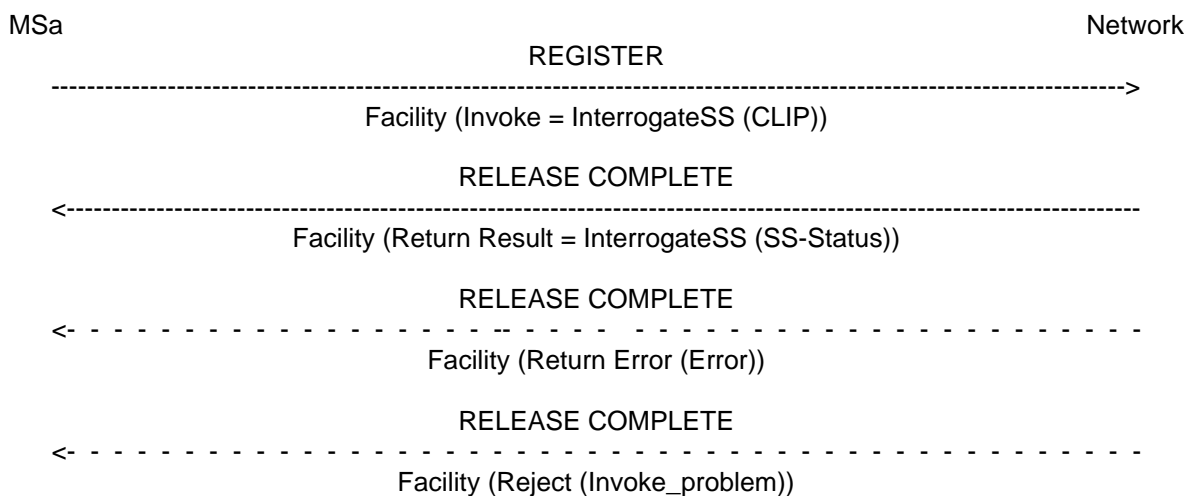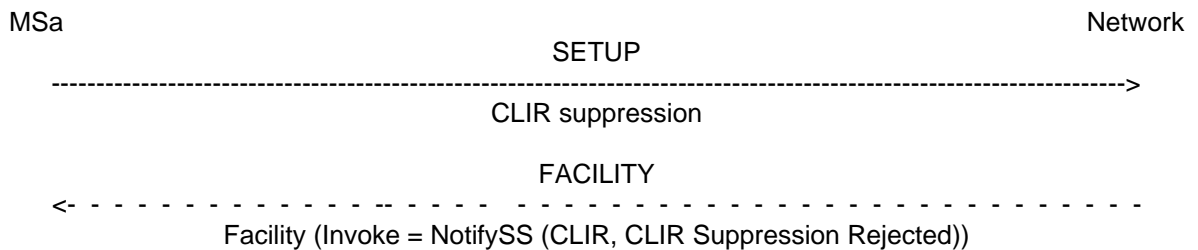When calling line identification restriction is applicable, the originating network provides the destination network with a notification that the calling party's ISDN number, with possible additional address information, is not allowed to be presented to the called party.

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.

```
MSa                                                                          Network
                                   SETUP
   ------------------------------------------------------------------------------------>
                               CLIR suppression

                                  FACILITY
   <- - - - - - - - - - - - - - - -- - - - - - - - - - - - - - - - - - - - - - - - - -
              Facility (Invoke = NotifySS (CLIR, CLIR Suppression Rejected))
```

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 GSM 04.08 network initiated call clearing procedure, see figure 2.2.

```
MSa                                                                          Network
                                   SETUP
   ------------------------------------------------------------------------------------>
                               CLIR invocation

                    DISCONNECT/RELEASE/RELEASE COMPLETE
   <- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
            Cause #50 (Facility not subscribed, diagnostic = CLIR not subscribed)
```
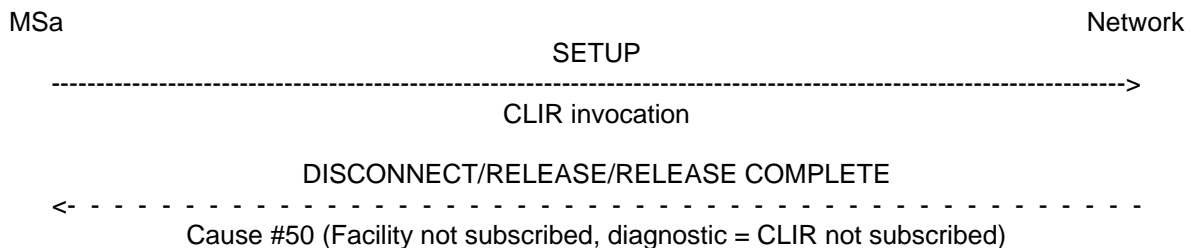
Figure 2.2: Requesting restriction of CLI presentation

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.

```
  MSa                                                                                          Network
                                       REGISTER
  ---------------------------------------------------------------------------------------------------->
                           Facility (Invoke = InterrogateSS (CLIR))

                                   RELEASE COMPLETE
  <----------------------------------------------------------------------------------------------------
            Facility (Return Result = InterrogateSS (SS-Status, CLI Restriction Option))

                                   RELEASE COMPLETE
  <- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                           Facility (Return Error (Error))

                                   RELEASE COMPLETE
  <- - - - - - - - - - -- - - - -  - - - - - - - - - - - - - - - - - - - - - - -- - - - - - -
                           Facility (Reject (Invoke_problem))
```
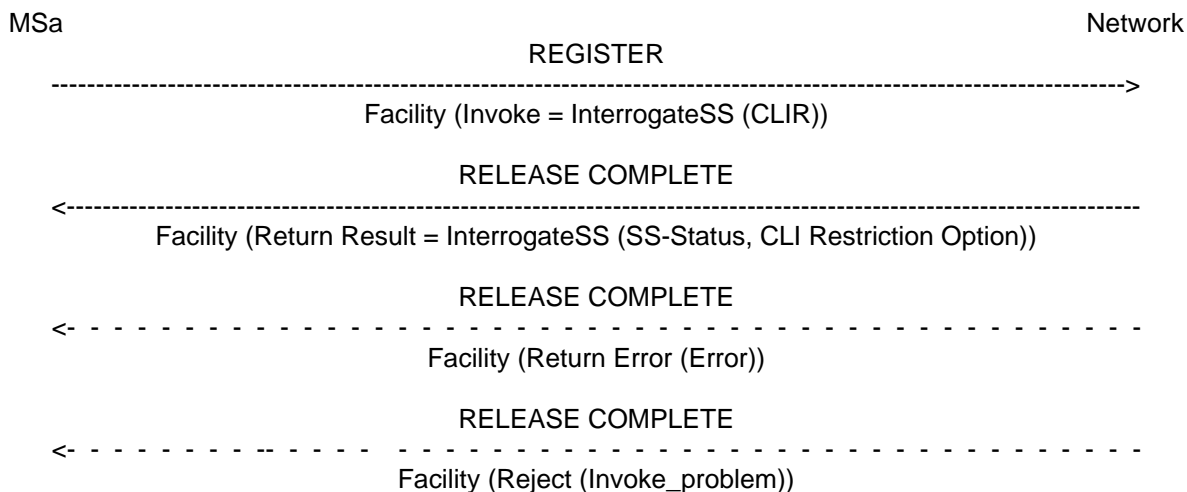
Figure 2.3: Interrogation of calling line identification restriction

2.5   Activation, deactivation, registration and erasure

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

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 GSM 04.08.

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 GSM 04.08.

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 GSM 04.08.

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

```
MSa                                                                              Network
                                    CONNECT
   <-------------------------------------------------------------------------------------------------------------
   Connectednumber (Screening-indicator, Presentation-indicator, Connected number digits),
                              Connected subaddress
```

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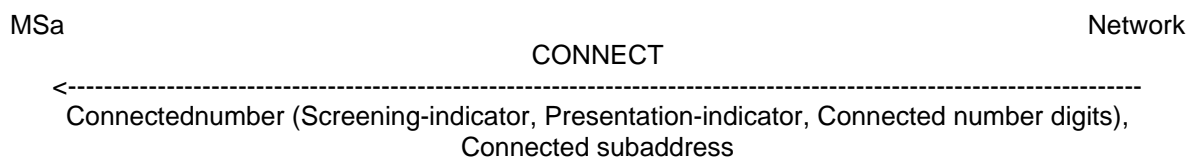
The mobile subscriber can request the status of the supplementary service and be informed if the service is provided to him.

```
 MSa                                                                                    Network
                                          REGISTER
   ------------------------------------------------------------------------------------------->
                         Facility (Invoke = InterrogateSS (COLP))

                                      RELEASE COMPLETE
   <------------------------------------------------------------------------------------------
                     Facility (Return Result = Interrogate SS (SS-status))

                                      RELEASE COMPLETE
   <- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                              Facility (Return Error (Error))

                                      RELEASE COMPLETE
   <- - - - -- - - - - -  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                             Facility (Reject (Invoke_problem))
```
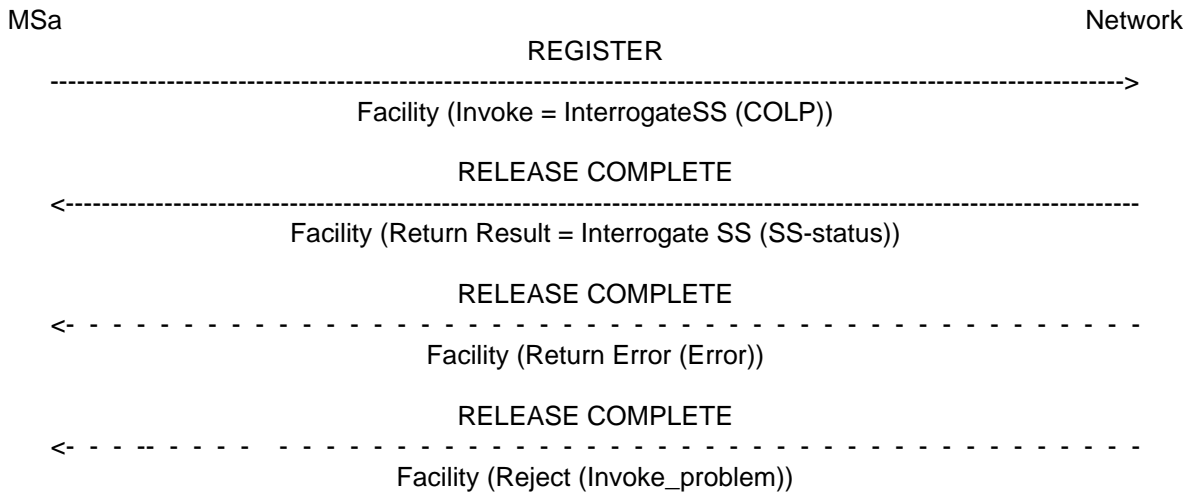
Figure 3.2: Interrogation of connected line identification presentation

3.3   Activation, deactivation, registration and erasure

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

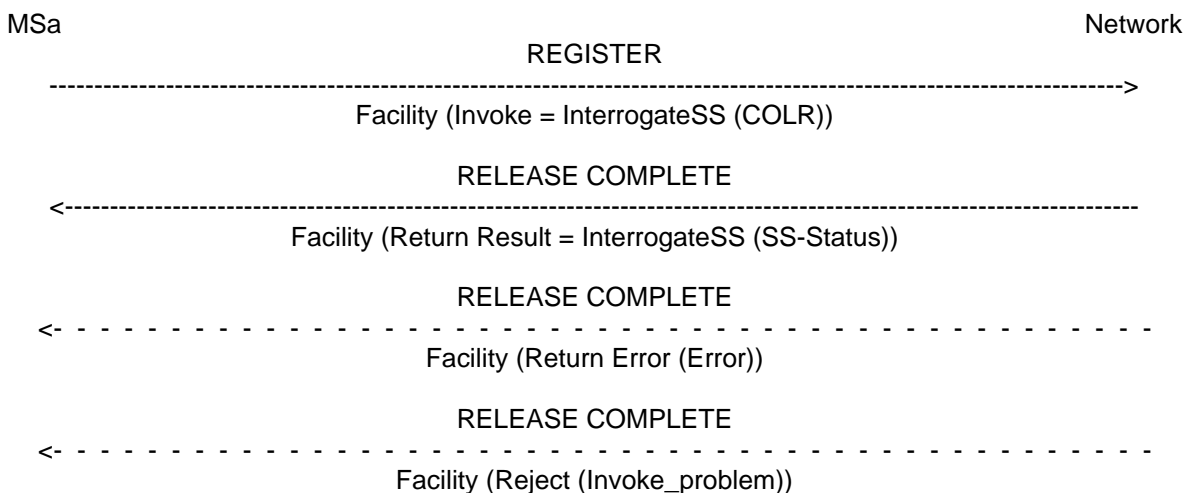# 4 Connected Line Identification Restriction (COLR)

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.

```
MSa                                                                                      Network
                                      REGISTER
--------------------------------------------------------------------------------------------->
                        Facility (Invoke = InterrogateSS (COLR))

                                 RELEASE COMPLETE
<--------------------------------------------------------------------------------------------
                    Facility (Return Result = InterrogateSS (SS-Status))

                                 RELEASE COMPLETE
<- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                            Facility (Return Error (Error))

                                 RELEASE COMPLETE
<- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                          Facility (Reject (Invoke_problem))
```

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):   Status of GSM 04.81

Status of Technical Specification GSM 04.81		
Date	**Version**	**Remarks**
		No phase 1 version
January 1992	version 4.0.0	TS approved by SMG#01
April 1992	version 4.1.0	Change request approved by SMG#02: CR 04.81-01 rev 1 (category C)
June 1992	version 4.1.1	Change request approved by SMG#03: CR 04.81-02 (category D)
January 1993	version 4.1.2	Change request approved by SMG#05: CR 04.81-03 (category D)

April 1993	version 4.1.3	Change request approved by SMG#06:
		  CR 04.81-04 rev 1 (category D)
		  Reference to MCI removed
		  TS frozen for phase 2 by SMG#06

June 1993	version 4.2.0	Change request approved by SMG#07: CR 04.81-05 (category F)
October 1993	version 4.2.1	TS changed to draft prETS 300 565
April 1994	version 4.3.0	Change request approved by SMG#10: CR 04.81-06 rev 5 (category F)

October 1994	version 4.4.0	Change requests approved by SMG#12:
		  CR 04.81-07 rev 1 (category F)
		  TS changed to final draft prETS 300 565

January 1995	version 4.4.1	TS changed to ETS 300 565 first edition
December 1996	version 5.0.0	GTS converted to draft prETS 300 951 for Release 96
May 1997	version 5.0.1	ETS 300 951 first edition
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History

Document history			
December 1996	Unified Approval Procedure	UAP 61:	1996-12-16 to 1997-04-11
May 1997	First Edition		