ETSI TS 101 395 V7.0.0 (1999-08)

Technical Specification

**Digital cellular telecommunications system (Phase 2+);
Name identification supplementary services;
Stage 2
(GSM 03.96 version 7.0.0 Release 1998)**

**GLOBAL SYSTEM FOR
MOBILE COMMUNICATIONS**

ETSI

Reference
RTS/SMG-030396Q7 (cx003i03.PDF)

Keywords
Digital cellular telecommunications system,
Global System for Mobile communications (GSM)

ETSI

Postal address
F-06921 Sophia Antipolis Cedex - FRANCE

Office address
650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00   Fax: +33 4 93 65 47 16
Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Internet
secretariat@etsi.fr
Individual copies of this ETSI deliverable
can be downloaded from
http://www.etsi.org
If you find errors in the present document, send your
comment to: editor@etsi.fr

ETSI

Contents

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available **free of charge** from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://www.etsi.org/ipr).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Technical Specification (TS) has been produced by the Special Mobile Group (SMG).

The present document describes name identification supplementary services (stage 2) within the digital cellular telecommunications system.

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

Version 7.x.y

where:

7   indicates GSM Phase 2+ Release 1998

x   the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

y   the third digit is incremented when editorial only changes have been incorporated in the specification;

1 Scope

The present document gives the stage 2 description of the Name Identification Supplementary Services.

The group of Name Identification Supplementary Services contains the following Supplementary Service:

CNAP - Calling name presentation (clause 4);

2 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.

- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- For this Release 1998 document, references to GSM documents are for Release 1998 versions (version 7.x.y).

[1] GSM 01.04: "Digital cellular telecommunication system (Phase 2+); Abbreviations and acronyms".

[2] GSM 02.04: "Digital cellular telecommunications system (Phase 2+); General on Supplementary Services".

[3] GSM 03.11: "Digital cellular telecommunications system (Phase 2+); Technical realization of supplementary services".

[4] GSM 03.16: "Digital cellular telecommunications system (Phase 2+); Subscriber Data Management - Stage 2".

[5] GSM 03.81: "Digital cellular telecommunications system (Phase 2+); Line Identification Supplementary Services - Stage 2".

3 Definitions and Abbreviations

3.1 Definitions

Definition of name identity:

The name identity is made up of the following information unit:

- The name of the mobile subscriber for the purpose of calling name presentation - up to 80 characters of information associated with a specific calling party.

The calling name identity is the name identity of the calling party.

Definition of Presentation Indicator:

In addition to or instead of the name identity, the network may give a Presentation Indicator to the called mobile subscriber of the CNAP service. The following information may be given:

- Presentation Indicator (PI) showing:

    a) presentation restricted, or

    b) name unavailable.

Calling Name Information:

The calling name information of the calling party includes either the calling name identity or an indication of privacy or unavailability.

3.2   Abbreviations

In addition to the following abbreviations used in the present document, abbreviations are listed in GSM 01.04.

    CNAP   Calling Name Presentation.

4   Calling Name Presentation (CNAP)

4.1   Handling of calling name presentation

4.1.1   Originating MSC Activities

The originating MSC may include calling name information in the Setup.

4.1.2   Terminating VMSC Activities

The calling name identity shall be provided by the terminating VMSC to the MS. See Figure 3a/3b for details.

The procedures of the name database query are outside the scope of the present document.

The MSC shall determine the presentation indicator to be sent to the CNAP subscriber's MS by combining the presentation indicator in the calling line information (if available), the presentation indicator in the calling name information (if available) and the presentation indicator in the response from the name database (if applicable). The calling name shall be restricted if either the line or name indicator shows the information is to be restricted (and override category is not applicable). The precise handling depends on the structure of the name database and is therefore outside the scope of the present document. An example is shown in annex A.

If a name database query is not possible, e.g. calling line identity is unavailable, name database is not responding, or the name database response timer expires, then the MSC shall send a presentation indicator of name unavailable to the CNAP subscriber's MS.

A character translation may be required by the terminating MSC since the name characters stored in the name database are not using the GSM default alphabet (name characters passed to the CNAP subscriber's MS use the GSM default alphabet). Display of calling name identity to the subscriber is outside the scope of the present document.

4.1.3   Interrogation

Status check

The mobile subscriber can request the status of the supplementary service and be informed if the service is provided to him/her. This procedure is illustrated in figure 1.
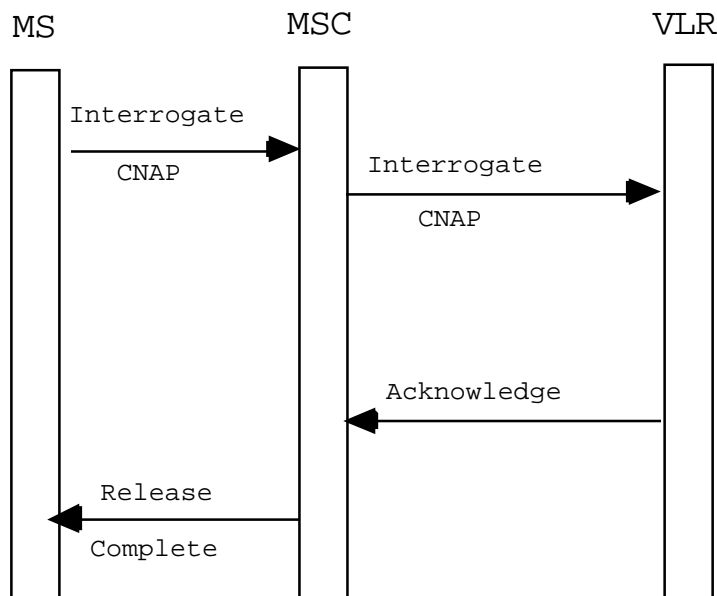
Figure 1: Interrogation of Calling Name Presentation

4.2   Functions and information flows

The following Mobile Additional Functions (MAF) have been identified for the PLMN:

> MAF049
>
>> Determination of the calling name presentation subscription.
>>
>> The ability of a PLMN component to determine whether the supplementary service is provisioned for the mobile subscriber. See figure 3a.
>>
>> Location: VLR.
>
> MAF050
>
>> Determination of the calling party name for offering to the called party.
>>
>> The ability of a PLMN component to determine and to forward the calling name identity and related indications to the called party. See figure 3b.
>>
>> Location: destination MSC.

The information flow is shown in figure 4.

```
         ┌─────────────┐
         │    Idle     │
         └──────┬──────┘
                │
         ┌──────┴──────┐
         │  Initiate   │
         │   CNAP      │
         │  Handling   │
         └──────┬──────┘
                │
           ╱─────────╲                              ┌──────────────┐
          ╱   CNAP    ╲      yes                    │set provision │
          ╲Provisioned?╱──────────────────────────▶│ indication = │
           ╲─────────╱                              │ provisioned  │
                │ no                                └──────┬───────┘
                │                                          │
         ┌──────┴──────┐                            ╱──────────────╲
         │set provision│                           ╱    called      ╲   no
         │ indication =│                           ╲  subscriber    ╱────────────┐
         │not provisioned│                         ╲  in HPLMN      ╱            │
         └──────┬──────┘                            ╲  country?    ╱             │
                │                                     ╲──────┬─────╱             │
                │                                       yes  │                   │
                │                                    ╱───────────╲   no          │
                │                                   ╱  override    ╲────────────┐│
                │                                   ╲  category?   ╱            ││
                │                                    ╲──────┬──────╱            ││
                │                                       yes │                   ││
                │                          ┌──────────────┐ │  ┌──────────────┐ ││
                │                          │set override  │ │  │set override  │◀┘│
                │                          │category = yes│ │  │category = no │◀─┘
                │                          └──────┬───────┘ │  └──────┬───────┘
         ┌──────┴──────┐                          │         │         │
         │  Continue   │◀─────────────────────────┴─────────┘         │
         │    Call     │◀───────────────────────────────────────────┘
         │  Handling   │
         └──────┬──────┘
                │
         ┌──────┴──────┐
         │    Idle     │
         └─────────────┘
```
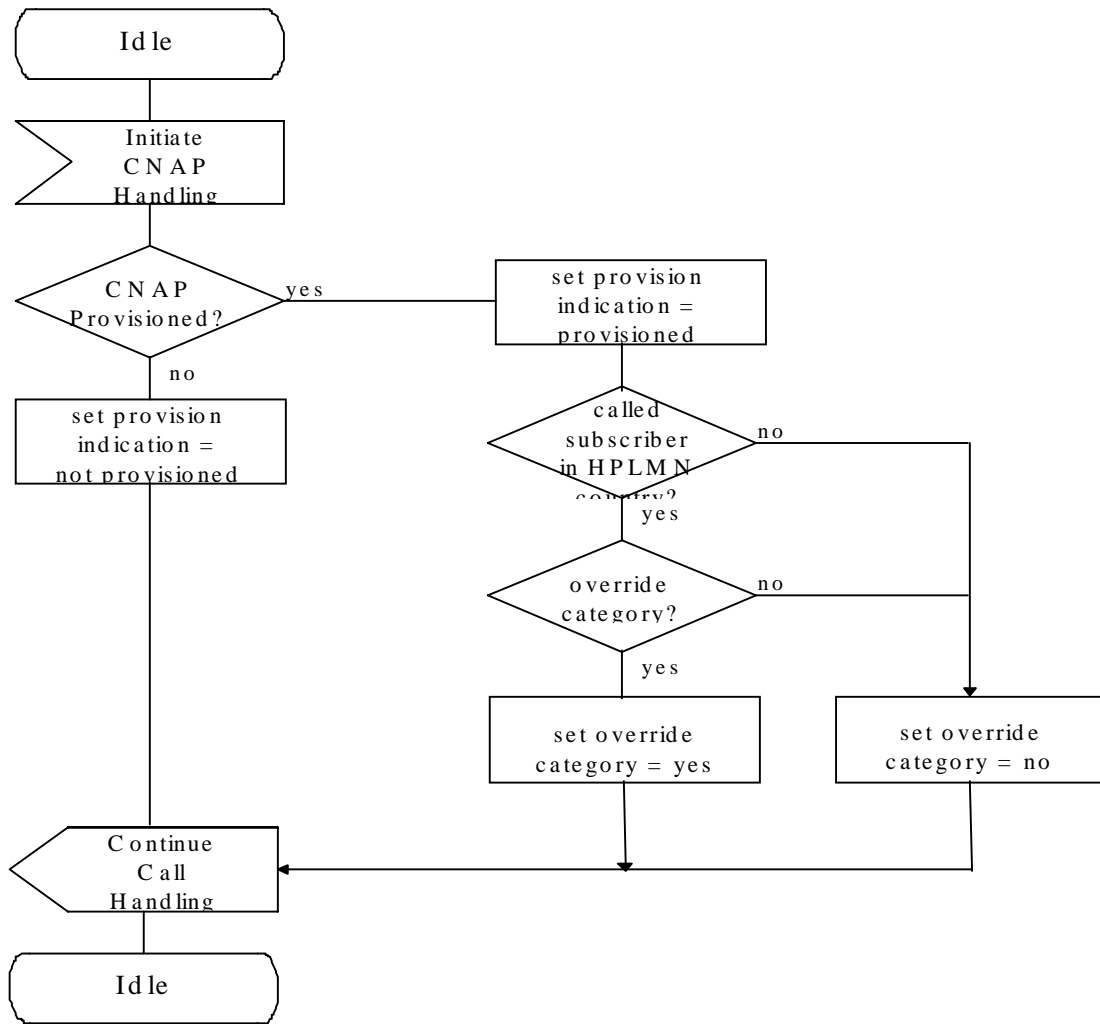
**Figure 2: MAF049 Determination of the calling name presentation subscription
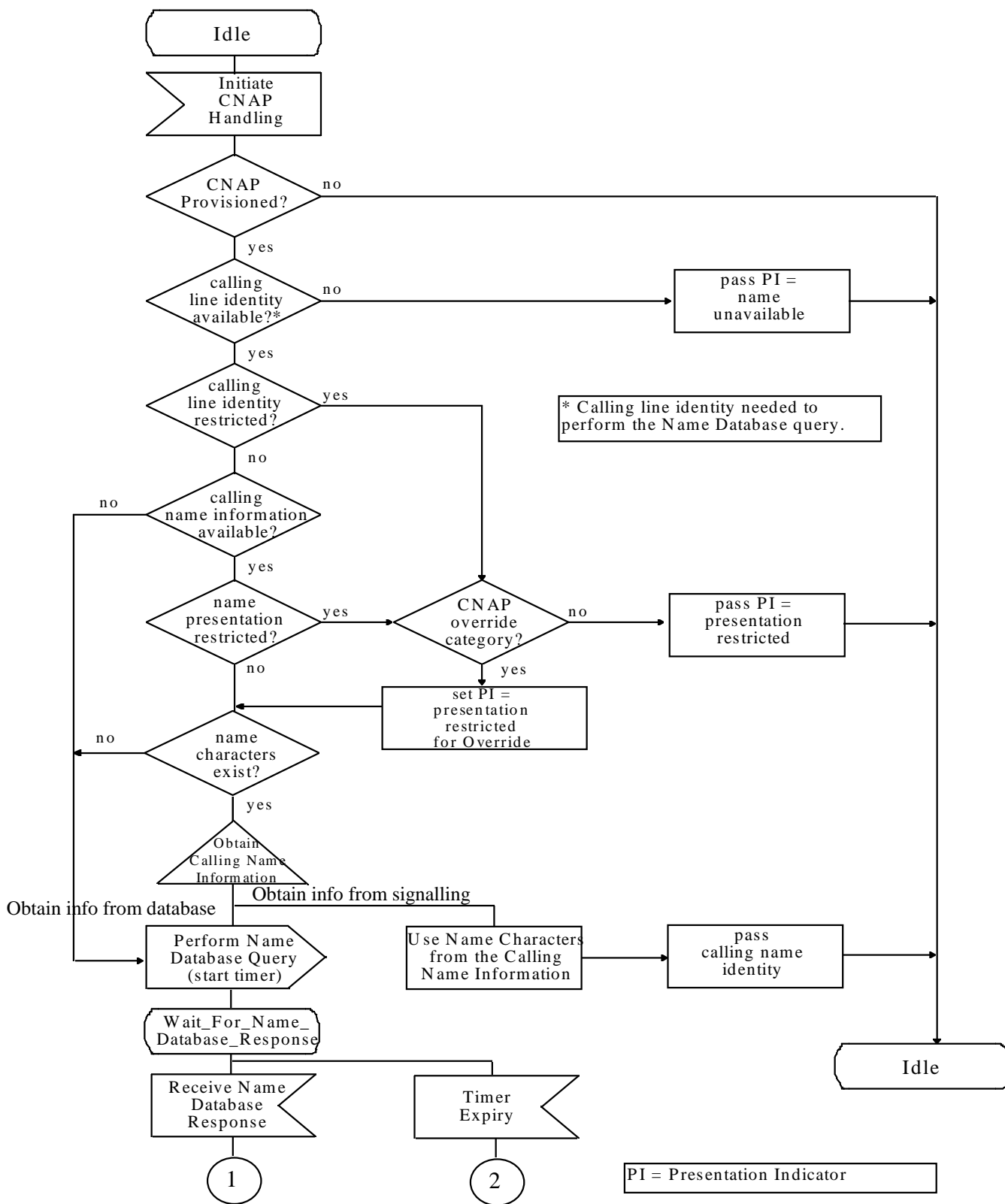(VLR)**

Figure 3a: MAF050(CNAP) Determination of the information for offering to the called party (Sheet 1)
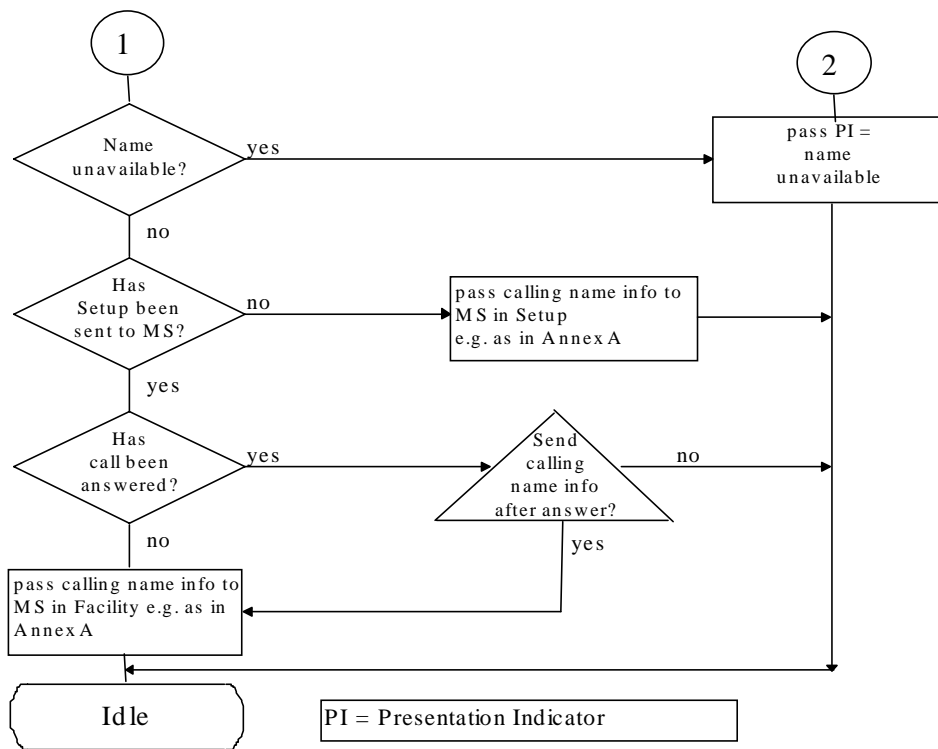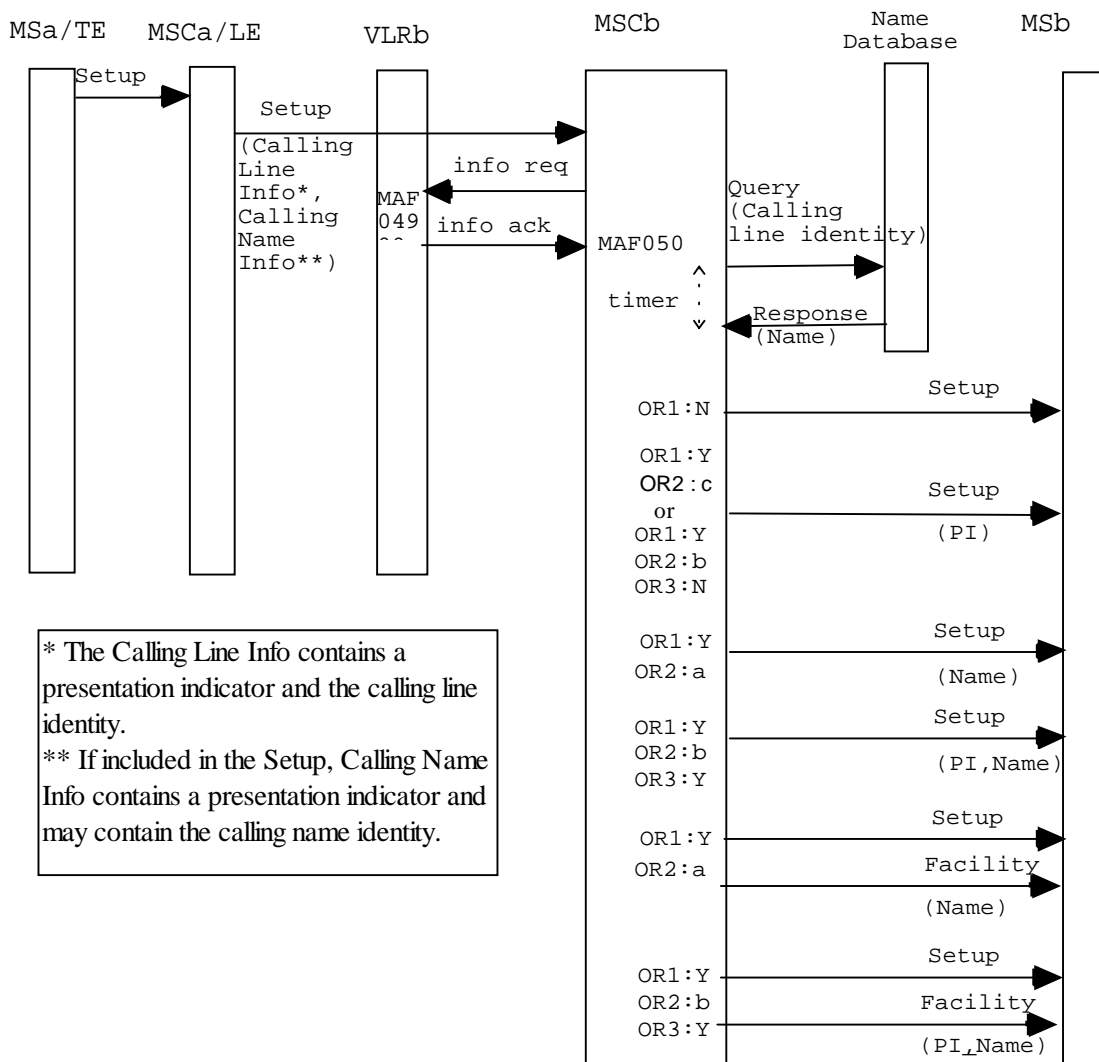
Figure 3b: MAF050(CNAP) Determination of the information for offering to the called party (Sheet 2)

NOTE: OR1: CNAP provisioned — Y: yes
N: no

OR2: Calling Name Info — a: allowed
Presentation Indicator Value — b: restricted
c: unavailable

OR3: Override category — Y: yes
N: no

info: information
req: request
ack: acknowledge
PI: presentation indicator

Figure 4: Information Flow For Calling Name Presentation: Mobile Station Or Fixed Terminal To Mobile Station

4.3 Information stored in the HLR

CNAP may have the following logical states (refer to GSM 03.11 for an explanation of the notation):

Provision State	**Registration State**	**Activation State**	**HLR Induced State**
(Not Provisioned,	Not Applicable,	Not Active,	Not Induced)
(Provisioned,	Not Applicable,	Active and Operative,	Not Induced)

The HLR shall store the logical state of CNAP (which shall be one of the valid state listed above) on a per subscriber basis.

The HLR shall also store the subscription option "override category" on a per subscriber basis. The subscription options are: "Yes" or "No".

4.4 State Transition Model

The following figure shows the successful cases of transition between the applicable logical states of CNAP. The state changes are caused by actions of the service provider.

Note that error cases are not shown in the diagram as they normally do not cause change. Additionally, some successful requests may not cause a state change. Hence they are not shown in the diagram.
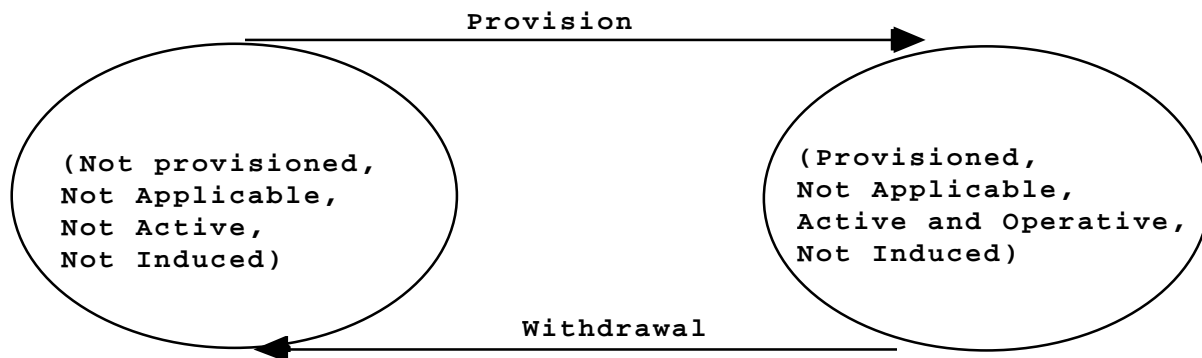

Figure 5: State Transition model for CNAP

4.5 Transfer of information from HLR to VLR

If the provisioning state for CNAP is "provisioned" then, when the subscriber registers on a VLR, the HLR shall send the VLR subscriber information about the logical state of CNAP. Please refer to GSM 03.16 for details related to the handling of supplementary service information between the HLR and VLR.

If the logical state of CNAP or the override category is changed while a subscriber is registered on a VLR, then the HLR shall inform the VLR of the logical state of CNAP. If the override category is changed and the provisioning state of CNAP is "Provisioned", then the HLR shall inform the VLR about the new override category when the VLR is in the HPLMN country. The HLR may inform the VLR about the new override category when the VLR is outside the HPLMN country.

4.6 Information stored in the VLR

For CNAP, the VLR shall store the service state information and override category received from the HLR. If not received from the HLR (in case of roaming outside the HPLMN country), the override category shall be set to the default value "no".

4.7   Handover

Handover will have no impact on the control procedures and the operation of the service.

Annex A:
(Normative for PCS1900) Calling Name Information Setting to the MS

A name database query is performed using the calling party's line identity as specified in ANSI T1.641 "Calling Name Identification Presentation".

The calling name information, which contains the resulting presentation indicator, as shown in Table 1 is sent to the CNAP subscriber's MS.

Table 1: Determination of Calling Name Information sent to CNAP subscriber's MS

Presentation Indicator in Calling Name Information	Presentation Indicator in Name Database	Calling Name Information sent to the CNAP subscriber's MS
Presentation Allowed	Presentation Allowed	Calling Name Identity
	Presentation Restricted	
	Blocking Toggle	
	No Indication	
Presentation Restricted	No Database Query performed	Presentation Restricted[1]
Blocking Toggle	Presentation Allowed	Presentation Restricted[1]
	Presentation Restricted	Calling Name Identity
	Blocking Toggle	Unavailable [2]
	No Indication	Unavailable [2]
No Indication (or No Calling Name Information present)	Presentation Allowed	Calling Name Identity
	Presentation Restricted	Presentation Restricted[1]
	Blocking Toggle	Unavailable [2]
	No Indication	Unavailable [2]

[1] If the override category is set to yes, the MSC shall send the calling name identity and a presentation indicator of presentation restricted to the CNAP subscriber's MS.

[2] These combinations are unexpected: an indication of name unavailable is given.

Annex B (informative):
Status of GSM 03.96

Status of Technical Specification GSM 03.96		
Date	**Version**	**Remarks**
December 1997	version 2.0.0	presented at SMG#24 and approved
September 1998	version 6.0.0	version 6.0.0 created as part of Release 1997
October 1998	version 6.0.1	version 6.0.1 created for publication
August 1999	version 7.0.0	Specification version upgrade to Release 1998 version 7.0.0
Rapporteur: (USA)		
Text and figures : WinWord 6.0 **Stylesheet**: etsiw_60.dot		

History

Document history		
V7.0.0	August 1999	Publication