



ATIS-1000639.1995(R2011)

## Calling Name Identification Restriction



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for Telecommunications –  
Calling Name Identification Restriction

Secretariat

**Alliance for Telecommunications Industry Solutions**

Approved January 9, 1995

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**Foreword** (This foreword is not part of American National Standard T1.639-1995.)

This standard specifies the capabilities required to provide the Calling Name Identification Restriction Supplementary service. Calling Name Identification Restriction (CNIR) is an originating supplementary service that provides an ISDN or non-ISDN CNIP subscriber with the ability to control the presentation of their name information to a Calling Name subscriber. Calling Name Identification Restriction provides three methods to an originating party to influence the presentation status (a.k.a. privacy status) of their name: subscription to a network stored value of "private" or "public" presentation status; modification of the network stored value from "private to public" or "public to private" on a per call basis; and explicit indication of "private" or "public" name presentation status on a per call basis. It also provides for the interexchange transport of calling party name presentation status. This standard was prepared by the Technical Subcommittee on Service, Architecture, and Signalling (T1S1).

There is one annex in this standard. Annex A is informative and is not considered part of this standard.

Suggestions for improvement of this standard will be welcome. They should be sent to Alliance for Telecommunications Industry Solutions, 1200 G Street, NW, Suite 500, Washington, DC 20005.

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# American National Standard for Telecommunications – Calling Name Identification Restriction

## 1 Scope, purpose, and application

### 1.1 Scope and purpose

This standard is one of a series that defines and describes supplementary services. These services may be made available for users with non-ISDN interfaces who access SS7 capable networks and also within the context of an Integrated Services Digital Network (ISDN). This standard describes Calling Name Identification Restriction, which is an originating service that allows a user to alter the network stored or subscribed privacy status associated with the user's Calling Name. The associated switching and signaling specifications are also provided. This service may be made available on demand or in a subscription arrangement. The interaction of this service with other service capabilities defined in American National Standards is also included. The purpose of this standard is to allow maximum compatibility among network and user owned telecommunications equipment in order to increase the attractiveness and usefulness of the additional information transfer capabilities of SS7 and ISDN-based capabilities. When more than one network is involved in the provision of network capabilities or service specified in this standard, bilateral agreements among the networks involved may be required. Such agreements are outside the scope of this standard.

### 1.2 Application

This standard applies to non-ISDN user-network interfaces, ISDN Basic Rate Interfaces and Primary Rate Interfaces. The non-ISDN user-network interfaces are the analog or equivalent digital interfaces specified in *American National Standard for Private Branch Exchange (PBX) Switching Equipment for Voiceband Applications*, ANSI/EIA/TIA 464-A-1989 and supplement ANSI/EIA/TIA 464-A-1-1992, *American National Standard for Telecommunications – Digital Subscriber Signalling System No. 1 (DSS1) – Layer 3 Overview*, ANSI T1.615-1992, and *American National Standard for Telecommunications – Interface between carriers and customer installations – Analog voicegrade switched access lines using loop-start and ground-start signaling*, ANSI T1.401-1993. For ISDN, this standard is intended to supplement the Basic Circuit Mode call procedures described in *American National Standard for Telecommunications – Integrated Services Digital Network (ISDN) – Layer 3 signalling specification for circuit switched bearer services for Digital Subscriber Signaling Number 1 (DSS1)*, ANSI T1.607-1990, and *American National Standard for Telecommunications – Signalling System No. 7 (SS7) – Integrated Services Digital Network (ISDN) User Part*, ANSI T1.113-1995. It should be used in conjunction with the other American National standards for non-ISDN and ISDN supplementary services for a complete understanding of the interactions between this and other services. For ISDN, this supplementary service is applicable to the Speech, Voice-Band Data (3.1 kHz audio), and Data (64 kbit/s unrestricted) Circuit-Mode bearer services identified in *American National Standard for Telecommunications – Integrated Services Digital Network (ISDN) – Circuit Mode Bearer Service Category Description*, ANSI T1.620-1991.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American

ANSI T1.639-1995 (R2011)

National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

ANSI T1.113-1995, *Telecommunications – Signalling system number 7 (SS7) – Integrated services digital network (ISDN) user part*

ANSI T1.114-1992, *Telecommunications – Signalling system number 7 (SS7) – Transaction capability application Part (TCAP)*<sup>1)</sup>

ANSI T1.603-1990, *Telecommunications – Integrated services digital network (ISDN) – Minimal set of bearer services for the primary rate interface*

ANSI T1.604-1990, *Telecommunications – Integrated services digital network (ISDN) – Minimal set of bearer services for the basic rate interface*

ANSI T1.607-1990, *Telecommunications – Integrated services digital network (ISDN) – Layer 3 signaling specification for circuit switched bearer service for digital subscriber signaling system number 1 (DSS1)*

ANSI T1.610-1994, *Telecommunications – Generic procedures for the control of ISDN supplementary services*

ANSI T1.620-1991, *Telecommunications – Integrated services digital network (ISDN) – Circuit mode bearer service category description*

ANSI T1.611-1991, *Telecommunications – Signalling system number 7 (SS7) – Supplementary services for non-ISDN subscribers*

ANSI T1.641-1995, *Telecommunications – Calling Name Identification Presentation*

### **3 Definitions and acronyms**

#### **3.1 Definitions**

**3.3.1 Calling Name:** Up to 15 characters of information associated with a specific calling party number. The exact format of the Calling Name to be delivered is a service provider option.

**3.3.2 Calling Name Identification Restriction User:** This is the party who subscribes to the Calling Name Identification Restriction service and is the calling party.

**3.3.3 network:** In this description, *network* refers to all telecommunications equipment that has any part in processing a call or a supplementary service for the user referred to. It may include local exchanges, transit exchanges, and NT2s but does not include the non-ISDN or ISDN-terminal and is not limited to the “Public” network or any other particular set of equipment.

**3.3.4 service provider:** This is a company, organization, administration, business, etc. that sells, administers, charges for, etc., the service. The service provider may or may not be the provider of the network.

**3.3.5 network stored value:** The baseline presentation status of the calling party’s name from which user modifications are made. This value is stored in the network and methods of populating this value include: service orders for individual calling parties; a default value for a given jurisdiction. The possible values are “private” – presentation of the calling party’s name is restricted, and “public” – presentation of the calling party’s name is allowed.

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<sup>1)</sup> This standard is currently undergoing revision. Contact the secretariat for more recent information.

### 3.2 Acronyms

|       |  |
|-------|--|
| ASN.1 | abstract syntax notation 1                   |
| CLIR  | calling line identification restriction      |
| CNIR  | Calling Name Identification Restriction      |
| CPN   | calling party number                         |
| CWO   | Call Waiting originating                     |
| DB    | database                                     |
| DCW   | dial Call Waiting                            |
| DSS1  | digital subscriber signaling system number 1 |
| EIA   | electronics industries association           |
| GN    | generic name                                 |
| IA5   | international alphabet 5                     |
| IAM   | initial address message                      |
| ISDN  | integrated services digital network          |
| kHz   | kilohertz                                    |
| LE    | local exchange                               |
| MBG   | multilocation business group                 |
| MF    | multifrequency                               |
| NT2   | network termination type 2                   |
| PBX   | private branch exchange                      |
| PPV   | parameter provide value                      |
| SS7   | signaling system number 7                    |
| TA    | terminal adaptor                             |
| TC    | transaction capability                       |
| TCAP  | transaction capability application part      |
| TE    | terminal equipment                           |
| TE1   | terminal equipment type 1                    |
| TE2   | terminal equipment type 2                    |
| TIA   | telecommunications industries association    |
| TR    | transit exchange                             |
| TSP   | terminal service profile                     |

### 4 Description of Calling Name Identification Restriction from the user's perspective

Calling Name Identification Restriction is an originating service that allows a user to alter the network stored or subscribed privacy status associated with the user's Calling Name.

**Table 1 – Subscription options for the  
Calling Name Identification Restriction service**

| <b>Subscription options</b>  | <b>Values</b>     |
|--|-------------------|
| Network stored value   | Public<br>Private |
| Able to switch to the opposite of the subscribed or network stored value | No<br>Yes         |
| Able to force Calling Name private                                       | No<br>Yes         |
| Able to force Calling Name public  | No<br>Yes         |

#### **4.1 Description**

Calling Name Identification Restriction is an originating service that provides a calling party with the means to influence the delivery of the calling party's name. There are three methods of influencing the privacy status of the Calling Name:

- a) Subscription to a network stored value of "private" or "public";
- b) Modification of the network stored value from "private to public" or from "public to private" on a per call basis. Once the call is initiated, the Calling Name resumes its network stored value for subsequent calls;
- c) Explicitly stating whether the Calling Name should be "private" or "public" on a per call basis. Once the call is initiated, the Calling Name resumes its network stored value for subsequent calls. (See interaction with Calling Line Identification Restriction, subclause 4.5.4, as this method could force both the Calling Name and calling number "public" or "private" as a set.)

If the presentation status of the Calling Name is "private" through any of the above methods, the called party will not receive the Calling Name.

#### **4.2 Procedures**

##### **4.2.1 Provision/withdrawal**

The Calling Name Identification Restriction service can be provided on a subscription basis, or, as a service provider option, can be provided to some or all users without subscription. The Calling Name Identification Restriction service can be withdrawn for administrative reasons or at the request of the subscriber.

As a service provider option, the Calling Name Identification Restriction service can be offered with several subscription options. For ISDN service, the subscription options can be specified per ISDN directory number, per ISDN number and bearer service, per terminal service profile (TSP), or per interface as listed in table 1. For analog lines, the same options listed in table 1 can be specified on a per interface basis. If the Calling Name Identification Restriction service is provided to some or all users without subscription, the service provider shall assign subscription values. For example, this service provider option would allow all users to be given a network stored value of "private."

The last two subscription options may be combined with Calling Line Identification Restriction in order to force both Calling Name and Calling Number private or to force both Calling Name and Calling Number public.

## 4.2.2 Normal procedures

### 4.2.2.1 Activation/deactivation

When the user subscribes to Calling Name Identification Restriction the service is active.

### 4.2.2.2 Invocation and operation

Calling Name Identification Restriction is invoked when a user with CNIR initiates a call. The calling party shall receive no notification that Calling Name Identification Presentation is subscribed to by the called party or delivered to the called party.

The invocation and operation procedures for Calling Name Identification Restriction are depicted in figure 1.

#### 4.2.2.2.1 Modification of the network stored value

The user indicates to the network that their Calling Name presentation status for this one call is to be the opposite of the network stored value. The user receives an indication from the network that the request has been accepted. The user's request for the opposite of the network stored value becomes a part of the call information when the user initiates this one call.

#### 4.2.2.2.2 Force name information private

The user indicates to the network that the Calling Name presentation status is to be "private" for this one call regardless of the network stored value. The user receives an indication from the network that the request has been accepted. The user's request for a "private" presentation status becomes a part of the call information when the user initiates this one call.

#### 4.2.2.2.3 Force name information public

The user indicates to the network that the Calling Name presentation status is to be "public" for this one call regardless of the network stored value. The user receives an indication from the network that the request has been accepted. The user's request for a "public" presentation status becomes a part of the call information when the user initiates this one call.

## 4.2.3 Exceptional procedures

If the user requests the network to force the Calling Name "private" and the network stored value is "private", no error indication will be given to the user.

If the user requests the network to force the Calling Name "public" and the network stored value is "public", no error indication will be given to the user.

The user may modify the presentation status of the name only once per call. If the user requests the network to force the Calling Name to "private" and to "public" for the same call, then the associated call attempt by the user will fail. If the user requests the network to switch the network stored name value to its opposite and also requests the network to force the Calling Name to "private" or to "public" for the same call, then the associated call attempt by the user will fail. If a user attempts to modify the network stored value, to force the Calling Name "private", or to force the Calling Name "public" and is not subscribed, then the user will receive an error indication.

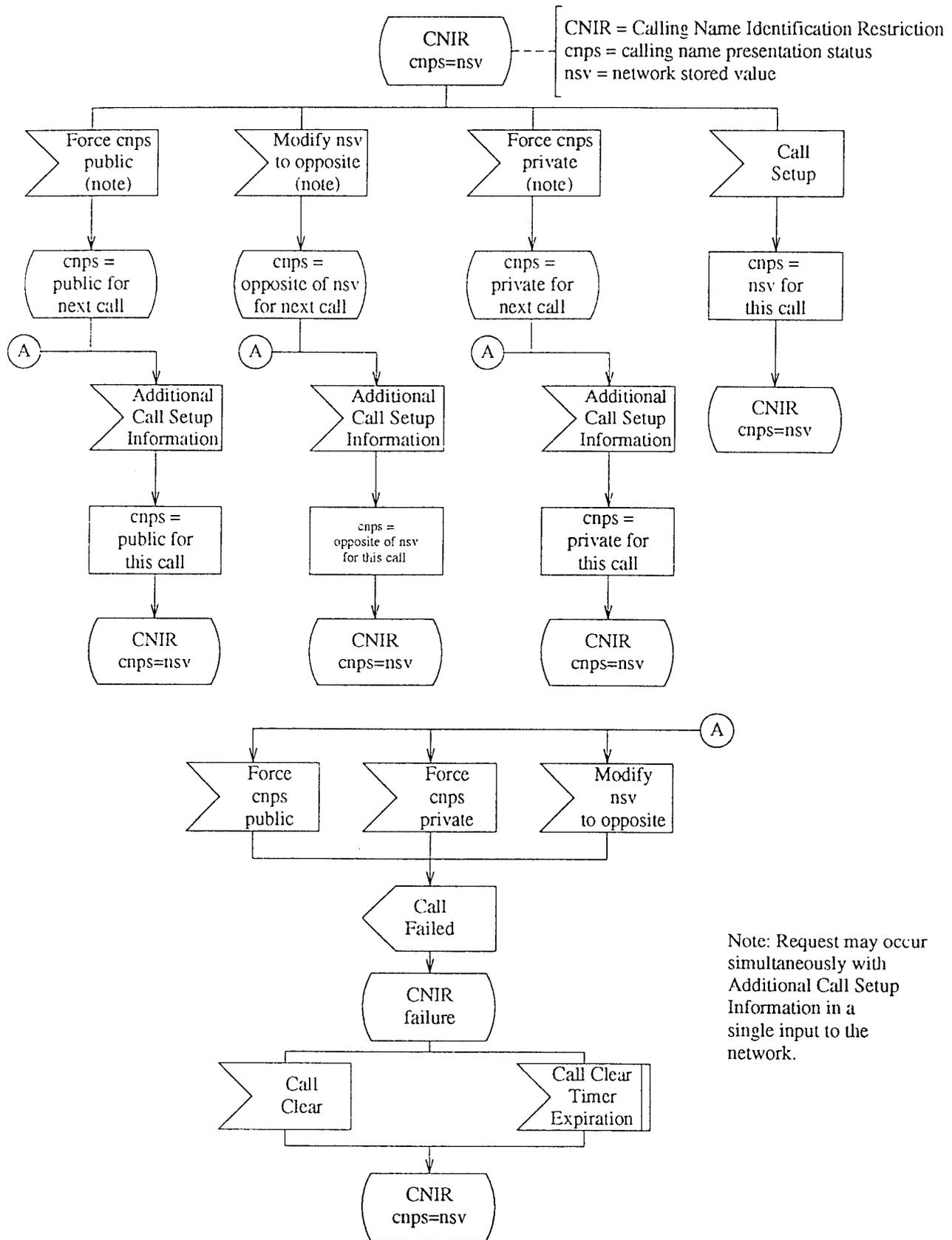
If the user requests the network to switch the network stored value to its opposite and then again requests the network to switch the stored network value to its opposite prior to making a call, the associated call attempt by the user will be failed by the network.

## 4.3 Interworking considerations

If SS7 connectivity does not exist between the originating exchange and the terminating exchange, it shall not be possible to support Calling Name Identification Restriction.

## 4.4 Capabilities for charging

It shall be possible for the network provider to charge accurately for this service.



Note: Request may occur simultaneously with Additional Call Setup Information in a single input to the network.

Figure 1 – SDL diagram for Calling Name Identification Restriction (network perspective)

## **4.5 Interactions with other supplementary services**

### **4.5.1 Calling Name Identification Presentation**

The name of the calling user shall not be presented if the Calling Name presentation status for the call is private.

### **4.5.2 ISDN Normal Call Transfer**

There are no interactions between ISDN Normal Call Transfer (see ANSI T1.632) and Calling Name Identification Restriction.

### **4.5.3 ISDN Call Waiting**

There are no interactions between ISDN Call Waiting (see ANSI T1.613) and Calling Name Identification Restriction.

### **4.5.4 ISDN Calling Line Identification Restriction (CLIR)**

If a user subscribes to CLIR (see ANSI T1.625), and Calling Name Identification Restriction, there may be situations where the end user would want to temporarily change the network stored public/private value for both the Calling Name and number. There may also be situations where the end user would want to temporarily change the permanent public/private status of only the calling number and not the Calling Name, or vice versa. It may be possible as a service provider option to activate both CLIR and Calling Name Identification Restriction with a single activation code, as well as to activate the service separately with other activation codes. This would prevent users from having to dial two access codes to activate CLIR and Calling Name Identification Restriction for a call.

### **4.5.5 ISDN Calling Line Identification Presentation (CLIP)**

There are no interactions between ISDN Calling Line Identification Presentation (see ANSI T1.625) and Calling Name Identification Restriction.

### **4.5.6 ISDN Multi-level Precedence and Preemption**

There are no interactions between Calling Name Identification Restriction and ISDN Multi-level Precedence and Preemption (see ANSI T1.619).

### **4.5.7 ISDN call hold**

There are no interactions between Calling Name Identification Restriction and ISDN Call Hold (see ANSI T1.616).

### **4.5.8 ISDN Message Waiting Indicator Control and Notification and non-ISDN Voice Message Waiting Indicator Control**

There are no interactions between Calling Name Identification Restriction and ISDN Message Waiting Indicator Control and Notification and non-ISDN Voice Message Waiting Indicator Control (see ANSI T1.622).

### **4.5.9 ISDN User-to-User Signaling**

There are no interactions between Calling Name Identification Restriction and ISDN User-to-User Signaling (see ANSI T1.621).

### **4.5.10 Non-ISDN call forwarding**

A call that undergoes call forwarding retains the calling user's "private" or "public" presentation status as requested by the Calling Name Identification Restriction subscriber. There are no interactions between non-ISDN Call Forwarding (see ANSI T1.611) and Calling Name Identification Restriction.

#### **4.5.11 Non-ISDN Multilocation Business Group (MBG)**

##### **4.5.11.1 Non-ISDN Multilocation Business Group (MBG) basic call**

There are no interactions between non-ISDN Multilocation Business Group Basic Call (see ANSI T1.611) and Calling Name Identification Restriction.

##### **4.5.11.2 Non-ISDN Multilocation Business Group (MBG) three-way calling**

Each leg in the context of a three-way call is treated separately for Calling Name Identification Restriction. The public/private status of one call leg has no effect on the public/private status of the other call leg. There are no interactions between non-ISDN Multilocation Business Group Three-Way Calling (see ANSI T1.611) and Calling Name Identification Restriction.

##### **4.5.11.3 Non-ISDN Multilocation Business Group (MBG) call transfer**

There are no interactions between non-ISDN Multilocation Business Group Call Transfer (see ANSI T1.611) and Calling Name Identification Restriction.

##### **4.5.11.4 Non-ISDN Multilocation Business Group (MBG) Call Waiting Originating (CWO)/Dial Call Waiting (DCW)**

There are no interactions between non-ISDN Multilocation Business Group Call Waiting Originating/Dial Call Waiting (see ANSI T1.611) and Calling Name Identification Restriction.

##### **4.5.11.5 Non-ISDN Multilocation Business Group (MBG) N-way conferencing**

There are no interactions between non-ISDN Multilocation Business Group N-Way Conferencing (see ANSI T1.611) and Calling Name Identification Restriction.

#### **4.5.12 Non-ISDN Multilocation Business Group (MBG) Automatic Recall/Automatic Callback**

Automatic Recall allows users to return calls to the last person that called them. Automatic Callback allows users to return calls to the last station that they called. If the other party is busy when either service is invoked, the network will monitor both parties until they are free and then offer the call to the served user.

##### **4.5.12.1 Automatic recall**

Prior to invocation of Automatic Recall (see ANSI T1.611), the user may invoke Calling Name Identification Restriction as described in 4.2.2.2.1, 4.2.2.2.2, and 4.2.2.2.3.

##### **4.5.12.2 Automatic callback**

Any invocation of Calling Name Identification Restriction for the original call will be repeated when the network uses Automatic Callback (see ANSI T1.611) to make another attempt unless the user invokes Calling Name Identification Restriction as described in 4.2.2.2.1, 4.2.2.2.2, and 4.2.2.2.3 prior to activating Automatic Callback.

## **5 Functional capabilities and information flows for the Calling Name Identification Restriction service**

This clause identifies the functionality split among the network elements and user equipments that supports the Calling Name Identification Restriction service. It shows each of the configurations of equipment that are supported by this standard and the allocations of functions to each piece of network equipment. There may be other configurations that could be supported by these standardized procedures. This standard does not preclude other configurations.

### **5.1 Network and user equipment**

The network and user equipment shown are based on the “functional groupings” defined in ANSI T1.615. While these functional groupings may correspond to actual physical entities, actual implementations may incorporate more than one of these functional groupings in a single physical entity or may provide a subset of one of these functional groupings.

The functional groupings used in this standard are:

TE Terminal Equipment – in the configurations, this could be a TE1 (ISDN Terminal) or a TA (Terminal Adaptor)/TE2 (non-ISDN Terminal) combination.

NT2 Network Termination 2 – in the configurations, this could be a PBX, multiplexer, key system, etc.

LE Local Exchange – in the configurations, this is the switch in the public network to which “users” are connected.

DB Database – in the configurations, the location of the stored Name Information (not defined in ANSI T1.615).

TR Transit Exchange – in the configurations, this is a switch that provides connection between two Local Exchanges.

## 5.2 Protocols

In this standard, the protocols used between these functional groupings, when the functional groupings are implemented as separate entities, are as follows:

TE to LE: DSS1, as described in ANSI T1.607 and ANSI T1.610

NT2 to LE: DSS1, as described in ANSI T1.607 and ANSI T1.610

LE to DB: SS7 TCAP, as described in ANSI T1.114

LE to TR: SS7 ISDN-UP, as described in ANSI T1.113

LE to LE: SS7 ISDN-UP, as described in ANSI T1.113  
SS7 TCAP, as described in ANSI T1.114

For termination to non-ISDN parties, the protocol used for the LE to non-ISDN interface may be any protocol that provides the necessary information transfer.

## 5.3 Supported configurations

The equipment configurations supported by this standard are depicted in figure 2. Each configuration in figure 2 identifies which network equipment performs the originating and terminating functions of the service. The equipment providing the Calling Name Identification Restriction service, that is, the one where the subscription exists, is highlighted with double lines. Equipment and interfaces not covered by this standard are shown with dashed lines.

In each case in which a TR is shown, additional configurations having no TR or having multiple TRs are also possible.

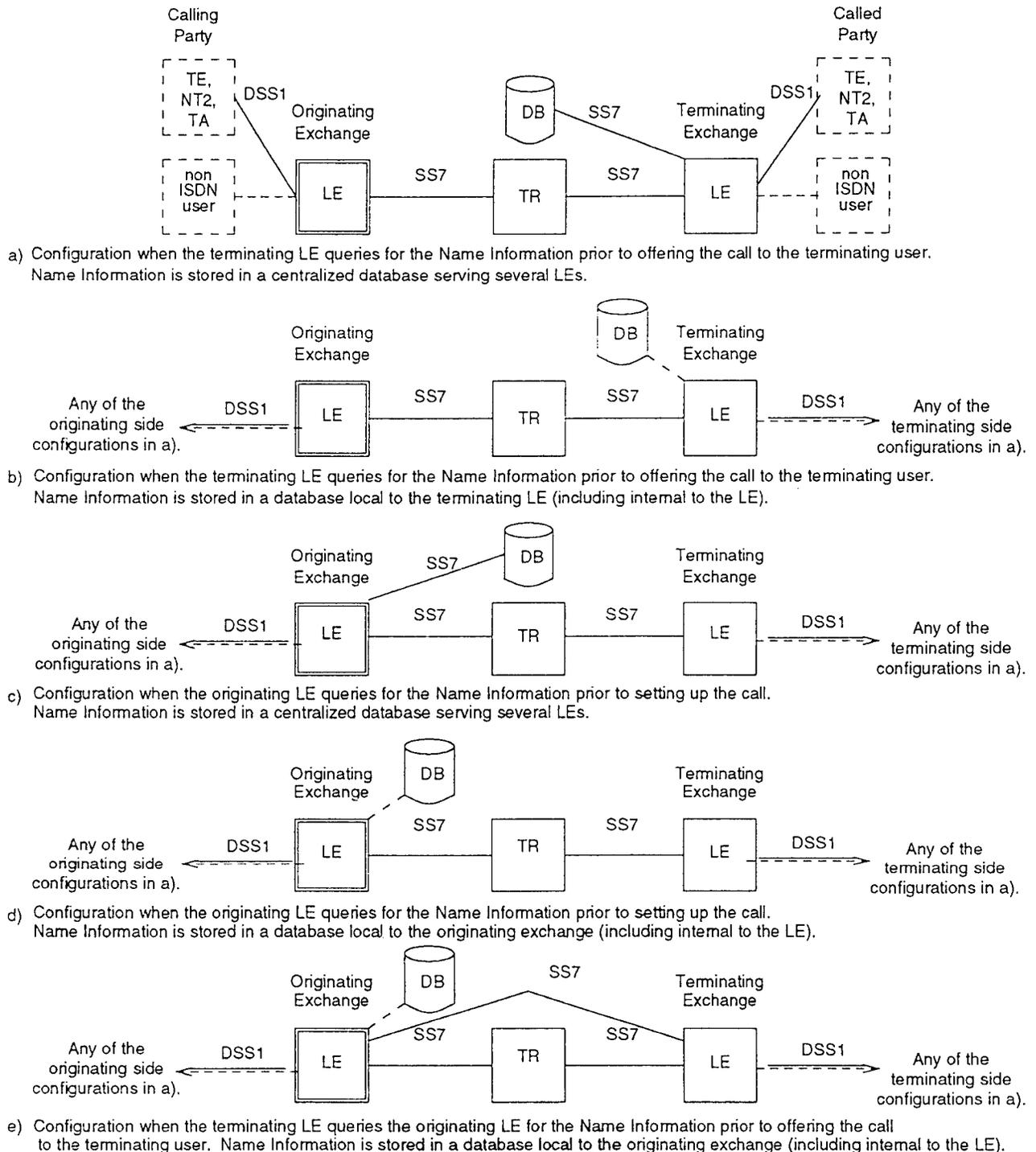
## 5.4 Information flows

Information flows for the configurations identified in 5.3 are given in figures 3 through 8. Each figure shows, in time sequence from top to bottom, the sequence of information exchanges (messages) for one general case (for example, successful invocation of privacy) for one type of configuration. Each information transfer indicates a generic name for the message (as used in clause 4), a generic identification of contents significant to this service, and the actual name of the message found in clause 7.

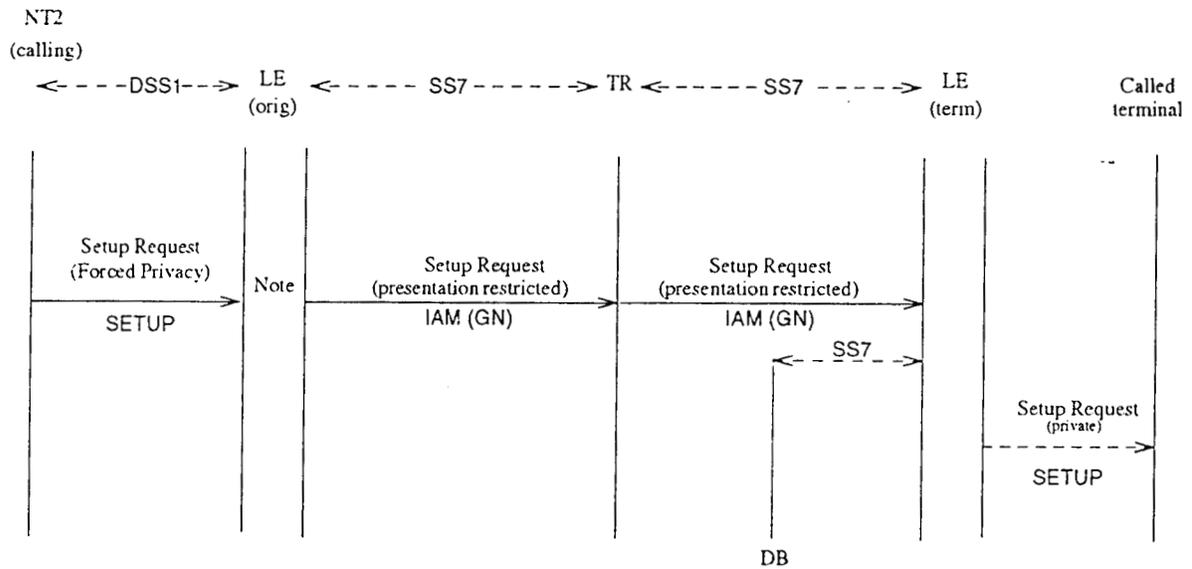
Where significant to the understanding of the flow, actions performed within a “functional grouping” such as decision making, checking subscription parameters, or setting timers are included on the information flows.

The user–network interface signaling shown applies to ISDN interfaces. For non-ISDN interfaces, the information flow “Setup Request” would be provided by a protocol not described in this standard; for example, off-hook and dialing from the calling terminal and ringing and inband signals between the ringing cycles to the called terminal.

Other information flows not covered by this standard are shown with dashed lines.

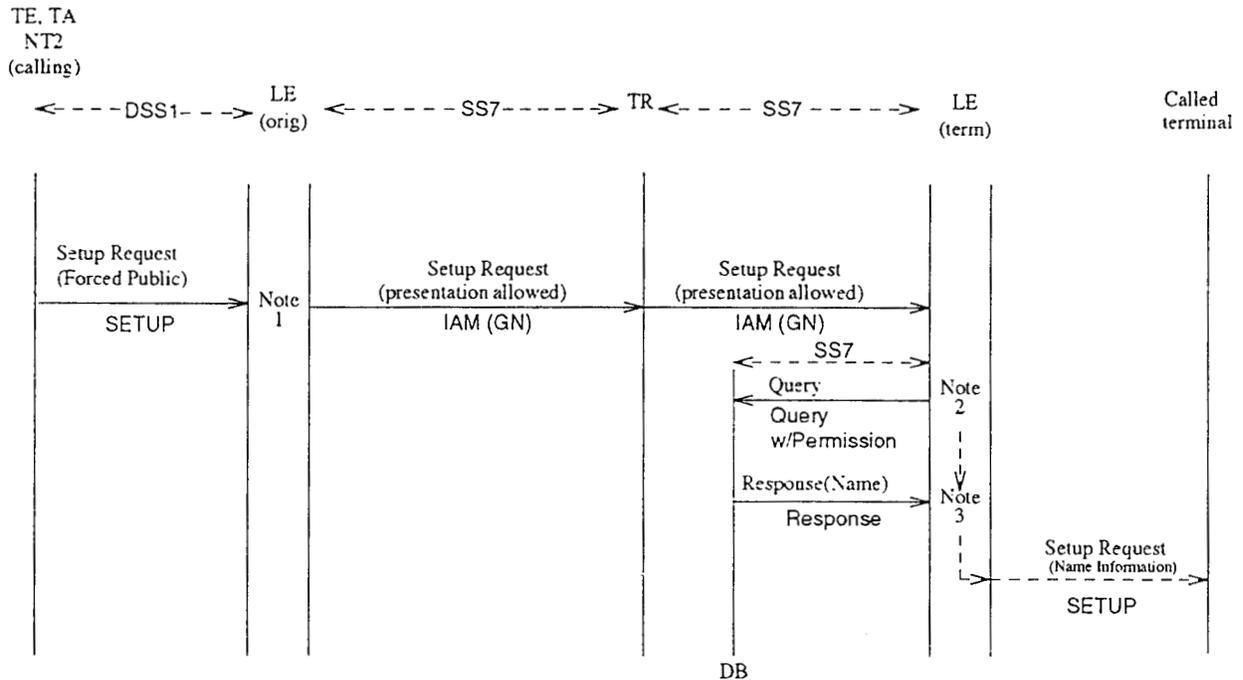


**Figure 2 – Configurations of equipment for the Calling Name Identification Restriction service**



NOTE – Check for subscription of calling party to Calling Name Identification Restriction.  
 NOTE – Check for subscription of calling party to Calling Name Identification Restriction.

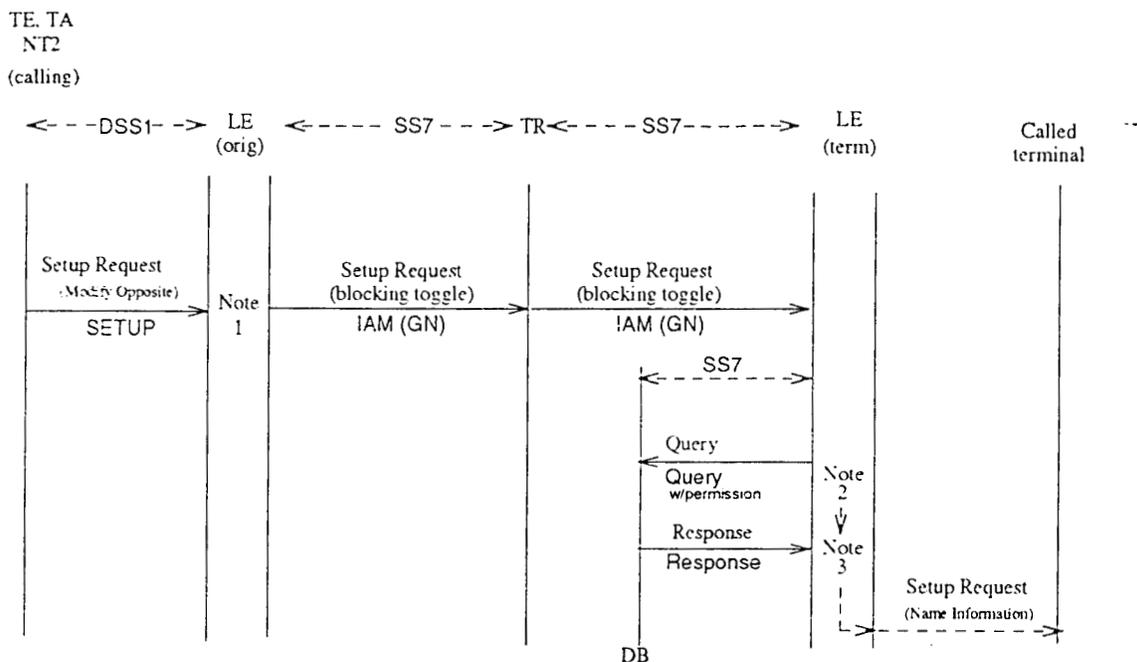
**Figure 3 – Information flow for a successful request of Forced Privacy of Name Information for configuration a)**



**NOTES**

- 1 Check for subscription of calling party to Calling Name Identification Restriction.
- 2 Start response timer.
- 3 Decide whether name characters, unavailable, or private is sent to the called party.

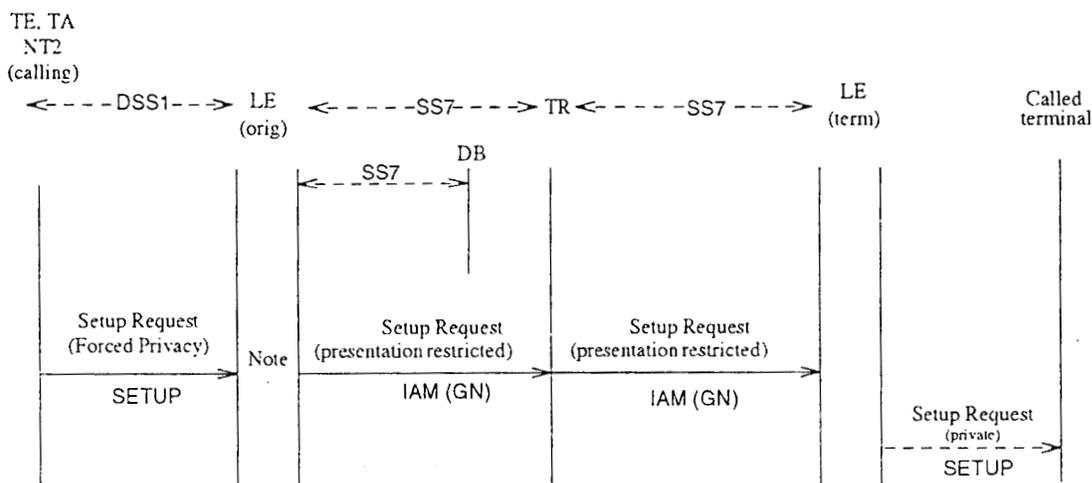
**Figure 4 – Information flow for a successful request of Forced Name Information Public for configuration a)**



NOTES

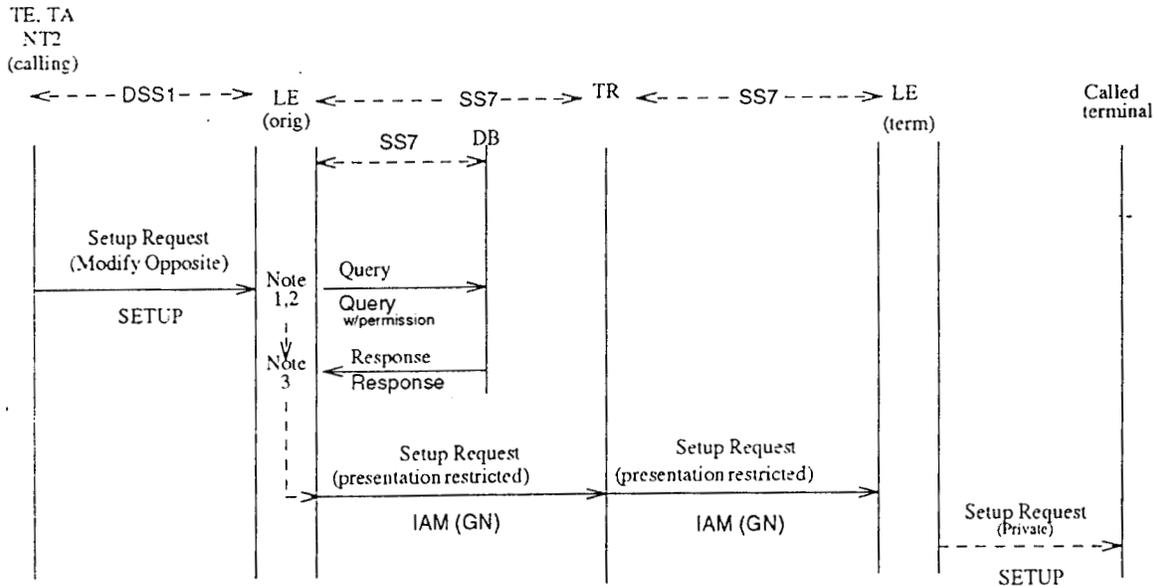
- 1 Check for subscription of calling party to Calling Name Identification Restriction.
- 2 Start response timer.
- 3 Decide whether name characters, unavailable, or private is sent to the subscriber.

**Figure 5 – Information flow for a successful modification of the network stored value for configuration a)**



NOTE – Check for subscription of calling party to Calling Name Identification Restriction.

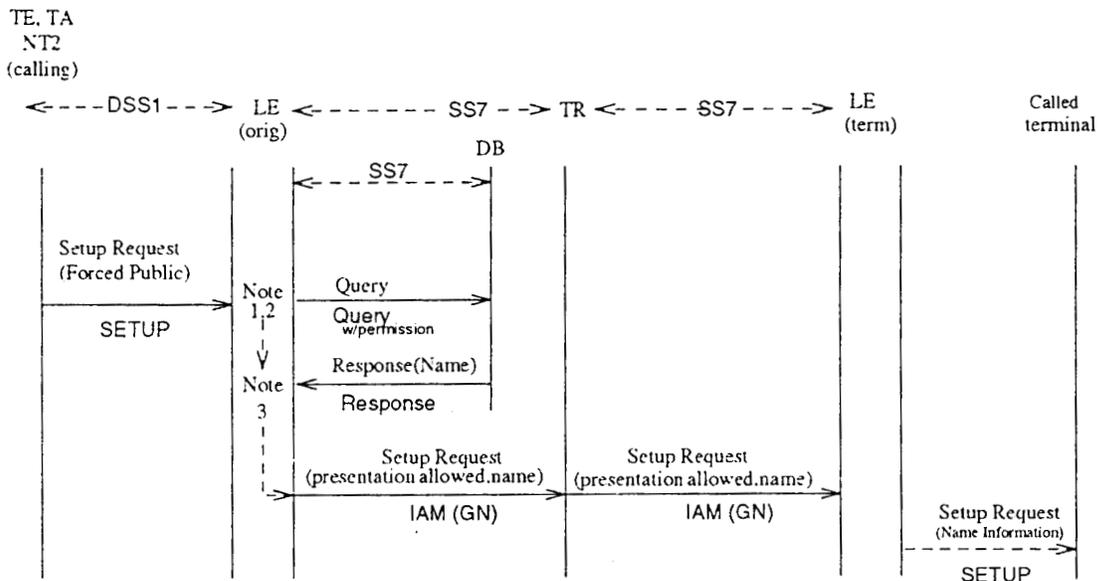
**Figure 6 – Information flow for a successful request of Forced Privacy of Name Information for configuration c)**



NOTES

- 1 Check subscription of calling party to Calling Name Identification Restriction.
- 2 Start response timer.
- 3 Decide whether availability, status, or characters are to be sent in the Setup Request.

**Figure 7 – Information flow for a successful request of Forced Name Information Public for configuration c)**



NOTES

- 1 Check subscription of calling party to Calling Name Identification Restriction.
- 2 Start response timer.
- 3 Decide whether availability, status, or characters are to be sent in the SETUP Request.

**Figure 8 – Information flow for a successful modification of network stored value of allowed presentation for configuration c)**

**Table 2 – Cause information element coding for US National Cause Value #53**

| <b>Cause value</b> | <b>Description</b>         | <b>Diagnostics</b>                    | <b>Diagnostic value</b> |
|--------------------|----------------------------|---------------------------------------|-------------------------|
| 53                 | Service operation violated | Short term denial<br>Long term denial | 00000000<br>00000001    |

## **6 Switching and signaling specifications for Calling Name Identification Restriction at the User-Network Interface**

### **6.1 Formats and codings**

This subclause contains the specification of call control messages, information elements and codings needed for Calling Name Identification Restriction.

#### **6.1.1 Messages**

Descriptions of the message structures can be found in ANSI T1.607 and ANSI T1.610.

#### **6.1.2 Information elements**

Coding rules identified in ANSI T1.607 and ANSI T1.610 generally apply to the information elements used in messages for Calling Name Identification Restriction. Only those coding rules specific to Calling Name Identification Restriction are included in the rest of this document. All information elements in this standard use codeset 0.

#### **6.1.3 Codepoints**

##### **6.1.3.1 Cause values in Cause information elements**

To indicate that an error condition has occurred, when a user attempts to change the presentation indicator using stimulus procedures, the Cause information element as defined in 4.5.11 of ANSI T1.607 shall be used with the US National codepoint defined in table 2.

##### **6.1.3.2 Protocol profile in the facility information element**

The protocol profile shall be coded as 1111 “Reserved for ISO (Networking Extensions – ISO/IEC DIS-11582)”, as defined in ANSI T1.610.

#### **6.1.4 Definitions of operations and errors**

ASN.1 description for the modifyNamePrivacyStatus operation is given in table 3.

### **6.2 Support assumptions**

#### **6.2.1 Terminal**

There are no special terminal requirements. Terminals used with Calling Name Identification Restriction supplementary service must support basic call control procedures as specified in ANSI T1.607.

#### **6.2.2 Network**

The originating network maintains subscription parameters for Calling Name Identification Restriction in accordance with 4.2.1.

#### **6.2.3 Applicable protocol classes**

Protocol is specified for Calling Name Identification Restriction using the functional and stimulus class of messages and information elements. At NT2-LE interfaces (see clause 5 for definitions of NT2 and LE), only the functional signaling procedures apply.

**Table 3 – Operations in support of Calling Name Identification Restriction**

|                                   |  |
|-----------------------------------|--|
| IMPORTS                           | OPERATION, ERROR FROM Remote-Operation-Notation<br>{joint-iso-ccitt (2) remote-operations (4) notation (0)}<br>userNotSubscribed<br>supplementaryServiceInteractionNotAllowed<br>proceduralError<br>FROM General-Error-List<br>{ccitt (0) recommendation (0) q (17) 950 (950) general-error-list (1)};<br>callingName FROM<br>{iso (1) standard (0) pss1-name (0) name-operation (0)}; |
| modifyNamePrivacyStatus OPERATION |  |
| RESULT                            |  |
| ERRORS                            | {UserNotSubscribed,<br>supplementaryServiceInteractionNotAllowed,<br>proceduralError}  |
| ::= {1 2 840 10005 0 3}           |  |

#### 6.2.4 Service states and timers

There are no additional states or timers associated with the operation of Calling Name Identification Restriction.

### 6.3 Procedures

#### 6.3.1 Activation/deactivation

Activation and deactivation of the Calling Name Identification Restriction supplementary service may be by subscription or by explicit request on a per-call basis, depending on the selection of the subscription options defined in 4.2.1.

If the user has not subscribed to any mode of the Calling Name Identification Restriction service, the presentation indicator received in the SETUP or successive INFOrmation messages shall be ignored by the originating network, and that network shall always set the presentation indicator to allowed.

#### 6.3.2 Invocation and operation

##### 6.3.2.1 Normal operation at the originating switch

###### 6.3.2.1.1 Network stored value of public

If the network stored value is set to “public” and if the calling user has not invoked modification or forcing Calling Name “private” or “public” the network provided name is given a presentation status of “public”.

###### 6.3.2.1.2 Network stored value of private

If the network stored value is set to “private” and if the calling user has not invoked modification or forcing Calling Name “private” or “public”, the network provided name is given a presentation status of “private”.

### **6.3.2.1.3 Per-call modification of the network stored value**

#### **6.3.2.1.3.1 Functional signaling procedures**

If a Facility information element with a modifyNamePrivacyStatus operation is received in the SETUP message, then the network will override the network stored value of the Calling Name privacy status to “public” if the network stored value is “private”, and to “private” if the network stored value is “public”.

#### **6.3.2.1.3.2 Stimulus signaling procedures**

If a Feature Activation information element with “feature identifier = modify network stored value” is received in the SETUP message or a successive INFOrmation message (provided called party digits have not been completed), then the network will override the network stored value of the Calling Name privacy indicator to “public” if the network stored value is “private”, and to “private” if the network stored value is “public”.

Alternatively, dial access procedures utilizing the Keypad facility information element may be used as described in ANSI T1.610.

If a Keypad facility information element with “access code = modify network stored value” or a feature activation information element with “feature identifier = modify network stored value” is received in the SETUP message or a successive INFOrmation message (provided called party digits have not been completed), then the network will invoke Information request procedures as described in 4.5.2.2 of ANSI T1.610.

If the network receives the access code or feature identifier in the SETUP message, but no called party information is included, the network shall include an information request information element, coded to prompt the user for address digits in the SETUP ACKnowledge message returned to the user.

If the network receives the access code or feature identifier in a subsequent INFOrmation message, the network shall include an information request information element, coded to prompt the user for address digits in an INFOrmation message returned to the user.

After receipt of the user request for modification of the network stored privacy value as a dialed access code, the network will override the network stored value of the Calling Name privacy indicator to “public” if the network stored value is “private”, and to “private” if the network stored value is “public”.

When this change is complete, and if the user has a feature identifier assigned, the network will return a Feature indication information element coded as “feature identifier = modify network stored value” with status indicator of “activated” in a SETUP ACKnowledge, INFOrmation, or CALL PROCEEDing message, as appropriate.

If the call is connected and if the user has a feature identifier associated with the request, the network will return a Feature Indication information element coded as “feature identifier = modify network stored value” with status indicator of “deactivated” in a CONNECT message or in an INFOrmation message, as appropriate.

If the call is cleared without being connected and if the user has a feature identifier associated with the request with a status of “activated,” the network will return a Feature Indication information element coded as “feature identifier = modify network stored value” with status indicator of “deactivated” in the first clearing message or in an INFOrmation message, as appropriate.

### **6.3.2.1.4 Per-call forcing Calling Name information public or private**

#### **6.3.2.1.4.1 Functional signaling procedures**

If a Facility information element with the NamePresentationRestricted argument of the Name argument of the callingName operation coded to namePresentationRestrictedNull is received in

the SETUP message, then the network will override the network stored value of the Calling Name privacy indicator to “private”. If a Facility information element with the NamePresentationAllowed argument of the Name argument of the callingName operation coded to namePresentationAllowedSimple is received in the SETUP message, then the network will override the network, stored status of the Calling Name privacy indicator to “public”.

#### **6.3.2.1.4.2 Stimulus signaling procedures**

If a Feature activation information element with “feature identifier = force name status to private” or with “feature identifier = force name status to public” is received in the SETUP message or a successive INFOrmation message (provided called party digits have not been completed), then the network will override the network stored value of the Calling Name privacy indicator to “private” or “public” respectively.

Alternatively, dial access procedures utilizing the Keypad facility information element may be used as described in ANSI T1.610.

If either a Keypad facility information element with “access code = force name status to private” or with “access code = force name status to public” or a feature activation information element with a “feature identifier = force name status to public” or with a “feature identifier = force name status to private” is received in the SETUP message or a successive INFOrmation message (provided called party digits have not been completed), then the network will invoke Information request procedures as described in 4.5.2.2 of ANSI T1.610.

If the network receives the access code or feature identifier in the SETUP message, but no called party information is included, the network shall include an information request information element, coded to prompt the user for address digits in the SETUP ACKnowledge message returned to the user.

If the network receives the access code or feature identifier in a subsequent INFOrmation message, the network shall include an information request information element, coded to prompt the user for address digits in an INFOrmation message returned to the user.

After receipt of the user request for modification of the network stored privacy value as a dialed access code, the network will override the network stored value of the Calling Name privacy status to “public” or “private”, as appropriate.

When this change is completed the network will return a Feature indication information element coded as “feature identifier = force name status private “ or “ feature identifier = force name status public” with status indicator of “ activated ” in a SETUP ACKnowledge, INFOrmation, or CALL PROCEEDing message, as appropriate.

If the call is connected, and if the user has a feature identifier associated with the request, the network will return a Feature Indication information element coded with “feature identifier = force name status private” or with “feature identifier = force name status public” and with status indicator of “deactivated” in the CONNECT message or in an INFOrmation message, as appropriate.

If the call is cleared without being connected, and if the user has a feature identifier associated with the request with a status of “activated”, the network will return a Feature Indication information element coded with “feature identifier = force name status private” or with “feature identifier = force name status public,” and with a status indicator of “deactivated” in the first call clearing message or in an INFOrmation message, as appropriate.

#### **6.3.3 Error handling**

The network shall modify the presentation status of the name only once during a call when it receives the request in a SETUP or INFOrmation message. If the network receives a second request for Calling Name Identification Restriction prior to sending the CALL PROCEEDing message, the network shall reject the request and initiate call clearing with national specific cause #53 “service operation violated” with diagnostic “short-term denial”.

### **6.3.3.1 Functional Signaling Procedures**

Error procedures described in 6.3 of ANSI T1.610 for common element procedures will apply. Additionally, if a Facility information element with the modifyNamePrivacyStatus or callingName operation is received by the network:

- a) after the terminal has begun to send called party address digits, using Keypad facility information elements; or
- b) after the terminal has sent called party address digits, using the called party number information element; or
- c) outside the context of a call,

a return error component with the proceduralError error value will be sent to the user in a FACILITY or a call control message.

The network will reject a request to “modify network stored value,” “force name status private,” or “force name status public” if the user has not subscribed to the corresponding Calling Name Identification Restriction service. When the network rejects the request it initiates call clearing and sends a return error component with the userNotSubscribed error value.

When the network rejects the second request for a Calling Name Identification Restriction service as indicated in 6.3.3, it will send a return error component with the supplementaryServiceInteractionNotAllowed error value.

### **6.3.3.2 Stimulus signaling procedures**

#### **6.3.3.2.1 Feature key management procedures**

An error condition will occur if the Feature activation information element coded as “feature identifier = force name status “public,” or coded as “feature identifier = force name status “private,” or coded as “feature identifier = modify network stored value,” is received by the network after either of the following events has occurred:

- a) the terminal has begun to send called party address digits, using Keypad facility information elements; or
- b) the terminal has sent called party address digits, using the called party number information element.

If the above error condition occurs, the network will ignore the Feature activator request and send a national specific cause value # 53 “service operation violated” with diagnostic “short term denial” in an INFOrmation or STATUS message to the calling user.

The network will reject a request to “modify network stored value,” “force name status private,” or “force name status public” if the user has not subscribed to the corresponding Calling Name Identification Restriction service. When the network rejects the request, it initiates call clearing and sends cause #50, “requested facility not subscribed.”

If the feature activator is provided in an INFOrmation message which has a null call reference value, an error condition exists. For this case, the network will ignore the feature activator request and send an INFOrmation message to the calling user, using a null call reference value, and containing a Feature indication information element with the status indicator field set to the current status, and a national specific cause value #53 “service operation violated” with diagnostic “long term denial” in an INFOrmation or STATUS message to the calling user.

#### **6.3.3.2.2 Dial access procedures**

An error condition will occur if the dial access code in a Keypad facility information element(s) is sent by the terminal after either one of the following events has occurred:

- a) The terminal has begun to send called party address digits, using the Keypad facility information element(s);

b) The terminal has sent called party address digits using the called party numbers information element.

The network will reject a request to “modify network stored value,” “force name status private,” or “force name status public” if the user has not subscribed to the corresponding Calling Name Identification Restriction service. When the network rejects the request, it initiates call clearing and sends cause #50, “requested facility not subscribed.”

In addition, other error conditions are described in 4.5.2.3. of ANSI T1.610.

The action taken by the network in these situations is as described in 4.5.2.3.1. of ANSI T1.610, except the network will not prompt the user to re-input the required information.

## **6.4 DSS1 Interactions with supplementary services**

### **6.4.1 Calling Name Identification Presentation (CNIP)**

The network shall deliver a private indication for the Name Information if the Calling Name presentation status for this call is private, as described in 6.3.2 of ANSI T1.641.

### **6.4.2 ISDN Calling line Identification Restriction**

As a network provider option, and in order to simplify the interaction of CLIR service with Calling Name Identification Restriction, common access codes and/or common Feature activator values may be used to control the privacy status of the calling party number and the calling party name. In this case, the correspondence between the access codes and feature activators between the two services will be as follows:

| <b>CLIR</b>                                      | <b>Calling Name Identification Restriction</b> |
|--|--|
| Temporary Mode – Default Presentation Restricted | Force name status "public"                     |
| Temporary Mode – Default Presentation Allowed    | Force name status "private"                    |

There is no correspondent to the Calling Name Identification Restriction option of “modify network stored value”.

### **6.4.3 ISDN Calling Line Identification Presentation (CLIP)**

The DSS1 procedures for CLIP do not interact with the DSS1 procedures for Calling Name Identification Restriction.

### **6.4.4 ISDN Normal Call Transfer**

The DSS1 procedures for ISDN Normal Call Transfer do not interact with the DSS1 procedures for Calling Name Identification Restriction.

### **6.4.5 ISDN Call Waiting**

The DSS1 procedures for ISDN Call Waiting do not interact with the DSS1 procedures for Calling Name Identification Restriction.

### **6.4.6 ISDN Multi-Level Precedence and Preemption**

The DSS1 procedures for ISDN Multi-Level Precedence and Preemption do not interact with the DSS1 procedures for Calling Name Identification Restriction.

### **6.4.7 ISDN Call Hold**

The DSS1 procedures for ISDN Call Hold do not interact with the DSS1 procedures for Calling Name Identification Restriction.

### **6.4.8 ISDN Message Waiting Indicator Control and Notification and non-ISDN Voice Message Waiting Indicator Control**

The DSS1 procedures for ISDN Message Waiting Indicator Control and Notification and non-ISDN Voice Message Waiting Indicator Control do not interact with the DSS1 procedures for Calling Name Identification Restriction.

#### **6.4.9 ISDN User-to-User Signaling**

The DSS1 procedures for ISDN User-to-User Signaling do not interact with the DSS1 procedures for Calling Name Identification Restriction.

### **7 Switching and signaling specifications for Calling Name Identification Restriction at interexchange interfaces**

#### **7.1 ISDN-UP Protocol and Procedures**

##### **7.1.1 Originating exchange**

An originating exchange supporting the Calling Name Identification Restriction service shall include a Generic Name (GN) parameter in the IAM whenever specific name related information must be transferred to the terminating office. This information shall include indications of name availability and presentation, and may also include the characters of the name based on a network option.<sup>2)</sup>

If the calling party forces the Calling Name "private", the GN parameter will be sent in the IAM. If the calling party has a network stored value of "private", and the originating exchange queries for the Name Information prior to setting up the call, the GN parameter will be sent in the IAM. The type of name field shall be coded "Calling Name." The availability field shall be coded "name available" if the originating exchange knows that the name is available or does not know the availability status; otherwise the availability field shall be coded "name not available." The presentation field shall be coded "presentation restricted." No name characters shall be included.

If the calling party forces the Calling Name "public", the GN parameter will be sent in the IAM. If the calling party has a network stored value of "public" and the originating exchange queries for Name Information prior to setting up the call, the GN parameter will be sent in the IAM. The type of name field shall be coded "Calling Name." The availability field shall be coded "name available" if the originating exchange knows that the name is available or does not know the availability status; otherwise the availability field shall be coded "name not available." The presentation field shall be coded "presentation allowed." Name characters are included if the originating exchange is configured to include the name; otherwise, no name characters are sent.

If the calling party invokes the opposite of the network stored value, the GN parameter will be sent in the IAM. The type of name field shall be coded "Calling Name." The availability field shall be coded "name available" if the originating exchange knows that the name is available or does not know the availability status; otherwise, the availability field shall be coded "name not available." The presentation field shall be coded "blocking toggle" if the originating exchange is not aware of the network stored value. The presentation field shall be coded "presentation allowed" if the originating exchange is aware that the network stored value is private. The presentation field shall be coded "presentation restricted" if the originating exchange is aware that the network stored value is public. Name characters are included if the originating exchange is configured to include the name and the presentation is allowed;<sup>3)</sup> otherwise, no name characters are sent.

Name characters and network stored values may be fetched from databases internal or external to the switch. The external query shall be performed using TCAP. See 7.2 for TCAP procedures.

##### **7.1.2 Terminating exchange**

Since this is an originating service, once the Initial Address Message is received at the terminating exchange, the service is complete.

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<sup>2)</sup> The calling party's name, or an indication of name availability and presentation in the originating network, may be made available to other networks based on business agreements among the individual networks.

<sup>3)</sup> The case where name characters are included and the presentation value is "no indication" or "blocking toggle" is unexpected. This is because it is assumed that if the originating exchange has access to the name characters, it will also have access to the network stored value.

### 7.1.3 Transit exchange

If a transit exchange receives a Generic Name (GN) parameter with presentation status coded to “presentation restricted” or to “presentation allowed”, the GN parameter shall be passed unchanged. As a network option, the transit exchange may query a database using the Calling Party Number (CPN) to create a GN parameter of the IAM for the purpose of specifying the presentation field.

### 7.1.4 Formats and codings

#### 7.1.4.1 Messages

This service utilizes the Initial Address Message described in ANSI T1.113.

#### 7.1.4.2 Parameters

This service utilizes two parameters:

- Calling Party Number;
- Generic Name.

The format for the CPN parameter is described in chapter 3 of ANSI T1.113. The parameter name code for the Generic Name parameter is 11000111, and the format is given below:

| 8 7 6              | 5            | 4 3   | 2 1          |
|--------------------|--------------|-------|--------------|
| type of name       | availability | spare | presentation |
| character 1        |              |       |              |
| character 2        |              |       |              |
| ..                 |              |       |              |
| character <i>n</i> |              |       |              |

The type of name field is coded as follows:

| Type of Name         | Value   |
|----------------------|---------|
| Spare                | 000     |
| Calling name         | 001     |
| Original called name | 010     |
| Redirecting name     | 011     |
| Spare                | 100-111 |

The availability field is coded as follows:

| Availability           | Value |
|------------------------|-------|
| Name available/unknown | 0     |
| Name not available     | 1     |

The presentation field is coded as follows:

| Presentation            | Value |
|-------------------------|-------|
| Presentation Allowed    | 00    |
| Presentation Restricted | 01    |
| Blocking toggle         | 10    |
| No indication           | 11    |

## **7.2 TCAP protocol and procedures**

### **7.2.1 Originating exchange**

If the originating exchange is configured to perform external name queries, and it determines that a query is necessary, the switch will formulate a TCAP message of package type "Query – With Permission." This query will be routed to a network database. An Invoke (last) component type containing the Parameter Provide Value operation with an empty TCAP Generic Name parameter and a service key containing the calling number should be included in the query message. The switch should then start a response timer.

If no response is received before the response timer expires, or if a Return Error, Reject, or Abort response is received, the ISDN-UP GN parameter will be sent in the IAM. The type of name field shall be coded "Calling Name." The availability field shall be coded "name not available." The presentation field shall be coded "no indication." No name characters shall be sent.

If no response is received before the response timer expires, the Transaction Capability user should indicate to Transaction Capability that the application process is terminating. Transaction Capability shall terminate the transaction and its associated component.

If a Return Result response is received, then the originating exchange continues with the procedures in 7.1.1.

Note that the expected case is that the network stored value would be either stored in the originating exchange or a network database, but not both. In the case where both the originating exchange and the database provide absolute indications, the originating exchange value will take precedence. In cases where no indication is provided by either, the default shall be to not deliver the information.

### **7.2.2 Facility providing the name information**

The Facility receiving the TCAP query sent by the originating exchange should perform a search for the name characters and network stored value based on the calling number in the Service Key.

#### **7.2.2.1 Successful operation**

If the search is successful, the name characters and network stored value should be included in the Return Result component of the response message.

#### **7.2.2.2 Unsuccessful operation**

If the search is unsuccessful, an error code should be returned in the Return Error component of the response message.

The error code is "Unavailable Resource" if the facility does not have the capability to perform the search or does not have the Calling Name database.

The error code is "Unexpected Data Value" if the facility has the capability to perform the search but the calling number specified is not present in the database because it is from outside the served area.

The error code is "Missing Customer Record" if the facility has the capability to perform the search, the calling number is within the served area, but the calling number specified is not present in the database.

The error code is "Data Unavailable" if the facility can perform the search, the calling number is present in the database, but no name is found for the specified calling number.

The error code is "Task Refused" if the facility is temporarily unable to perform the search.

The error code is "Screened Response" if the facility has the capability to perform the name search, but the requester is not authorized to access name information.

### 7.2.3 Formats and codings

#### 7.2.3.1 Parameter-provide value operation for Initial Query

parameter-ProvideValue OPERATION  
— for Initial Query

|               |  |
|---------------|--|
| PARAMETER SET | {GenericName,<br>ServiceKey}   |
| RESULT SET    | {GenericName}  |
| ERRORS        | {unavailableResource,<br>unexpectedDataValue,<br>dataUnavailable,<br>missingCustomerRecord,<br>taskRefused,<br>screenedResponse} |
| ServiceKey    | ::=[10] IMPLICIT SET {callingDN Digits,<br>BusinessGroup OPTIONAL}<br>—only included on MBG-related queries.                     |
| Digits        | ::=[4] IMPLICIT OCTET STRING   |
| BusinessGroup | ::=[21] IMPLICIT OCTET STRING  |
| GenericName   | ::=[23] IMPLICIT OCTET STRING  |

#### 7.2.3.2 Digits parameter

Two new codings are required in the type of digits field of the Digits parameter. These are:

- 1) 00001101 – Original Called Number. These digits identify the number of the party who initiated the first redirection of the call.
- 2) 00001110 – Redirecting Number. These digits identify the number of the party who initiated the last redirection of the call.

The type of digits field is coded as follows:

| Type of Digits           | Value    |
|--------------------------|----------|
| Calling directory number | 00001011 |
| Original called number   | 00001101 |
| Redirecting number       | 00001110 |

#### 7.2.3.3 Generic Name parameter

The Generic Name Identifier is coded contextual (in the context of the Parameter Set), primitive, with Identifier code 23 as follows:

| Parameter    | H | G | F | E | D | C | B | A |
|--------------|---|---|---|---|---|---|---|---|
| Generic Name | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |

The Generic Name Length is variable. The contents are coded as follows:

| <b>H G F</b>       | <b>E</b>     | <b>D C</b> | <b>B A</b>   |
|--------------------|--------------|------------|--------------|
| type of name       | availability | spare      | presentation |
| character 1        |              |            |              |
| character 2        |              |            |              |
| ..                 |              |            |              |
| character <i>n</i> |              |            |              |

Characters are IA5 encoded and can be up to 15 octets.

The type of name field is coded as follows:

| <b>Type of name</b>  | <b>Value</b> |
|----------------------|--------------|
| Spare                | 000          |
| Calling name         | 001          |
| Original called name | 010          |
| Redirecting name     | 011          |
| Spare                | 101–111      |

The availability field is coded as follows:

| <b>Availability</b>    | <b>Value</b> |
|------------------------|--------------|
| Name available/unknown | 0            |
| Name not available     | 1            |

The presentation field is coded as follows:

| <b>Presentation</b>     | <b>Value</b> |
|-------------------------|--------------|
| Presentation Allowed    | 00           |
| Presentation Restricted | 01           |
| (not used)              | 10           |
| No indication           | 11           |

### **7.3 SS7 interaction with other supplementary services**

#### **7.3.1 Calling Name Identification Presentation (CNIP)**

When Calling Name Identification Restriction is used to force Calling Name presentation status for this call to private, a query is not performed to obtain name information.

#### **7.3.2 Non-ISDN Multi-location Business Groups (MBG)**

Non-ISDN MBG interworking for Transaction Capabilities procedures is accomplished by inclusion of the optional Business Group parameter in the Service Key, as described in ANSI T1.641.

The ISDN-UP procedures for non-ISDN MBG have no interactions with the ISDN-UP procedures for Calling Name Identification Restriction.

### 7.3.2 Non-ISDN Call Forwarding

The ISDN-UP procedures for non-ISDN Call Forwarding have no interactions with the ISDN-UP procedures for Calling Name Identification Restriction.

## 8 Specifications for protocol interworking

### 8.1 DSS1/SS7

#### 8.1.1 Message mapping

| <u>DSS1</u> | <u>SS7 TCAP</u>            | <u>SS7 ISDN-UP</u> |
|-------------|----------------------------|--------------------|
| SETUP, INFO |                            | IAM                |
| SETUP,INFO  | Query – With<br>Permission |                    |
|             | Response                   | IAM                |

#### 8.1.2 Parameter/component/information element mapping

| <u>DSS1 (Information Element)</u>   | <u>SS7 (TC Component)</u> | <u>SS7 (ISDN-UP Parameter)</u> |
|-------------------------------------|---------------------------|--------------------------------|
| Keypad, Feature Activator, Facility |                           | Generic Name                   |
| Keypad, Feature Activator, Facility | Invoke-PPV                |                                |
|                                     | Return Result             | Generic Name                   |

### 8.2 SS7/MF Signaling

If SS7 connectivity does not exist between the originating exchange and the terminating exchange, since Calling Name Identification Presentation is not supported, Calling Name Identification Restriction service is not needed.

**Annex A**  
(informative)

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