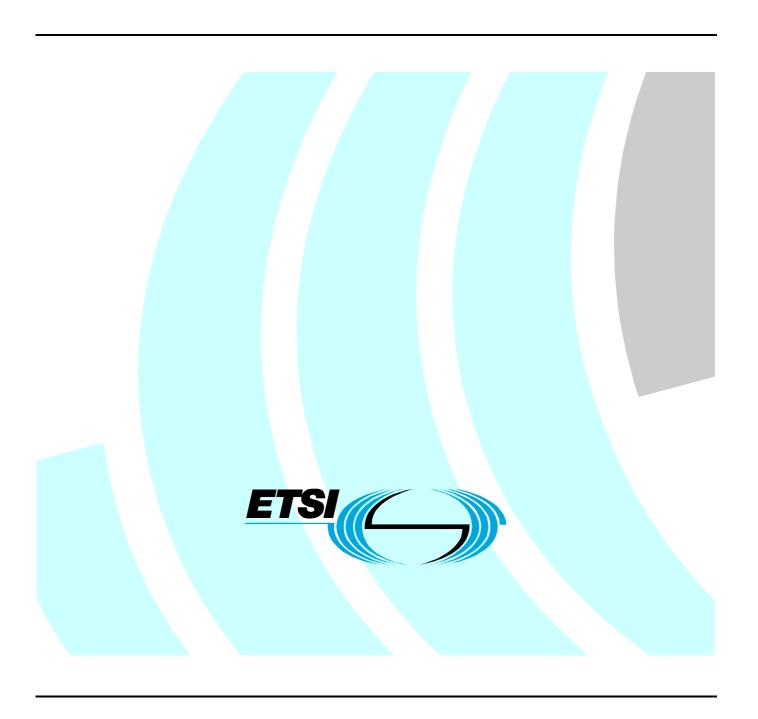
ETSI TS 183 008 V1.1.1 (2006-03)

Technical Specification

Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN);
PSTN/ISDN simulation services;
Terminating Identification Presentation (TIP) and Terminating Identification Restriction (TIR);
Protocol specification



Reference

DTS/TISPAN-03026-NGN-R1

Keywords
COLP, COLR, supplementary service

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN).

1 Scope

The present document specifies the, stage three, protocol description, of the Terminating Identification Presentation (TIP) and Terminating Identification Restriction (TIR) services, based on stage one and two of the ISDN COLP [3] and COLR [4] supplementary services. Within the TISPAN NGN Release 1 Next Generation Network (NGN) the stage 3 description is specified using the IP-Multimedia Call Control Protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP).

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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

[1]	ETSI ES 282 007: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IP Multimedia Subsystem (IMS); Functional architecture".
[2]	ETSI ES 283 003: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Endorsement of "IP Multimedia Call Control Protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP) Stage 3 (Release 6)" for NGN Release 1".
[3]	ETSI EN 300 094: "Integrated Services Digital Network (ISDN); Connected Line Identification Presentation (COLP) supplementary service; Service description".
[4]	ETSI ETS 300 095: "Integrated Services Digital Network (ISDN); Connected Line Identification Restriction (COLR) supplementary service; Service description".
[5]	IETF RFC 3323: "A Privacy Mechanism for the Session Initiation Protocol (SIP)".
[6]	IETF RFC 3325: "Private Extensions to the Session Initiation Protocol (SIP) for Network Asserted Identity within Trusted Networks".
[7]	IETF RFC 2396: "Uniform Resource Identifiers (URI): Generic Syntax".
[8]	IETF RFC 3966: "The tel URI for Telephone Numbers".
[9]	IETF RFC 3261: "SIP: Session Initiation Protocol".
[10]	ETSI ES 282 003: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Resource and Admission Control Sub-system (RACS); Functional Architecture".
[11]	IETF RFC 2806: "URLs for Telephone Calls".
[12]	ITU-T Recommendation E.164: "The international public telecommunication numbering plan".
[13]	ITU-T Recommendation I.210: "Principles of telecommunication services supported by an ISDN and the means to describe them".
[14]	ETSI TS 182 006: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); IP Multimedia Subsystem (IMS); Stage 2 description (3GPP TS 23.228 v7.2.0, modified)".

[15] ETSI TS 183 023: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); NGN Release 1; PSTN/ISDN simulation services; Extensible Markup Language (XML) Configuration Access Protocol (XCAP) over the Ut interface for Manipulating NGN PSTN/ISDN Simulation Services".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

Breakout Gateway Control Function (BGCF): See ES 282 007.

Call Session Control Function (CSCF): See ES 282 007.

dialog: See RFC 3261. header: See RFC 3261.

header field: See RFC 3261.

identity information: all the information (RFC 2806 / RFC 2396 / ITU-T Recommendation E.164) identifying a user, including trusted (network generated) and/or untrusted (user generated) addresses

NOTE: Identity information shall take the form of either a SIP URI (see RFC 3261) or a "tel" URI (see

RFC 3966).

incoming initial request: all requests intended to initiate either a dialog or a standalone transaction received from the served user

Interrogating-CSCF (I-CSCF): See ES 282 003.

Interconnection Border Control Function (IBCF): See ES 282 003.

Media Gateway Control Function (MGCF): See ES 282 007.

method: See RFC 3261.

Multimedia Resource Function Controller (MRFC): See ES 282 007.

Multimedia Resource Function Processor (MRFP): See ES 282 007.

outgoing initial request: all requests intended to initiate either a dialog or a standalone transaction terminated by the served user

provisional response: See RFC 3261.

proxy: See RFC 3261.

Proxy-CSCF (P-CSCF): See ES 282 003.

public user identity: See TS 182 006, clause 4.3.3.2 and ES 282 003.

request: See RFC 3261.

response: See RFC 3261.

session: See RFC 3261.

(SIP) transaction: See RFC 3261.

Subscription Locator Function (SLF): See ES 282 007.

supplementary service: See ITU-T Recommendation I.210, clause 2.4.

tag: See RFC 3261.

trusted identity information: network generated user public identity information

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

CCBS Completion of Communication to Busy Subscriber

CDIV Communication DIVersion

CN Core Network
CONF CONFerence
CS Circuit Switched
CW Communication Waiting
HOLD Communication Hold

IBCF Interconnection Border Control Function

IFC Initial Filter Criteria
IMS IP Multimedia Subsystem

IP Internet Protocol

ISDN Integrated Service Data Network
MCID Malicious Communication IDentification

NGN Next Generation Network

OIP Originating Identification Presentation
OIR Originating Identification Restriction
PSTN Public Switch Telephone Network

SIP Session Initiation Protocol

TIP Terminating Identification Presentation
TIR Terminating Identification Restriction

UE User Equipment

4 Terminating Identification Presentation (TIP) and Terminating Identification Restriction (TIR)

4.1 Introduction

The Terminating Identification Presentation (TIP) service provides the originating party with the possibility of receiving identity information in order to identify the terminating party.

The network shall deliver the Terminating Identity to the originating party on *communication* acceptance regardless of the terminal capability to handle the information.

The Terminating Identification Restriction (TIR) is a service offered to the connected party which enables the connected party to prevent presentation of the terminating identity information to originating party.

4.2 Description

4.2.1 General description

The Terminating Identification Presentation (TIP) service provides the originating party with the possibility of receiving trusted information in order to identify the terminating party.

The Terminating Identification Restriction (TIR) is a service offered to the terminating party which enables the terminating party to prevent presentation of the terminating identity information to originating party.

4.3 Operational requirements

4.3.1 Provision/withdrawal

4.3.1.1 TIP Provision/withdrawal

The TIP service may be provided after prior arrangement with the service provider or be generally available.

The TIP service shall be withdrawn at the subscriber's request or for administrative reasons.

4.3.1.2 TIR Provision/withdrawal

The TIR service, temporary mode, may be provided on a subscription basis or may be generally available.

The TIR service, permanent mode, shall be provided on a subscription basis.

As a network option, the TIR service can be offered with several subscription options. A network providing the TIR service shall support temporary mode at a minimum. Subscription options are summarized in table 1.

Table 1: TIR subscription options

4.3.2 Requirements on the originating network side

For originating users that subscribe to the TIP service, if network provided identity information about the terminator is available, and if presentation is allowed, the network shall include that information in the responses sent to the user.

If the presentation of the network asserted identity is restricted due to the TIR service, then the originating user shall receive an indication that the network provided identity was not sent because of restriction.

If the network asserted identity information is not available at the originating network (for reasons such as interworking), then the network shall indicate to the terminating user that the network asserted identity information was not included for reasons other than restriction.

4.3.3 Requirements on the terminating network side

As part of the basic communication control procedures specified in ES 283 003 [2], the following requirements apply at the terminating network side in support of the TIP service and the TIR service. Unless noted otherwise, these requirements are meant to apply to responses where the presence of the P-Asserted-Identity and Privacy header fields are allowed.. These procedures apply regardless of whether the originating or terminating parties subscribe to the TIP service or the TIR service:

The terminating network shall include network asserted identity information in responses where allowed by ES 283 003 [2]. For TIR subscribers:

- The terminating user may include an indication that it wishes to have the presentation of its identity information restricted, in any response where allowed by ES 283 003 [2].
- If the terminating user has subscribed to the TIR service in the permanent or temporary mode, then the network shall automatically invoke the TIR service for every incoming request.

If the TIR service is not invoked, the network-provided identity shall be considered to be presentation allowed.

As a national option the originating AS can override the presentation restriction indication and the terminating identity is then presented to the originating subscriber for specific originating access' categories (e.g. Police).

4.4 Syntax requirements

The syntax for the relevant headers in the SIP requests and SIP responses shall be as follows:

- The syntax of the P-Asserted-Identity header field shall conform to the requirements in ES 283 003 [2] (RFC 3325 [6] and RFC 3966 [8]).
- The syntax of the Privacy header shall conform to the requirements in ES 283 003 [2] (RFC 3323 [5] and RFC 3325 [6]).

4.5 Signalling procedures

4.5.1 Activation/deactivation/registration

For provisioning of the TIR the Ut interface could be used. (see clause 4.9 for further information).

Other possibilities for provisioning could be used too like web based provisioning or pre-provisioning by the operator.

4.5.2 Invocation and operation

4.5.2.1 Actions at the originating UE

A UE that supports the TIP service signalling procedures shall support the receipt, in SIP responses to SIP requests initiating a dialog or for standalone transactions, one or more P-Asserted-Identity headers, each one containing a network-provided identity information of the terminating user.

If no P-Asserted-Identity header fields are present, but a Privacy header field set to "id" was present, then the network-provided identity information was withheld due to presentation restriction.

If neither P-Asserted-Identity header fields nor a Privacy header fields set to "id" are present, then the network-provided identity information was not available (due, for example, to interworking with other networks).

Once a 2xx response is received, the P-Asserted-Identity header field of the first 2xx response is used, e.g. when presenting the identity to the user.

NOTE: Any P-Asserted-Identity received in a provisional response is outside the scope of this service.

4.5.2.2 Actions at the originating P-CSCF

There are no procedures at the originating P-CSCF relevant to the TIP service or the TIR service.

4.5.2.3 Actions at the S-CSCF serving the originating UE

For the S-CSCF to forward an initial SIP request or standalone SIP request, an initial filter criterion may be setup for the user who does not subscribe to the TIP service. Annex B provides an example of an initial filter criterion that that can be applied for the TIP/TIR service.

4.5.2.4 Actions at the AS serving the originating UE

NOTE: If the terminating user requests privacy the S-CSCF removes the P-Asserted-Identity header field as part of the basic communication procedures defined in ES 283 003 [2].

If a originating user does not subscribe to the TIP service, any P-Asserted-Identity header fields or Privacy header fields included in the SIP response shall be removed.

4.5.2.5 Actions at the outgoing I-CSCF (THIG)

Procedures according to ES 283 003 [2] shall apply.

4.5.2.6 Actions at the incoming I-CSCF

Procedures according to ES 283 003 [2] shall apply.

4.5.2.7 Actions at the outgoing IBCF

Procedures according to ES 283 003 [2] shall apply.

NOTE: It is assumed that the IBCF is responsible for stripping the P-Asserted-Identity from the SIP header when interworking with untrusted networks.

4.5.2.8 Actions at the incoming IBCF

Procedures according to ES 283 003 [2] shall apply.

NOTE: It is assumed that the IBCF is responsible for stripping the P-Asserted-Identity from the SIP header when interworking with untrusted networks.

4.5.2.9 Actions at the AS serving the terminating UE.

For an terminating user who subscribes to the TIR service in "permanent mode", if a SIP response to a SIP request does not include a Privacy header field, the AS shall insert a Privacy header field set to "id".

For a terminating user who subscribes to the TIR service in "temporary mode" with default set to "restricted", if a SIP response to a SIP request does not include a Privacy header field, the AS shall insert a Privacy header field set to "id".

For a terminating user who subscribes to the TIR service in "temporary mode" with default set to "not restricted" normal procedures apply.

4.5.2.10 Actions at the S-CSCF serving the terminating UE

Procedures according to ES 283 003 [2] shall apply.

For the S-CSCF to forward an initial request or standalone request, an initial filter criterion must be setup for the user who is subscribed to the TIR service. Annex B provides an example of an initial filter criterion that that can be applied for the TIP/TIR service.

4.5.2.11 Actions at the terminating P-CSCF

Procedures according to ES 283 003 [2] shall apply.

4.5.2.12 Actions at the terminating UE

The destination UE, if requesting that its identity be kept private from the originating user, may include a Privacy header with privacy type of "id" in any non-100 responses it sends upon receipt of a SIP request.

NOTE: It is assumed that TIR subscribers support RFC 3325 [6].

4.6 Interaction with other simulation services

4.6.1 Communication session Hold (HOLD)

No impact, i.e. neither simulation service shall affect the operation of the other simulation service.

4.6.2 Terminating Identification Presentation (TIP)

The TIR service shall normally take precedence over the TIP service. The TIP service can take precedence over the TIR service when the originating user has an override category. This is a national matter, the operation of which is outside the scope of the present document.

4.6.3 Terminating Identification Restriction (TIR)

The TIR service shall normally take precedence over the TIP service. The TIP service can take precedence over the TIR service when the originating user has an override category. This is a national matter, the operation of which is outside the scope of the present document.

4.6.4 Originating Identification Presentation (OIP)

No impact, i.e. neither simulation service shall affect the operation of the other simulation service.

4.6.5 Originating Identification Restriction (OIR)

No impact, i.e. neither simulation service shall affect the operation of the other simulation service.

4.6.6 Conference (CONF)

Conference controller: no impact, i.e. neither simulation service shall affect the operation of the other simulation service.

Participants in a conference shall not receive the TIP service information of participants being added to the conference.

4.6.7 Communication DIVersion services (CDIV)

In case of the TIP service if the served (forwarding/deflecting) user selects the option that the originating user is not notified of communication diversion, then the originating user shall receive no diversion notification. In addition, the originating user shall not receive the terminating user's identity information when the communication is answered, unless the originating user has override capability.

In case of the TIP service if the served (forwarding/deflecting) user selects the option that the originating user is notified, but without the diverted-to address, then the originating user shall not receive the terminating user's identity information when the communication is answered, unless the originating user has override capability.

If a diverted-to user subscribes to the TIR service "permanent mode", then the diverted-to user's URI shall not be provided with the notification that the communication has been diverted.

If a diverted-to user subscribes to the TIR service "temporary mode", then the diverted-to user's URI shall not be provided until negotiation with the user has taken place and a positive indication from the user has been received.

In each of the above situations, a originating user that subscribes to the TIP service and who has override capability will not receive the diverted-to user's number as part of the diverting notification information, but can use the override capability in order to receive the terminating identity information when the communication is answered.

4.6.8 Malicious Communication IDentification (MCID)

No impact, i.e. neither simulation service shall affect the operation of the other simulation service.

4.7 Interactions with other networks

4.7.1 Interaction with PSTN/ISDN networks

The interworking described in ES 283 025 (see bibliography) shall apply.

4.7.2 Interaction with PSTN/ISDN emulation

When interworking with the PSTN/ISDN domain, the following header fields shall be passed without changes:

- P-Asserted-Identity header field; and
- Privacy header field.

NOTE: The SIP header fields are transcoded by the MGCF from and to an ISUP MIME body.

If the network is not trusted the P-Asserted-Identity shall be removed from SIP requests and SIP responses.

4.7.3 Interaction with other IP networks

If the other IP network is a trusted network and the RFC 3323 [5] and RFC 3325 [6] are supported the following header fields shall be forwarded without changes:

- P-Asserted-Identity header field; and
- Privacy header field.

If the IP network is not trusted the P-Asserted- Identity header field shall be removed from SIP requests and SIP responses.

4.8 Parameter values (timers)

No specific timers are required.

4.9 Service configuration

Terminating Identity documents are sub-trees of the *simservs* XML document specified in TS 183 023 [15]. As such, Terminating Identity documents use the XCAP application usage in TS 183 023 [15].

Data semantics: The semantics of the Terminating Identity XML configuration document is specified in clause 4.9.1.

XML schema: Implementations in compliance with the present document shall implement the XML schema defined in clause 4.9.2.

An instance of an Terminating Identity document is shown:

4.9.1 Data semantics

The TIP service can be activated/deactivated using the active attribute of the <terminating-identity-presentation> service element.

The TIR service can be activated/deactivated using the active attribute of the <terminating-identity-presentation-restriction> service element. Activating the TIR service this way activates the temporary mode TIR service. When deactivated and not overruled by operator settings, basic communication procedures apply.

The behaviour of the temporary mode TIR is configured with the optional <default-behaviour> element. There are two values that this element can take:

- **presentation-restricted:** This configures the service to behave as specified in clause 4.5.2.9 for the case TIR service in "temporary mode" with default "restricted".
- **presentation-not-restricted:** This configures the service to behave as specified in clause 4.5.2.9 for the case TIR service in "temporary mode" with default "not restricted".

4.9.2 XML schema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:ss="urn:org:etsi:ngn:params:xml:ns:simservs"</pre>
xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="urn:org:etsi:ngn:params:xml:ns:simservs" elementFormDefault="qualified"
attributeFormDefault="unqualified">
   <xs:element name="terminating-identity-presentation-restriction"</pre>
substitutionGroup="ss:absService">
       <xs:annotation>
           \verb|<xs:| documentation| Terminating Identity presentation Restriction|
            </xs:documentation>
       </xs:annotation>
       <xs:complexType>
           <xs:complexContent>
               <xs:extension base="ss:simservType">
                   <xs:sequence>
                       <xs:element name="default-behaviour" default="presentation-restricted"</pre>
minOccurs="0">
                            <xs:simpleType>
                                <xs:restriction base="xs:string">
                                    <xs:enumeration value="presentation-restricted"/>
                                    <xs:enumeration value="presentation-not-restricted"/>
                                </xs:restriction>
                            </xs:simpleType>
                        </xs:element>
                   </xs:sequence>
               </xs:extension>
           </xs:complexContent>
       </xs:complexType>
   </xs:element>
   <xs:element name="terminating-identity-presentation" type="ss:simservType"</pre>
substitutionGroup="ss:absService">
       <xs:annotation>
           <xs:documentation>Terminating Identity Presentation
            </xs:documentation>
       </re>
   </rs:element>
</xs:schema>
```

Annex A (informative): Signalling flows

No TIP/TIR service specific signalling flow is necessary in addition to the basic communication control according to ES $283\ 003\ [2]$.

Annex B (informative): Example of filter criteria

This annex provides an example of a filter criterion that triggers SIP requests that are subject to initial filter criteria evaluation.

B.1 Originating IFC for TIP service

All outgoing initial SIP requests are forwarded to an Application Server providing the TIR simulation service under the following conditions:

• The originating user does not subscribe to the TIP service and the AS removes the P-Asserted-Identity header fields and the Privacy header field.

NOTE: Responses follow the same route as requests, so the responses will also be routed via the AS.

B.2 Terminating IFC for TIR service

The terminating user has subscribed the TIR service, in either permanent or temporary mode.

NOTE: Responses follow the same route as requests, so the responses will also be routed via the AS.

Annex C (informative): Bibliography

• ETSI ES 283 025: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); H.248 MG and MGC System Management Procedures".

History

Document history					
V1.1.1	March 2006	Publication			