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Contents

Foreword

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1 Scope

The present document specifies the stage three (protocol description) of the Enhanced Calling Name (eCNAM) supplementary service based on stage one description in 3GPP TS 22.173 [1]. It provides the protocol details in the IP Multimedia (IM) Core Network (CN) subsystem (see 3GPP TS 24.229 [2]) based on the Session Initiation Protocol (SIP) (see RFC 3261 [3]) where the eCNAM data is retrieved by the terminating network from trusted data sources.

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. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 22.173: "IP Multimedia Core Network Subsystem (IMS) Multimedia Telephony Service and supplementary services".

[2] 3GPP TS 24.229: "IP Multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[3] IETF RFC 3261: "SIP: Session Initiation Protocol".

[4] 3GPP TS 23.003: "Numbering, addressing and identification".

[5] IETF RFC 3325: "Private Extensions to the Session Initiation Protocol (SIP) for Network Asserted Identity within Trusted Networks".

[6] IETF RFC 3323: "A Privacy Mechanism for the Session Initiation Protocol (SIP)".

[7] IETF RFC 3966: "The tel URI for Telephone Numbers".

[8] 3GPP TS 24.604: "Communication Diversion (CDIV) using IP Multimedia (IM) Core Network (CN) subsystem".

[9] IETF RFC 8224: "Authenticated Identity Management in the Session Initiation Protocol (SIP)".

[10] ITU-T Recommendation E.164 (11/2010): "The international public telecommunication numbering plan".

[11] ITU-T Recommendation I.210 (03/1993): "Principles of telecommunication services supported by an ISDN and the means to describe them".

3 Definitions and abbreviations

For the purposes of the present document, the following definitions and abbreviations apply.

3.1 Definitions

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

Identity information: all the information identifying a user, including trusted (network generated) and/or untrusted (user generated) addresses.

NOTE: Identity information takes the form of either a SIP URI (see RFC 3261 [3]) or a tel URI (see RFC 3966 [7]).

Originating UE: sender of a SIP request intended to initiate either a dialog (e.g. INVITE, SUBSCRIBE), or a standalone transaction.

Private information: information that according to RFC 3323 [6] and RFC 3325 [5] is not permitted to be delivered to the remote end.

Searchkey: a user identity employed to retrieve the eCNAM data associated with that identity from the appropriate data sources.

terminating UE: recipient of a SIP request intended either to initiate a dialog or to initiate either a dialog or a standalone transaction

trusted identity information: network generated user public identity information

For the purposes of the present document, the following definitions given in RFC 3261 [3] apply.

header
header field
request
response
session
(SIP) transaction

For the purposes of the present document, the following definitions given in ITU-T Recommendation I.210 [11] apply:

supplementary service
E.164 telephone number: telephone number formatted according to ITU-T.

3.2 Abbreviations

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

3GPP 3rd Generation Partnership Project
ACR Anonymous Communication Rejection
AS Application Server
CCBS Completion of Communication to Busy Subscriber
CDIV Communication DIVersion
CN Core Network
CUG Closed User Group
CW Communication Waiting
eCNAM Enhanced Calling Name
ECT Explicit Communication Transfer
FA Flexible Alerting
HOLD Communication Hold
ICB Incoming Communications Barring
IETF Internet Engineering Task Force
IM IP Multimedia
IMS IP Multimedia Subsystem
IP Internet Protocol
MCID Malicious Communication Identification
MiD Multi-iDentity
MuD Multi-Device
MWI Message Waiting Indication
OIP Originating Identification Presentation
OIR Originating Identification Restriction
PNM Personal Network Management
SDP Session Description Protocol
SIP Session Initiation Protocol
TIP Terminating Identification Presentation

TIR	Terminating Identification Restriction
TN	Telephone Number
UE	User Equipment
URI	Universal Resource Identifier

4 Enhanced Calling Name (eCNAM)

4.1 Introduction

The eCNAM service provides the terminating user with the name associated with the originating user and optionally delivers metadata about that originating user. While eCNAM is a terminating service, the eCNAM operations rely on information received from the originating network, such as the originating user's E.164 telephone number (TN) to retrieve eCNAM data from trusted data sources (via methods outside the scope of this specification).

4.2 Service Description

4.2.1 General Description

The eCNAM service provides the terminating user with a name that identifies the originating user, and metadata about that originating user (e.g., address, language).

NOTE: The terminating service provider retrieves the name and metadata from pre-selected data sources. The terminating service provider can also partner with analytics providers that offer risk indicators about the incoming call (e.g., known perpetrators of scams) as part of the metadata eCNAM delivers.

To retrieve eCNAM data, the service provider formulates queries using a searchkey to retrieve the name and metadata. The searchkey is a user identity obtained from the incoming SIP INVITE. Most commonly, the service provider uses an E.164 TN as that searchkey. Other identities could be used to retrieve the eCNAM data.

If the terminating network determines that the telephone number's (or other identity's) presentation is restricted (i.e., not to be presented to the end user), the eCNAM data will also be restricted.

If the terminating network determines that the telephone number (or other identity's) presentation is not restricted (i.e., to be presented to the end user), the eCNAM data will also be presented to the end user with no restriction.

4.3 Operational Requirements

4.3.1 Provision/withdrawal

The eCNAM service can be provided after prior arrangement with the service provider.

The eCNAM service can be withdrawn at the subscriber's request or for administrative reasons.

4.3.2 Requirements on the Originating Network

eCNAM is a terminating service, however, the eCNAM operations rely on information received from the originating network.

If the originating user identity, such as the originating user's E.164 TN, is not delivered by the originating network to the terminating network, the terminating service provider will not be able to retrieve eCNAM data from the relevant data sources.

NOTE: The searchkey element necessary for retrieving eCNAM data from the relevant data source is, in most cases, restricted to the originating user's E.164 TN for most databases. However, other user identities can be used as searchkey elements.

The originating network can support a verification capability, such as the number verification capability described in 3GPP TS 24.229 [2]. Without a verification capability at the originating network, the integrity of the eCNAM data retrieved could be impacted.

4.3.3 Requirements on the Terminating Network

4.3.3.1 Data Sources

The eCNAM service involves the retrieval of the name data and the additional caller information from data sources that the terminating service provider has access to, based on service provider policy.

The special arrangements and interfaces between the terminating service provider and the data sources are outside the scope of this document and are subject to operator procedures.

NOTE 1: The accuracy of the name information and the metadata about the caller varies among sources; therefore, the terminating service provider exercises a choice of which source to use. The interfaces and protocols used to retrieve the data are typically negotiated between the terminating service provider and the data source.

NOTE 2: The terminating service provider pre-determines the elements of metadata that will be delivered on each call to eCNAM subscribers. The set of metadata varies from one service provider to another.

4.4 Syntax Requirements

The syntax for the header fields are normatively described in 3GPP TS 24.229 [2]. The relevant headers are:

- The P-Asserted-Identity header field which shall conform to the specifications in RFC 3325 [5] and RFC 3966 [7].
- The Identity header field which shall conform to the specifications in RFC 8224 [9].
- The Call-Info header field which shall conform to the specifications in RFC 3261 [3].
- The Privacy header field which shall conform to the specifications in RFC 3323 [6] and RFC 3325 [5].

NOTE: The privacy level "session" and "critical" are not used in this specification.

- The From header field which shall conform to the specifications in RFC 3261 [3] and RFC 3966 [7].

4.5 Signalling Procedures

4.5.1 General

Configuration of the eCNAM is performed by the service provider.

4.5.2 Activation/Deactivation

The service provider activates the eCNAM service at provisioning, upon the user's request.

The service provider deactivates the service at withdrawal upon the user’s request.

No user configuration is defined in this release.

4.5.3 Invocation and Operation

4.5.3.1 Actions at the Originating UE

No actions at the originating UE.