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Universal Mobile Telecommunications System (UMTS);
LTE;
IP Multimedia Core Network Subsystem (IMS)
Multimedia Telephony Service and supplementary services;
Stage 1
(3GPP TS 22.173 version 15.1.0 Release 15)**



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1 Scope

The present document define the IMS Multimedia Telephony service and the minimum set of capabilities required to secure multi-vendor and multi-operator inter-operability for Multimedia Telephony and related Supplementary Services.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

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- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] Void
- [3] Void
- [4] 3GPP TS 22.228: "IP multimedia (IM) CN subsystem, stage 1"
- [5] ITU-T Recommendation I.210: "Principles of telecommunication services supported by an ISDN and the means to describe them"
- [6] 3GPP TS 22.041: "Operator Determined Barring (ODB)"
- [7] 3GPP TS 24.173: "IMS Multimedia Telephony Communication Service and Supplementary Services; Stage 3"
- [8] 3GPP TS 22.101: "Service principles".
- [9] 3GPP TS 22.182: "Customized Alerting Tones (CAT) Requirements; Stage 1".
- [10] 3GPP TS 22.183: "Customized Ringing Signal (CRS) Requirements; Stage 1".
- [11] ITU-T Recommendation F.703: "Multimedia Conversational Services".
- [12] 3GPP TS 22.090 : "Unstructured Supplementary Service Data (USSD); Stage 1".
- [13] 3GPP TS 22.001: "Principles of circuit telecommunication services supported by a Public Land Mobile Network (PLMN)".
- [14] 3GPP TS 22.030 : " Man-Machine Interface (MMI) of the User Equipment (UE)".
- [15] ATIS 1000067.2015, "IP NGN Enhanced Calling Name (eCNAM)"

3 Definitions, symbols and abbreviations

3.1 Definitions

Blacklist List of identities or identity ranges that, for one reason or another, are being denied a particular service.

Spoofed call: A call where caller identity creation, modification or removal in call signalling results in an unauthorized or illegal use of this identity in the call., This typically occurs where the caller intends to defraud the called user or otherwise illegally obscure the real caller identity.

Whitelist List of identities or identity ranges that are provided particular services. Whitelist is also named VIP list.

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

3PTY	Three Party
ACR	Anonymous Communication Rejection
AOC-C	Advice Of Charge - Charging
AOC-D	Advice Of Charge - During the communication
AOC-E	Advice Of Charge - at the End of the communication
AOC-I	Advice Of Charge - Information
AOC-S	Advice Of Charge - charging information at communication Set-up time
CAT	Customized Alerting Tone
CB	Communication session Barring
CCBS	Completion of Communication sessions to Busy Subscriber
CD	Communication Deflection
CDIV	Communication DIVersion
CFB	Communication Forwarding Busy
CFNL	Communication Forwarding on Not Logged-in
CFNR	Communication Forwarding No Reply
CFNRc	Communication Forwarding on Subscriber Not Reachable
CFU	Communication Forwarding Unconditional
COLP	COnnected Line identification Presentation
COLR	COnnected Line identification Restriction
CONF	CONFerence
CRS	Customized Ringing Signal
CS	Circuit Switched
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
MCID	Malicious Communication IDentification
MWI	Message Waiting Indication
OCB	Outgoing Communications Barring
OIP	Originating Identification Presentation
OIR	Originating Identification Restriction
PSAP	Public Safety Answer Point
PUI	Public User Identity
TIP	Terminating Identification Presentation
TIR	Terminating Identification Restriction

4 Service description

4.1 General Service characteristics

The IMS Multimedia Telephony Service should allow multimedia conversational communications between two or more users. It provides real time bidirectional conversational transfer of speech, video or optionally other types of data.

The IMS Multimedia Telephony communication is point to point between terminals communicating, or a terminal and a network entity. This communication is usually symmetrical, but in special cases the media components present in each direction may be different, or they may be the same but with different bit rates and Quality of Service.

An IMS Multimedia Telephony communication can start with only one type of media and additional types of media may or may not be added by the users as the communication progress. Therefore a particular IMS Multimedia Telephony communication may consist of only one type of media, e.g. speech.

IMS Multimedia Telephony service is different from other IMS based services, such as Push to Talk over Cellular (PoC).

Its characteristics includes the following:

- IMS Multimedia Telephony is a service where speech, and speech combined with other media components, is the typical usage but the service is not limited to always include speech, it also caters for other media or combinations of media (e.g. text and video).
- The IMS multimedia telephony service includes supplementary services. The behaviour of these services is almost identical to supplementary services for CS voice (TS 11) and PSTN/ISDN.

Note: most supplementary services are active in the set-up phase. Mid session supplementary services such as session transfer and session hold exist.

- The anticipated usage model is that of traditional telephony: one user connecting to any other user, regardless of operator and access technology.
- When a supplementary service is invoked it applies to all media components of an IMS Multimedia Telephony communication. A supplementary service can be activated by the user for one or more types of media components. If one or more of these media components are present in the IMS Multimedia Telephony communication then the supplementary service is invoked.

4.2 Default media handling capabilities of IMS Multimedia Telephony service

IMS Multimedia Telephony can support many different types of media.

IMS Multimedia Telephony service includes the following standardized media capabilities:

- Full duplex speech;
- Real time video (simplex, full duplex), synchronized with speech if present;
- Real-Time Text communication;
- File transfer;
- Video clip sharing, picture sharing, audio clip sharing. Transferred files may be displayed/replayed on receiving terminal for specified file formats
- Fax;
- Data (CS).

The support of each of these media capabilities is optional for a UE.

At least one common standardized format (e.g. JPEG, AMR) shall be supported per media type.