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**Digital cellular telecommunications system (Phase 2+) (GSM);
Universal Mobile Telecommunications System (UMTS);
LTE;
Communication Waiting (CW) using IP Multimedia (IM)
Core Network (CN) subsystem;
Protocol Specification
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1 Scope

The present document specifies the stage 3, Protocol Description of the Communication Waiting (CW) service, based on stage 1 and stage 2 of the ISDN call waiting supplementary services. It provides the protocol details in the IP Multimedia (IM) Core Network (CN) subsystem based on the Session Initiation Protocol (SIP) and the Session Description Protocol (SDP).

The **Communication Waiting (CW)** service enables a user to be informed, that very limited resources are available for an incoming communication. The user then has the choice of accepting, rejecting or ignoring the waiting call (as per basic call procedures).

The present document is applicable to User Equipment (UE) and Application Servers (AS) which are intended to support the CW supplementary service.

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.
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- 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; Stage 1".

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

[3] Void.

[4] 3GPP TS 24.628: "Common Basic Communication procedures using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification".

[5] 3GPP TS 24.610: "Communication HOLD (HOLD) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification".

[6] 3GPP TS 22.228: "Service requirements for the Internet Protocol (IP) multimedia core network subsystem (IMS); Stage 1".

[7] 3GPP TS 24.623: "Extensible Markup Language (XML) Configuration Access Protocol (XCAP) over the Ut interface for Manipulating Supplementary Services".

[8] RFC 7462 (March 2015): "URNs for the Alert-Info Header Field of the Session Initiation Protocol (SIP)".

[9] RFC 5621 (September 2009): "Message Body Handling in the Session Initiation Protocol (SIP)".

[10] 3GPP TS 24.238: "Session Initiation Protocol (SIP) based user configuration".

[11] RFC 6432:(November 2011) "Carrying Q.850 Codes in Reason Header Fields in SIP (Session Initiation Protocol) Responses".

[12] RFC 3326 (December 2002): "The Reason Header Field for the Session Initiation Protocol (SIP)".

[13] RFC 3023 (January 2001): "XML Media Types".