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In the present document, certain modal verbs have the following meanings:

- shall** indicates a mandatory requirement to do something
- shall not** indicates an interdiction (prohibition) to do something

NOTE 1: The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

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- need not** indicates permission not to do something

NOTE 3: The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

- can** indicates that something is possible
- cannot** indicates that something is impossible

NOTE 4: The constructions "can" and "cannot" shall not to be used as substitutes for "may" and "need not".

- will** indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document
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- might** indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

might not indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

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1 Scope

The present document specifies the call control protocols needed to support a Mission Critical Push To Talk (MCPTT) system interworking with a Land Mobile Radio (LMR) system.

The IWF supports the basic group and other features as specified in 3GPP TS 23.283 [28]. The present document describes functionality modelled on 3GPP TS 24.379 [29].

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 TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 23.379: "Functional architecture and information flows to support mission critical communication services; Stage 2"
- [3] 3GPP TS 24.229: "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".
- [4] 3GPP TS 24.380: "Mission Critical Push To Talk (MCPTT) floor control Protocol specification".
- [5] IETF RFC 3841 (August 2004): "Galler Preferences for the Session Initiation Protocol (SIP)".
- [6] IETF RFC 4028 (April 2005): "Session Timers in the Session Initiation Protocol (SIP)".
- [7] IETF RFC 6050 (November 2010): "A Session Initiation Protocol (SIP) Extension for the Identification of Services".
- [8] IETF RFC 4566 (July 2006): "Session Description Protocol".
- [9] IETF RFC 3840 (August 2004): "Indicating User Agent Capabilities in the Session Initiation Protocol (SIP)".
- [10] IETF RFC 5373 (November 2008): "Requesting Answering Modes for the Session Initiation Protocol (SIP)".
- [11] IETF RFC 5366 (October 2008): "Conference Establishment Using Request-Contained Lists in the Session Initiation Protocol (SIP)".
- [12] IETF RFC 4488 (May 2006): "Suppression of Session Initiation Protocol (SIP) REFER Method Implicit Subscription".
- [13] IETF RFC 4538 (June 2006): "Request Authorization through Dialog Identification in the Session Initiation Protocol (SIP)".
- [14] IETF RFC 3261 (June 2002): "SIP: Session Initiation Protocol".
- [15] IETF RFC 4575 (August 2006): "A Session Initiation Protocol (SIP) Event Package for Conference State".
- [16] 3GPP TS 24.481: "Mission Critical Services (MCS) group management Protocol specification".

- [17] IETF RFC 4483 (May 2006): "A Mechanism for Content Indirection in Session Initiation Protocol (SIP) Messages".
- [18] IETF RFC 3428 (December 2002): "Session Initiation Protocol (SIP) Extension for Instant Messaging".
- [19] IETF RFC 4964 (October 2007): "The P-Answer-State Header Extension to the Session Initiation Protocol for the Open Mobile Alliance Push-to-talk over Cellular".
- [20] IETF RFC 5318 (December 2008): "The Session Initiation Protocol (SIP) P-Refused-URI-List Private-Header (P-Header)".
- [21] IETF RFC 3903 (October 2004): "Session Initiation Protocol (SIP) Extension for Event State Publication".
- [22] IETF RFC 4567 (July 2006): "Key Management Extensions for Session Description Protocol (SDP) and Real Time Streaming Protocol (RTSP)".
- [23] IETF RFC 8101 "IANA Registration of New Session Initiation Protocol (SIP) Resource-Priority Namespace for Mission Critical Push To Talk service".
- [24] IETF RFC 3856 (August 2004): "A Presence Event Package for the Session Initiation Protocol (SIP)".
- [25] IETF RFC 6665 (July 2012): "SIP-Specific Event Notification".
- [26] IETF RFC 6086 (January 2011): "Session Initiation Protocol (SIP) INFO Method and Package Framework".
- [27] 3GPP TS 33.180: "Security of the mission critical service".
- [28] 3GPP TS 23.283: "Mission Critical Communication Interworking with Land Mobile Radio Systems; Stage 2".
- [29] 3GPP TS 24.379: "Mission Critical Push To Talk (MCPTT) call control; Protocol specification".
- [30] 3GPP TS 24.282: "Mission Critical Data (MCData) signalling control; Protocol specification".
- [31] 3GPP TS 29.380: "Mission Critical Push To Talk (MCPTT) media plane control interworking with LMR systems".
- [32] IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax".

3 Definitions of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

IWF performing the controlling role: an IWF role in which the IWF interacts with MCPTT participating functions and MCPTT non-controlling functions across the IWF-1 interface.

IWF performing the non-controlling role: an IWF role in which the IWF interacts with MCPTT participating functions and MCPTT controlling functions across the IWF-1 interface

IWF performing the participating role: an IWF role in which the IWF interacts with MCPTT controlling functions and MCPTT non-controlling functions across the IWF-1 interface.

Participant homed in the IWF: same as "User homed in the IWF".

User homed in the IWF: A user represented by an MCPTT ID in the IWF with the same domain as the IWF.