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Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

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Sample Document

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1 Scope

The present document specifies the signalling control protocols needed to support Mission Critical Data (MCData) communications as specified by 3GPP TS 23.282 [2]. The present document specifies both on-network and off-network protocols.

The present document utilises the common functional architecture to support mission critical services as specified in 3GPP TS 23.280 [3], in support of MCData communications.

The MCData service can be used for public safety applications and also for general commercial applications e.g. utility companies and railways.

The present document is applicable to User Equipment (UE) supporting the MCData client functionality, and to application servers supporting the MCData server functionality.

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 23.282: "Functional architecture and information flows to support Mission Critical Data (MCData); Stage 2";
- [3] 3GPP TS 23.280: "Common functional architecture to support mission critical services; Stage 2";
- [4] IETF RFC 3261 (June 2002): "SIP: Session Initiation Protocol".
- [5] 3GPP TS 24.229: "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".
- [6] IETF RFC 3428 (December 2002): "Session Initiation Protocol (SIP) Extension for Instant Messaging".
- [7] IETF RFC 6050 (November 2010): "A Session Initiation Protocol (SIP) Extension for the Identification of Services".
- [8] IETF RFC 3841 (August 2004): "Caller Preferences for the Session Initiation Protocol (SIP)".
- [9] IETF RFC 4826 (May 2007): "Extensible Markup Language (XML) Formats for Representing Resource Lists".
- [10] 3GPP TS 24.379: "Mission Critical Push To Talk (MCPTT) call control Protocol specification".
- [11] 3GPP TS 24.481: "Mission Critical Services (MCS) group management Protocol specification".
- [12] 3GPP TS 24.484: "Mission Critical Services (MCS) configuration management Protocol specification".
- [13] IETF RFC 4483 (May 2006): "A Mechanism for Content Indirection in Session Initiation Protocol (SIP) Messages".
- [14] IETF RFC 4122 (July 2005): "A Universally Unique Identifier (UUID) URN Namespace".

- [15] 3GPP TS 24.582: "Mission Critical Data (MCDData) media plane control Protocol specification";
- [16] IETF RFC 3840 (August 2004): "Indicating User Agent Capabilities in the Session Initiation Protocol (SIP)".
- [17] IETF RFC 4975 (September 2007): "The Message Session Relay Protocol (MSRP)".
- [18] IETF RFC 5366 (October 2008): "Conference Establishment Using Request-Contained Lists in the Session Initiation Protocol (SIP)".
- [19] IETF RFC 6135 (February 2011): "An Alternative Connection Model for the Message Session Relay Protocol (MSRP)".
- [20] IETF RFC 6714 (August 2012): "Connection Establishment for Media Anchoring (CEMA) for the Message Session Relay Protocol (MSRP)".
- [21] IETF RFC 6086 (January 2011): "Session Initiation Protocol (SIP) INFO Method and Package Framework".
- [22] IETF RFC 7230: "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing".
- [23] IETF RFC 7231: "Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content".
- [24] 3GPP TS 24.482: "Mission Critical Services (MCS) identity management Protocol specification.
- [25] 3GPP TS 24.334: "Proximity-services (ProSe) User Equipment (UE) to Proximity-services (ProSe) Function Protocol aspects; Stage 3".
- [26] 3GPP TS 33.180: "Security of the Mission Critical Service".
- [27] IETF RFC 3856 (August 2004): "A Presence Event Package for the Session Initiation Protocol (SIP)".
- [28] W3C: "XML Encryption Syntax and Processing Version 1.1", <https://www.w3.org/TR/xmlenc-core1/>.
- [29] W3C: "XML Signature Syntax and Processing (Second Edition)", <http://www.w3.org/TR/xmldsig-core/>.
- [30] IETF RFC 4648 (October 2006): "The Base16, Base32, and Base64 Data Encodings".
- [31] 3GPP TS 23.003: "Numbering, addressing and identification".
- [32] IETF RFC 2045 (November 1996): "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies".
- [33] IETF RFC 2392 (August 1998): "Content-ID and Message-ID Uniform Resource Locators".
- [34] IETF RFC 3903 (October 2004): "Session Initiation Protocol (SIP) Extension for Event State Publication".
- [35] IETF RFC 4354 (January 2006): "A Session Initiation Protocol (SIP) Event Package and Data Format for Various Settings in Support for the Push-to-Talk over Cellular (PoC) Service".
- [36] IETF RFC 6665 (July 2012): "SIP-Specific Event Notification".
- [37] 3GPP TS 29.283: "Diameter Data Management Applications".
- [38] IETF RFC 4028 (April 2005): "Session Timers in the Session Initiation Protocol (SIP)".
- [39] IETF RFC 3856 (August 2004): "A Presence Event Package for the Session Initiation Protocol (SIP)".
- [40] IETF RFC 3863 (August 2004): "Presence Information Data Format (PIDF)".
- [41] IETF RFC 4661 (September 2006): "An Extensible Markup Language (XML)-Based Format for Event Notification Filtering".

- [42] 3GPP TS 24.483: "Mission Critical Services (MCS) Management Object (MO)".
- [43] 3GPP TS 24.301: "Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3".
- [44] IETF RFC 5627 (October 2009): "Obtaining and Using Globally Routable User Agent URIs (GRUUs) in the Session Initiation Protocol (SIP)".
- [45] IETF RFC 4567 (July 2006): "Key Management Extensions for Session Description Protocol (SDP) and Real Time Streaming Protocol (RTSP)".
- [46] IANA: Character Sets, <https://www.iana.org/assignments/character-sets/character-sets.xhtml>.

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions 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].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP 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 3GPP TR 21.905 [1].

4 General

4.1 MCDData overview

The MCDData service supports communication between a pair of users (i.e. one-to-one communication) and several users (i.e. group communication), where each user has the ability to:

- share data using Short Data Service (SDS); and
- share files using File Distribution (FD) service.

SDS is provided in both, on-network and off-network while FD is provided only in on-network in this release of the present document.

The present document provides the signalling control protocol enhancements to support the MCDData architectural procedures specified in 3GPP TS 23.282 [2].

For on-network communications, the present document makes use of the existing IMS procedures specified in 3GPP TS 24.229 [5].

The on-network procedures in this document allow an MCDData user to:

- send a standalone SDS using signalling control plane;
- send a standalone SDS using media plane;
- initiate a SDS session;
- send a file using HTTP; and
- send a file using media plane.