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Contents

Foreword

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1 Scope

This document specifies the functional architecture, procedures and information flows needed to support the Mission Critical Data (MCData) services. MCData is a suite of services which utilizes the common functional architecture defined in 3GPP TS 23.280 [5] to support MC services over LTE including the common services core.

MCData services suite consists of the following sub-services:

- short data service (SDS);
- file distribution (FD.

MCData features include:

- conversation management;
- transmission and reception control;
- communication release; and
- enhanced status.

The corresponding service requirements are defined in 3GPP TS 22.282 [3] and 3GPP TS 22.280 [2].

The present document is applicable primarily to MCData service using E-UTRAN access based on the EPC architecture defined in 3GPP TS 23.401 [4]. Certain application functions of the MCData service could also be supported via non-3GPP access networks but no additional functionality is specified to support non-3GPP access.

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

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 22.280: "Mission Critical Common Requirements (MCCoRe); Stage 1".

[3] 3GPP TS 22.282: "Mission Critical Data services".

[4] 3GPP TS 23.401: "General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access".

[5] 3GPP TS 23.280: "Common functional architecture and information flows to support mission critical communication services; Stage 2".

[6] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".

[7] 3GPP TS 23.303: "Proximity-based services (ProSe); Stage 2".

[8] 3GPP TS 23.468: "Group Communication System Enablers for LTE (GCSE_LTE); Stage 2".

[9] 3GPP TS 23.237: "IP Multimedia Subsystem (IMS) Service Continuity; Stage 2".

[10] 3GPP TS 23.002: "Network Architecture".

[11] 3GPP TS 23.379: "Functional architecture and information flows to support Mission Critical Push To Talk (MCPTT); stage 2".

[12] 3GPP TS 29.283: "Diameter data management applications".

[13] 3GPP TS 33.180: "Security of the Mission Critical Service".

[14] 3GPP TS 23.203: "Policy and charging control architecture".

[15] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".

[16] 3GPP TS 29.468: "Group Communication System Enablers for LTE (GCSE_LTE); MB2 reference point; Stage 3".

[17] 3GPP TS 29.214: "Policy and charging control over Rx reference point".

[18] 3GPP TS 23.283: "Mission Critical Communication Interworking with Land Mobile Radio Systems; Stage 2".

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].

Auto-receive: A mechanism where data smaller than a configured size threshold are delivered to the receiving MCData client(s) from the MCData server i.e. without waiting for the receiving user to indicate a present need for the data.

Conversation identifier: A universally unique identifier that identifies a series of related MCData transactions.

Data stream: A sequence of data that is agnostic to any underlying media (e.g. audio, video, telemetry data), on which processing of data (e.g. semantic, syntactic, save or filter operation) can begin before all the content is received.

FD disposition: is one of "not downloaded" and "download completed".

MCData client: An instance of an MC service client that provides the client application function for the MCData service.

MCData group: An MC service group configured for MCData service.

MCData group affiliation: An MC service group affiliation for MCData.

MCData group communication: A one-to-many communication using an MCData service.

MCData group de-affiliation: An MC service group de-affiliation for MCData.

MCData ID: An instance of an MC service ID within the MCData service.

MCData server: An instance of an MC service server that provides the server application function for the MCData service.

MCData service: A data communication service comprising at least one underlying generic capability (e.g. SDS, file distribution, data streaming) with strong security, high availability, reliability and priority handling to support applications for mission critical organizations and mission critical applications for other businesses and organizations (e.g. utilities, railways).

MCData UE: An MC service UE that can be used to participate in MCData services.

MCData user: An MC service user who is authorized for MCData services suite via an MCData UE.

Reception control: A mechanism that allows the MCData service to regulate data reception to the receiving MCData clients.

Reply identifier: A reference to the original MCData transaction to which the current transaction is a reply.

SDS data: A payload with limited size and variable content type used in SDS transactions.

SDS disposition: is one of "undelivered", "delivered" and "read".

Standalone communication: A unidirectional one-to-one or group data communication completed after one transaction.

Transaction identifier: A unique identifier that identifies a MCData transaction within a conversation.

Transmission control: A mechanism that allows the MCData service to regulate data transmission requests from the sending MCData users, either prior to or after active sending from the MCData UE.

For the purposes of the present document, the following terms and definitions given in 3GPP TS 22.280 [2] apply:

Mission Critical
Mission Critical Applications
Mission Critical Service
Mission Critical Organization

For the purposes of the present document, the following terms and definitions given in 3GPP TS 22.282 [3] apply:

MCData system

For the purposes of the present document, the following terms and definitions given in 3GPP TS 23.280 [5] apply:

MC service client
MC service group
MC service group affiliation
MC service group de-affiliation
MC service ID
MC service server

For the purposes of the present document, the following terms and definitions given in 3GPP TS 23.203 [14] apply:

Dynamic PCC rule

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].

DS	Data Streaming
E2EE	End to End Encryption
FD	File Distribution
ITSI	Individual TETRA Subscriber Identity
LMR	Land Mobile Radio
MC	Mission Critical
MCData ID	MCData user identity
PCC	Policy and Charging Control
PCRF	Policy and Charging Rules Function
QCI	QoS Class Identifier
RSI	Radio Set Identity
SDS	Short Data Service
UM	Unacknowledged Mode