

ETSI TS 123 282 V14.3.0 (2017-10)



LTE;
Functional architecture and information flows to support
Mission Critical Data (MCData);
Stage 2
(3GPP TS 23.282 version 14.3.0 Release 14)



Reference

RTS/TSGS-0623282ve30

Keywords

LTE

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:
<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at
<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:
<https://portal.etsi.org/People/CommiteeSupportStaff.aspx>

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2017.
All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members.
3GPP™ and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

oneM2M logo is protected for the benefit of its Members.

GSM® and the GSM logo are trademarks registered and owned by the GSM Association.

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

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

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under <http://webapp.etsi.org/key/queryform.asp>.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Intellectual Property Rights	2
Foreword.....	2
Modal verbs terminology.....	2
Foreword.....	8
1 Scope	9
2 References	9
3 Definitions, symbols and abbreviations	10
3.1 Definitions	10
3.2 Abbreviations	11
4 Introduction	11
5 Architectural requirements	12
5.1 Transmission control	12
5.2 Reception control	12
5.3 Short Data Service capability	12
5.4 File distribution capability.....	13
5.5 Data streaming capability.....	13
5.6 MCDATA group affiliation and MCDATA group de-affiliation.....	13
5.7 Conversation management	14
5.8 Bearer management.....	14
5.8.1 General.....	14
5.8.2 EPS bearer considerations	14
5.8.3 EPS unicast bearer considerations for MCDATA.....	14
5.8.4 MBMS bearer management	14
5.9 Disposition	14
6 Functional model.....	15
6.1 General	15
6.2 Description of the planes.....	15
6.3 Transmission and reception control aspects	15
6.3.1 General.....	15
6.4 Generic functional model.....	15
6.4.1 On-network functional model.....	15
6.4.2 Off-network functional model	16
6.4.3 Functional entities description	16
6.4.3.1 Application plane	16
6.4.3.1.1 MCDATA client	16
6.4.3.1.2 MCDATA server.....	16
6.4.3.1.3 MCDATA user database	17
6.4.3.2 Signalling control plane	17
6.4.4 Reference points	17
6.4.4.1 Application plane	17
6.4.4.1.1 General	17
6.4.4.1.2 Reference point MCDATA-2 (between the MCDATA server and the MCDATA user database)	17
6.4.4.1.3 Reference point MCDATA-3 (between the MCDATA server and the MCDATA server).....	17
6.4.4.1.3A Reference point MCDATA-5 (between the MCDATA capability function and the EPS)	18
6.4.4.1.4 Reference point MCDATA-6 (between the MCDATA server and the EPS)	18
6.5 Functional model for short data service	18
6.5.1 On-network functional model	18
6.5.2 Off-network functional model	19
6.5.3 Functional entities description	19
6.5.3.1 Application plane	19
6.5.3.1.1 SDS function	19
6.5.3.1.2 SDS distribution function	19

6.5.3.1.3	Transmission/Reception control	20
6.5.3.2	Signalling control plane	20
6.5.4	Reference points	20
6.5.4.1	Application plane	20
6.5.4.1.1	Reference point MCDData-SDS-1 (between the SDS distribution function and the SDS function)	20
6.5.4.1.2	Reference point MCDData-SDS-2 (unicast between the SDS distribution function and the SDS function)	20
6.5.4.1.3	Reference point MCDData-SDS-3 (multicast between the SDS distribution function and the SDS function)	20
6.5.4.2	Signalling control plane	20
6.6	Functional model for file distribution.....	21
6.6.1	On-network functional model.....	21
6.6.2	Off-network functional model	21
6.6.3	Functional entities description	21
6.6.3.1	Application plane	21
6.6.3.1.1	FD function.....	21
6.6.3.1.2	Media storage client	22
6.6.3.1.3	Transmission/Reception control	22
6.6.3.1.4	Media storage function	22
6.6.3.2	Signalling control plane	22
6.6.4	Reference points	22
6.6.4.1	Application plane	22
6.6.4.1.1	Reference point MCDData-FD-1 (between the FD functions of the MCDData client and the MCDData server)	22
6.6.4.1.2	Reference point MCDData-FD-2 (unicast between the FD functions of the MCDData client and the MCDData server)	23
6.6.4.1.3	Reference point MCDData-FD-3 (multicast between the FD functions of the MCDData client and the MCDData server).....	23
6.6.4.1.4	Reference point MCDData-FD-4 (media storage function and media storage client).....	23
6.6.4.2	Signalling control plane	23
6.7	Functional model for data streaming	23
6.7.1	On-network functional model	23
6.7.2	Off-network functional model	24
6.7.3	Functional entities description	24
6.7.3.1	Application plane	24
6.7.3.1.1	DS function.....	24
6.7.3.1.2	Data streaming and distribution function.....	24
6.7.3.1.3	Transmission/Reception control	25
6.7.3.2	Signalling control plane	25
6.7.4	Reference points	25
6.7.4.1	Application plane	25
6.7.4.1.1	Reference point MCDData-DS-1 (between the data streaming and distribution function and the DS function)	25
6.7.4.1.2	Reference point MCDData-DS-2 (unicast between the data streaming and distribution function and the DS function).....	25
6.7.4.1.3	Reference point MCDData-DS-3 (multicast between the data streaming and distribution function and the DS function)	26
6.7.4.2	Signalling control plane	26
7	Procedures and information flows.....	26
7.1	MCDData service configuration	26
7.2	Affiliation and de-affiliation to/from MCDData group(s).....	26
7.3	Use of MBMS transmission (on-network)	27
7.3.1	Information flows for MBMS Transmission	27
7.3.2	Use of pre-established MBMS bearers	27
7.3.3	Use of dynamic MBMS bearer establishment	27
7.3.4	Switching from MBMS bearer to unicast bearer	27
7.4	Short data service	28
7.4.1	General.....	28
7.4.2	Short data service for on-network.....	28
7.4.2.1	Information flows for short data service	28

7.4.2.1.1	MCDATA standalone data request	28
7.4.2.1.2	MCDATA data disposition notification	28
7.4.2.1.3	MCDATA standalone session data request	29
7.4.2.1.4	MCDATA standalone session data response	29
7.4.2.1.5	MCDATA session data request	29
7.4.2.1.6	MCDATA session data response	30
7.4.2.1.7	MCDATA group standalone data request (MCDATA client – MCDATA server)	30
7.4.2.1.8	MCDATA group standalone data request (MCDATA server – MCDATA client)	30
7.4.2.1.9	MCDATA data disposition notification(s) (MCDATA server – MCDATA client)	31
7.4.2.1.10	MCDATA group standalone data request (MCDATA client – MCDATA server)	31
7.4.2.1.11	MCDATA group standalone data request (MCDATA server – MCDATA client)	31
7.4.2.1.12	MCDATA group standalone data response	32
7.4.2.1.13	MCDATA group data request (MCDATA client – MCDATA server)	32
7.4.2.1.14	MCDATA group data request (MCDATA server – MCDATA client)	32
7.4.2.1.15	MCDATA group data response	33
7.4.2.2	One-to-one standalone short data service using signalling control plane	33
7.4.2.2.1	General	33
7.4.2.2.2	Procedure	33
7.4.2.3	One-to-one standalone short data service using media plane	35
7.4.2.3.1	General	35
7.4.2.3.2	Procedure	35
7.4.2.4	One-to-one short data service session	36
7.4.2.4.1	General	36
7.4.2.4.2	Procedure	36
7.4.2.5	Group standalone short data service using signalling control plane	38
7.4.2.5.1	General	38
7.4.2.5.2	Procedure	38
7.4.2.6	Group standalone short data service using media plane	39
7.4.2.6.1	General	39
7.4.2.6.2	Procedure	39
7.4.2.7	Group short data service session	41
7.4.2.7.1	General	41
7.4.2.7.2	Procedure	41
7.4.3	Short data service for off-network	43
7.4.3.1	General	43
7.4.3.2	Information flows for short data service	43
7.4.3.2.1	MCDATA standalone data request	43
7.4.3.2.2	MCDATA data disposition notification	43
7.4.3.2.3	MCDATA group standalone data request	43
7.4.3.3	One-to-one standalone short data service using signalling control plane	44
7.4.3.3.1	General	44
7.4.3.3.2	Procedure	44
7.4.3.4	Group standalone short data service using signalling control plane	45
7.4.3.4.1	General	45
7.4.3.4.2	Procedure	45
7.5	File distribution	46
7.5.1	General	46
7.5.2	File distribution for on-network	47
7.5.2.1	Information flows for file distribution	47
7.5.2.1.1	MCDATA upload data request	47
7.5.2.1.2	MCDATA upload data response	47
7.5.2.1.3	MCDATA download data request	47
7.5.2.1.4	MCDATA download data response	47
7.5.2.1.5	MCDATA FD request (using HTTP)	47
7.5.2.1.6	MCDATA FD response (using HTTP)	48
7.5.2.1.7	MCDATA download completed report	48
7.5.2.1.8	MCDATA FD request (using media plane)	48
7.5.2.1.9	MCDATA FD response (using media plane)	49
7.5.2.1.10	MCDATA group standalone FD request (using HTTP)	49
7.5.2.1.11	MCDATA group standalone FD response (using HTTP)	49
7.5.2.1.12	MCDATA group standalone FD request (using media plane)	50
7.5.2.1.13	MCDATA group standalone FD response (using media plane)	50

7.5.2.2	File upload using HTTP	50
7.5.2.2.1	General	50
7.5.2.2.2	Procedure.....	50
7.5.2.3	File download using HTTP	51
7.5.2.3.1	General	51
7.5.2.3.2	Procedure.....	51
7.5.2.4	One-to-one file distribution using HTTP	52
7.5.2.4.1	General	52
7.5.2.4.2	Procedure.....	52
7.5.2.5	One-to-one file distribution using media plane	53
7.5.2.5.1	General	53
7.5.2.5.2	Procedure.....	53
7.5.2.6	Group standalone file distribution using HTTP	55
7.5.2.6.1	General	55
7.5.2.6.2	Procedure.....	55
7.5.2.7	Group standalone file distribution using media plane	56
7.5.2.7.1	General	56
7.5.2.7.2	Procedure.....	56
7.6	Transmission and reception control.....	58
7.6.1	General.....	58
7.6.2	Transmission and reception control for on-network	58
7.6.2.1	Information flows for transmission and reception control	58
7.6.2.1.1	MCDData control indication	58
7.6.2.1.2	MCDData indication	59
7.6.2.1.3	MCDData get deferred list request	59
7.6.2.1.4	MCDData get deferred list response	59
7.6.2.2	Automatic transmission for SDS.....	59
7.6.2.2.1	General	59
7.6.2.2.2	Procedure.....	59
7.6.2.3	Send data with mandatory download	60
7.6.2.3.1	General	60
7.6.2.3.2	Procedure.....	60
7.6.2.4	Send data without mandatory download	61
7.6.2.4.1	General	61
7.6.2.4.2	Procedure.....	62
7.6.2.5	Accessing list of deferred data group communications.....	63
7.6.2.5.1	General	63
7.6.2.5.2	Procedure.....	63
7.7	Communication release	64
7.7.1	General.....	64
7.7.2	Communication release for on-network.....	64
7.7.2.1	Information flows for communication release	64
7.7.2.1.1	Communication release request (one-to-one communication using media plane)	64
7.7.2.1.2	Communication release response (one-to-one communication using media plane)	64
7.7.2.1.3	Communication release request (group communication using media plane)	64
7.7.2.1.4	Communication release response (group communication using media plane)	64
7.7.2.1.5	Communication release request (communication using HTTP)	65
7.7.2.1.6	Communication release response (communication using HTTP).....	65
7.7.2.1.7	Data not available control indication	65
7.7.2.2	MCDData user initiated communication release.....	65
7.7.2.2.1	General	65
7.7.2.2.2	Release of MCDData communication using media plane	66
7.7.2.2.2.1	General.....	66
7.7.2.2.2.2	Procedure	66
7.7.2.2.3	Release of MCDData communication using HTTP	67
7.7.2.2.3.1	General.....	67
7.7.2.2.3.2	Procedure	67
7.7.2.3	MCDData server initiated communication release without prior indication.....	68
7.7.2.3.1	General	68
7.7.2.3.2	Release of MCDData communication using media plane	68
7.7.2.3.2.1	General.....	68
7.7.2.3.2.2	Procedure	68

7.7.2.3.3	Release of MCDData communication using HTTP	69
7.7.2.3.3.1	General.....	69
7.7.2.3.3.2	Procedure	70
7.7.2.4	MCDData server initiated communication release with prior indication.....	70
7.7.2.4.1	General	70
7.7.2.4.2	Procedure.....	71
7.7.2.5	Authorized MCDData user initiated communication release without prior indication	72
7.7.2.5.1	General	72
7.7.2.5.2	Procedure.....	72
7.7.2.6	Authorized MCDData user initiated communication release with prior indication	73
7.7.2.6.1	General	73
7.7.2.6.2	Procedure.....	73
7.8	Conversation management	75
7.8.1	General.....	75
7.8.2	Conversation management for on-network.....	75
7.8.2.1	Information flows for conversation management.....	75
7.8.2.2	One-to-one conversation management.....	75
7.8.2.2.1	Procedure.....	75
7.8.2.3	Group conversation management.....	76
7.8.2.3.1	Procedure.....	76
7.8.3	Conversation management for off-network.....	76
7.8.3.1	One-to-one conversation management.....	76
7.8.3.1.1	Procedure.....	76
7.8.3.2	Group conversation management.....	77
7.8.3.2.1	Procedure.....	77
7.9	Enhanced status	78
7.9.1	General.....	78
7.9.2	Preset values for enhanced status.....	78
7.9.3	Enhanced status for on-network.....	78
7.9.3.1	Sharing enhanced status information.....	78
7.9.3.1.1	Procedure.....	78
7.9.4	Enhanced status for off-network.....	79
7.9.4.1	Sharing enhanced status information.....	79
7.9.4.1.1	Procedure.....	79
7.10	MCDData emergency alert (on-network and off-network).....	80
7.11	User authentication and authorization for MCDData service.....	80
Annex A (normative):	MCDData related configuration data	81
A.1	General	81
A.2	MCDData UE configuration data.....	81
A.3	MCDData user profile configuration data.....	83
A.4	MCDData related Group configuration data.....	89
A.5	MCDData service configuration data.....	91
Annex B (informative):	Transmission control for MCDData	93
B.1	Overview of transmission control process	93
B.2	Transmission control arbitration	93
Annex C (informative):	Secure IP connectivity requirements	95
Annex D (informative):	Change history	96
History		99

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:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

PREVIEW
STANDARD
ETSI
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/c1efcbe1-1fd1-4d30-a6f7-ba2c1cde957a/etsi-ts-123-282-v14.3.0-2017-10>

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 over LTE".
- [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".

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 MCDData client(s) from the MCDData 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 MCDData 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".

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

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

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

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

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

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

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

MCDData 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).

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

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

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

Reply identifier: A reference to the original MCDData 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 MCDData transaction within a conversation.

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

MCDData 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
FD	File Distribution
MC	Mission Critical
MCDData ID	MCDData user identity
PCC	Policy and Charging Control
PCRF	Policy and Charging Rules Function
QCI	QoS Class Identifier
SDS	Short Data Service
UM	Unacknowledged Mode

4 Introduction

The MCDData service suite provides a set of generic capabilities and specific services to enable one-to-one and group data communications between MCDData users.

The MCDData architecture utilises the common functional architecture to support mission critical services over LTE defined in 3GPP TS 23.280 [5] and aspects of the IMS architecture defined in 3GPP TS 23.228 [6], the Proximity-based

Services (ProSe) architecture defined in 3GPP TS 23.303 [7], the Group Communication System Enablers for LTE (GCSE_LTE) architecture defined in 3GPP TS 23.468 [8], the Security of the Mission Critical Service in 3GPP TS 33.180 [13] and the PS-PS access transfer procedures defined in 3GPP TS 23.237 [9] to enable support of the MCDData service.

The MCDData UE primarily obtains access to the MCDData service via E-UTRAN, using the EPS architecture defined in 3GPP TS 23.401 [4]. Certain application functions of MCDData service can be accessed using MCDData UEs via non-3GPP access networks.

5 Architectural requirements

5.1 Transmission control

The MCDData service supports the ability to transmit SDS messages automatically towards the selected recipient user (private communication) or affiliated members of the selected MCDData group. The MCDData server may still reject the sent message (e.g. if there is no authority to send).

For MCDData types other than SDS, the MCDData service invokes a transmission request grant approach before data is permitted to be transmitted. The MCDData service provides a configurable limit for the maximum amount of data for FD or time for streamed data that an MCDData user can transmit in a single request, which may be configured by the MCDData administrator.

Editor's Note: Additional criteria such as frequency of transmission, category/type of data, etc., for transmission control arbitration is FFS.

For congestion control, related to transmission requests, the MCDData service may perform the following:

- reject the data transmission requests and then shall notify the MCDData user of the rejection;
- queue the data transmission requests; or
- at anytime, withhold the permission to transmit data automatically.

The MCDData service shall notify the transmitting MCDData group member if there are no other MCDData group members affiliated to the MCDData group.

5.2 Reception control

The MCDData service shall support the ability to receive small amounts of data automatically. The MCDData service may store data waiting for delivery in a temporary store, and notify availability to the receiving MCDData users. The data which is temporarily stored may be configured with "time to live" value, and subsequently, the data may be purged from the temporary store upon expiry of "time to live".

The recipient individual user (private communication) or affiliated members of the MCDData group(s) shall be notified of the list of available data either on request or periodically.

The MCDData service shall provide a mechanism for the MCDData user to select data to be downloaded from the list corresponding to the temporary store, subject to limitations such as expiry time and size.

The MCDData service shall support the ability to automatically deliver files with a size less than a configured threshold value (i.e. auto-receive). The data size for auto-receive shall be configured by the MCDData administrator.

5.3 Short Data Service capability

The MCDData service shall support SDS capability for one-to-one and group communications.

The SDS capability shall support messages with a maximum payload of at least 1000 bytes. The supported message types shall include text, binary, or hyperlinks. Multiple message types may be interleaved within in a single message payload. The payload shall support indication of location information of the sending MCDData user.