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Contents

Foreword

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y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

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1 Scope

The present document provides the service requirements for operation of the MCData service. MCData makes use of capabilities included in Group Communication System Enablers, Proximity Services, Isolated E-UTRAN operation for Public Safety and Mission Critical Services Common Requirements with additional requirements specific to the MCData Service. The MCData Service can be used for public safety applications and also for general commercial applications (e.g., utility companies and railways). The requirements in this specifications do not apply to GSM or UMTS.

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 TR 41.001: "GSM Specification set".

[3]   3GPP TS 22.280: "Mission Critical Services Common Requirements".

[4]   3GPP TS 22.179: "Mission Critical Push to Talk (MCPTT); Stage 1".

[5]   ETSI TS 100 392-2 v.3.7.1: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 2: Air Interface (AI)".

[6]   3GPP TS 22.281: "Mission Critical Video services".

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].

Conversation: A series of messages that are linked to the same topic within a group or one-to-one data communication.

Conversation ID: An identifier that uniquely identifies a conversation within a group or one-to-one data communication.

MCData Conversation Hang Time: The time from the transmission of an MCData message after which a subsequent MCData message is no longer considered to be linked to the previous one.

MCData System: The collection of applications, services, and enabling capabilities required to provide Mission Critical Data for a Mission Critical Organization.

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].

IOPS   Isolated E-UTRAN Operation for Public Safety
SDS   Short Data Service

4 Overview

MCData defines a service for Mission Critical Data services. As well as voice services, current mission critical users have been increasing their use of data services, including low throughput services on legacy networks and data services on commercial networks. This need will continue to grow with the creation of the new multimedia services. The MCData service needs to provide a means to manage all data connections of mission critical users in the field and provide relevant resources to the ones who need it. For example mission critical users already use event manager software along with the voice system. The migration to 3GPP networks will allow mission critical users to operate current and new data services whilst relying on the fundamental capabilities of mission critical communication such as defined for MCPTT in [4] and included into MCCoRe [3].

The MCData Service provides a set of communication services that will be directly used by the user or functions that will be called by external applications in control rooms.

The MCData Service will reuse functions including end-to-end encryption, key management, authentication of the sender, etc. defined in [3] in order to provide group communications for data services. As for all mission critical services, users affiliate to groups in order to receive communications directed to the group.

In addition, the MCData Service will provide a set of generic capabilities such as: messaging, file distribution, data streaming, IP proxy, etc. Also, the MCData Service will provide specific services such as conversation management, data base enquiries, internet access, robots control.

The MCData Service is expected to have open interfaces in the network. It needs also to provide an opportunity for a variety of multimedia applications using the MCData Service.

5 MCData generic capability requirements common for on-network and off-network

5.1 Introduction

MCData makes frequent use of a set of capabilities and enablers that allows for many end user services to be built on a common foundation. Several generic capabilities are defined for use in the MCData Service. These capabilities can be used on their own to transfer files, messages and other content to individuals and affiliated members of groups or combined with other services, through an application, to provide complete end users services as determined by the authorities implementing the service. The MCData generic capabilities are common for on-network and off-network.

It is not intended to invent new protocols for the MCData Service. Where existing protocols are efficient and sufficient, the service should make use of these protocols.

5.2 SDS feature

5.2.1 General

The SDS feature of the MCData Service could be considered as a basic protocol carrying a limited size, but variable content, payload message. This message could be text or could be marked for extensible purposes including short binary messages for application communication. Messaging could be one-to-one messaging or could be group messaging using groups as specified in MCCoRe.

5.2.2 Requirements

[R-5.2.2-001] The MCData Service shall provide an SDS feature for conveyance of limited size, variable content, messages.

[R-5.2.2-002] The MCData SDS shall provide a group service to affiliated members with policy assertion capabilities (e.g. certain types of message or content may only be relevant to certain members of a group due, for example, to location).

[R-5.2.2-003] The MCData SDS shall provide a one to one service with policy assertion capabilities (e.g. policy to limit certain types of message or content to certain users due, for example, to location or user privilege).

[R-5.2.2-004] The MCData SDS shall provide the option to include a content payload of at least [1000] characters of 8 bit text or [500] characters of 16 bit text or [250] characters of 32 bit text and the necessary character encoding information (for example to identify alphabet used).

[R-5.2.2-005] The MCData SDS shall provide the option to include a content payload of at least [1000] characters of hyperlink or interleaved text and hyperlink(s) to allow subsequent access to linked content (which may be a large file).

[R-5.2.2-006] The MCData SDS shall provide the option to include a content payload of at least [1000] bytes of binary data to be used by a local running application and the necessary addressing detail to identify the intended application.

[R-5.2.2-007] The MCData SDS shall provide a message thread indication so that multiple message flows can be managed independently.

[R-5.2.2-008] When replying to a message on the MCData SDS or sending any message which should be coupled with previously sent or received messages or message flows; the message thread indication shall use the same indication as was used for those previous messages.

[R-5.2.2-009] The MCData SDS shall provide a selectable read receipt indication. When requested, the receiving entity shall provide receipt indication for delivered and read messages as appropriate.

   NOTE 1: The read indication will implicitly indicate delivered as well.

[R-5.2.2-010] The MCData SDS shall provide a configurable read receipt indication. When configured, the receiving entity shall provide receipt indication addressed to the application for delivered and read messages as appropriate.

   NOTE 2: The read indication will implicitly indicate delivered as well.

[R-5.2.2-011] The MCData SDS shall permit delivery history interrogation for suitably authorized users.

[R-5.2.2-012] The MCData SDS shall provide the option to add a field indicating location of the sending user/UE.

[R-5.2.2-013] The MCData SDS shall allow empty messages including only a field indicating location of the sending user/UE.

5.2.3 Remote Start Requirements Using SDS

[R-5.2.3-001] SDS content received in a UE, addressed to a known local application that is not yet running shall cause the UE to start the local application and pass the content to the application. This could be used to start an application and pass to it the initial data.

[R-5.2.3-002] The MCData SDS shall provide the capability to remotely start a local application (e.g. situational awareness). This may be through specific use of binary payload on theSDS.

5.3 File distribution capability

5.3.1 General

File distribution is a fundamental capability of the MCData Service. File distribution can be used to provide a standalone file transfer capability or can be invoked by a controlling application to support the purpose of the application.

5.3.2 Requirements

[R-5.3.2-001] The MCData Service shall provide a file distribution capability.

[R-5.3.2-002] The MCData file distribution capability shall provide a service to allow a user to send a file to any combination of individual users and/or affiliated groups.

[R-5.3.2-003] The MCData file distribution capability shall provide an option for each recipient to choose to receive the file or not (e.g. by storing the file and sending a link (URL) to all relevant members).

   NOTE 1:   By using this capability a user can choose when to receive the file.

[R-5.3.2-004] The MCData file distribution capability shall allow a user to reject to receive the file where appropriate.

[R-5.3.2-005] The MCData file distribution capability shall provide a sending user selectable indication for mandatory download so that the UE, for all relevant receiving members, will automatically download the file.

   NOTE 2:   The mandatory indication provides a system level capability and could be invoked automatically by need of the application or might be provided for selection by the user.

[R-5.3.2-006] The MCData file distribution capability shall provide download complete indications for each recipient successfully downloading the file.

[R-5.3.2-007] The MCData file distribution capability shall allow the sender to select to send the file immediately to all chosen users.

[R-5.3.2-008] The MCData file distribution capability shall make use of available system delivery efficiencies for distribution of common information to users within a specific geographic area and able to receive at the same time.

[R-5.3.2-009] The MCData file distribution capability shall allow a user to cancel distribution of files they have sent, but have not been delivered.

[R-5.3.2-010] The MCData file distribution capability shall allow an authorised user to cancel distribution of files being sent or waiting to be sent.

5.4 Data streaming capability

5.4.1 General

Data streaming is a fundamental capability of the MCData Service. Data streaming can be used to provide a standalone data streaming capability or can be invoked by a controlling application to support the purpose of the application.

5.4.2 Requirements

[R-5.4.2-001] The MCData Service shall provide a data streaming capability.

[R-5.4.2-002] The MCData data streaming capability shall provide an option that allows each recipient to choose to receive the data stream or not (e.g. by sending a link (URL) to all relevant members).

[R-5.4.2-003] The MCData data streaming capability shall allow a user to reject to receive the datastream.

[R-5.4.2-004] The MCData data streaming capability shall provide a sending user selectable indication for automatic reception by the UE.

[R-5.4.2-005] The MCData data streaming capability shall provide start and stop records to the sender for each recipient successfully receiving the data stream.

[R-5.4.2-006] The MCData data streaming capability shall make use of available system delivery efficiencies for streaming of common information to users within the same relevant area and able to receive at the same time.

[R-5.4.2-007] The MCData data streaming capability shall allow a user to cancel streaming of data they have initiated including data remaining buffered in the system waiting to be streamed.

[R-5.4.2-008] The MCData data streaming capability shall allow an authorised user to terminate streaming of data being sent and cancel streaming of data remaining buffered in the system waiting to be streamed.