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1 Scope

This document specifies the common functional architecture, procedures and information flows needed to support mission critical services including the common services core architecture.

The corresponding service requirements are defined in 3GPP TS 22.179 [2], 3GPP TS 22.280 [3], 3GPP TS 22.281 [4] and 3GPP TS 22.282 [5].

The present document is applicable primarily to mission critical services using E-UTRAN access based on the EPC architecture defined in 3GPP TS 23.401 [17]. Certain MC service functions such as dispatch and administrative functions could also be supported via non-3GPP access networks but no additional functionality is specified to support non-3GPP access.

The common functional architecture to support mission critical services can be used for public safety applications and also for general commercial applications e.g. utility companies and railways.

2 References

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[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 22.179: "Mission Critical Push to Talk (MCPTT) over LTE; Stage 1".

[3] 3GPP TS 22.280: "Mission Critical Services Common Requirements (MCCoRe); Stage 1".

[4] 3GPP TS 22.281: "Mission Critical Video services over LTE".

[5] 3GPP TS 22.282: "Mission Critical Data services over LTE".

[6] 3GPP TS 23.002: "Network Architecture".

[7] 3GPP TS 23.179: "Functional architecture and information flows to support mission critical communication services; Stage 2"

[8] 3GPP TS 23.203: "Policy and charging control architecture".

[9] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".

[10] 3GPP TS 23.237: "IP Multimedia Subsystem (IMS) Service Continuity; Stage 2".

[11] 3GPP TS 23.246: "Multimedia Broadcast/Multicast Service (MBMS); Architecture and functional description".

[12] 3GPP TS 23.281: "Functional architecture and information flows to support Mission Critical Video (MCVideo); Stage 2".

[13] 3GPP TS 23.282: "Functional architecture and information flows to support Mission Critical Data (MCData); Stage 2".

[14] 3GPP TS 23.303: "Proximity-based services (ProSe); Stage 2".

[15] 3GPP TS 23.335: "User Data Convergence (UDC); Technical realization and information flows".

[16] 3GPP TS 23.379: "Functional architecture and information flows to support Mission Critical Push To Talk (MCPTT); Stage 2".

[17] 3GPP TS 23.401: "General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access".

[18] 3GPP TS 23.468: "Group Communication System Enablers for LTE (GCSE_LTE); Stage 2".

[19] 3GPP TS 29.283: "Diameter Data Management Applications".

[20] 3GPP TS 33.179: "Security of Mission Critical Push-To-Talk (MCPTT)".

[21] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2".

[22] IETF RFC 5245 (April 2010): "Interactive Connectivity Establishment (ICE): A Protocol for Network Address Translator (NAT) Traversal for Offer/Answer Protocols".

[23] GSMA PRD IR.92 v10.0: "IMS Profile for Voice and SMS".

[24] GSMA PRD IR.88 v15.0: "LTE and EPC Roaming Guidelines".

[25] 3GPP TS 33.180: "Security of the mission critical service".

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].

Active MC service user profile: The MC service user profile that is currently used by an MC service client of an MC service user while receiving MC service.

Location: The current physical location of the MC service UE.

MC service: A generic name for any one of the three mission critical services: either MCPTT, or MCVideo, or MCData.

MC service affiliated group member: An MC service user who has indicated an interest in a particular MC service group and has been accepted to participate in MC service group communication for that MC service group.

MC service client: A generic name for the client application function of a specific MC service. MC service client could be replaced by MCPTT client, or MCVideo client, or MCData client depending on the context.

MC service group: A defined set of MC service users with associated communication dispositions (e.g. media restrictions, default priority and commencement directions) configured for the use with one or more MC services.

MC service group affiliation: A mechanism by which an MC service user's MC service(s) communication interest in one or more MC service groups is determined.

MC service group call: A mechanism by which an MC service user can make a one-to-many MC service(s) transmission to other users that are members of MC service group(s).

MC service group de-affiliation: A mechanism by which an MC service user's MC service(s) communication interest in one or more MC service groups is removed.

MC service group home system: The mission critical system where the MC service group is defined.

MC service group host MC service server: The MC service server within a mission critical system which provides centralised support for a particular MC service of an MC service group defined in a MC service group home system.

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Full standard:
https://standards.iteh.ai/catalog/standards/sist/553f56d0-e34-421b-a4f4-5902107b8...e/etsi-ts-123-280-v14.3.0-2017-10

MC service group member: An MC service user, whose MC service ID is listed in a particular MC service group.

MC service ID: A generic name for the user ID of a mission critical user within a specific MC service. MC service ID could be replaced by MCPTT ID, or MCVideo ID, or MCData ID depending on the context.

MC service server: A generic name for the server application function of a specific MC service. MC service server could be replaced by MCPTT server, MCVideo server, or MCData server depending on the context.

MC service user: An authorized user, who can use an MC service UE to participate in one or more MC services.

MC service user profile: The set of information associated to an MC service user that allows that user to employ one or more MC services in a given role and from a given MC service UE.

MC service UE: A UE that can be used to participate in one or more MC services.

MC user: A user, identified by an MC ID, who, after authorization, obtains mission critical service(s).

Mission critical system: The collection of applications, services, and enabling capabilities required to provide a single mission critical service or multiple mission critical services to one or more mission critical organizations.

Pre-selected MC service user profile: The MC service user profile that is to be selected as the active MC service user profile through configuration, and applicable for an authenticated MC service user upon MC service authorization.

Selected MC service user profile: The MC service user profile that is to be selected as the active MC service user profile for an MC service upon request by an MC service user.

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

Mission Critical
Mission Critical Applications
Mission Critical Organization
Mission Critical Service

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Full standard:
https://standards.iteh.ai/catalog/standards/sist/553f56d6-0e34-42f5-a4f4-9f02107bf8ce/etsi-ts-123-280-v14.3.0-2017-10

3.2 Symbols

For the purposes of the present document, the symbols given in 3GPP TS 22.280 [3] apply

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3.3 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].

APN	Access Point Name
BM-SC	Broadcast Multicast Service Centre
CSC	Common Services Core
CSCF	Call Server Control Function
DPF	Direct Provisioning Function
E-UTRAN	Evolved Universal Terrestrial Radio Access Network
EPC	Evolved Packet Core
EPS	Evolved Packet System
GBR	Guaranteed Bit Rate
GCS AS	Group Communication Service Application Server
GCSE_LTE	Group Communication Service Enabler over LTE
GRUU	Globally Routable User agent URI
HSS	Home Subscriber Server
HTTP	Hyper Text Transfer Protocol
I-CSCF	Interrogating CSCF
IARI	IMS Application Reference Identifier
ICE	Interactive Connectivity Establishment