**3GPP TSG-CT WG1 Meeting #134-eC1-221694**

**E-Meeting, 17th – 25th February 2022**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | 0166 | **rev** |  | **Current version:** |  |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | 5GS/EPS alignment in MCVideo procedures | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Stage-2 MCOver5GS normative work as captured in TS 23.289 focuses on "On-network unicast communication for MC services" and specifies the use of the 5G System (5GS) to support mission critical services. Existing MC specs use EPS-specific terminology and certain EPS aspects are not applicable to 5GS in this release of the specifications like ProSe and MBMS.  Certain statements are also limiting the present document to apply only to EPS. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1)Update general description not to be limited to EPS  2)Add an appendix listing the differences of 5GS over EPS in MC specs. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Implementation of specs is problematic since it is unclear which aspects of EPS are applicable to 5GS | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 2, 4.1, new Annex, new X.1, new X.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

1st change

# 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] IETF RFC 4566 (July 2006): "Session Description Protocol".

[3] IETF RFC 3605 (October 2003): "Real Time Control Protocol (RTCP) attribute in Session Description Protocol (SDP)".

[4] 3GPP TS 24.483: "Mission Critical Services (MCS) Management Object (MO)".

[5] 3GPP TS 24.581: "Mission Critical Video (MCVideo) media plane control Protocol specification".

[6] IETF RFC 4567 (July 2006): "Key Management Extensions for Session Description Protocol (SDP) and Real Time Streaming Protocol (RTSP)".

[7] IETF RFC 3264 (June 2002): "An Offer/Answer Model with the Session Description Protocol (SDP)".

[8] 3GPP TS 33.180: "Security of the mission critical service".

[9] 3GPP TS 29.199-9: "Open Service Access (OSA); Parlay X Web Services; Part 9: Terminal location".

[10] 3GPP TS 24.007: "Mobile radio interface signalling layer 3; General aspects".

[11] 3GPP TS 24.229: "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[12] IETF RFC 3903 (October 2004): "Session Initiation Protocol (SIP) Extension for Event State Publication".

[13] IETF RFC 3856 (August 2004): "A Presence Event Package for the Session Initiation Protocol (SIP)".

[14] IETF RFC 6050 (November 2010): "A Session Initiation Protocol (SIP) Extension for the Identification of Services".

[15] IETF RFC 3261 (June 2002): "SIP: Session Initiation Protocol".

[16] IETF RFC 6665 (July 2012): "SIP-Specific Event Notification".

[17] IETF RFC 3428 (December 2002): "Session Initiation Protocol (SIP) Extension for Instant Messaging".

[18] IETF RFC 3863 (August 2004): "Presence Information Data Format (PIDF)".

[19] IETF RFC 4661 (September 2006): "An Extensible Markup Language (XML)-Based Format for Event Notification Filtering".

[20] IETF RFC 3841 (August 2004): "Caller Preferences for the Session Initiation Protocol (SIP)".

[21] IETF RFC 6086 (January 2011): "Session Initiation Protocol (SIP) INFO Method and Package Framework".

[22] IETF RFC 3840 (August 2004): "Indicating User Agent Capabilities in the Session Initiation Protocol (SIP)".

[23] IETF RFC 4028 (April 2005): "Session Timers in the Session Initiation Protocol (SIP)".

[24] 3GPP TS 24.481: "Mission Critical Services (MCS) group management; Protocol specification".

[25] 3GPP TS 24.484: "Mission Critical Services (MCS) configuration management; Protocol specification".

[26] 3GPP TS 23.281: "Functional architecture and information flows to support Mission Critical Video (MCVideo); Stage 2".

[27] IETF RFC 5373 (November 2008): " Requesting Answering Modes for the Session Initiation Protocol (SIP)".

[28] IETF RFC 5318 (December 2008): "The Session Initiation Protocol (SIP) P-Refused-URI-List Private-Header (P-Header)".

[29] IETF RFC 4483 (May 2006): "A Mechanism for Content Indirection in Session Initiation Protocol (SIP) Messages".

[30] IETF RFC 4964 (September 2007): "The P-Answer-State Header Extension to the Session Initiation Protocol for the Open Mobile Alliance Push to Talk over Cellular".

[31] IETF RFC 4488 (May 2006): "Suppression of Session Initiation Protocol (SIP) REFER Method Implicit Subscription".

[32] IETF RFC 4538 (June 2006): " Request Authorization through Dialog Identification in the Session Initiation Protocol (SIP)".

[33] IETF RFC 4412 (February 2006): "Communications Resource Priority for the Session Initiation Protocol (SIP)".

[34] IETF RFC 4567 (July 2006): "Key Management Extensions for Session Description Protocol (SDP) and Real Time Streaming Protocol (RTSP)".

[35] IETF RFC 5626 (October 2009): "Managing Client-Initiated Connections in the Session Initiation Protocol (SIP)".

[36] 3GPP TS 22.281: "Mission Critical Video over LTE".

[37] IETF RFC 5366 (October 2008): "Conference Establishment Using Request-Contained Lists in the Session Initiation Protocol (SIP)".

[38] IETF RFC 8101 (March 2017): "IANA Registration of New Session Initiation Protocol (SIP) Resource-Priority Namespace for Mission Critical Push To Talk Service".

[39] 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".

[40] 3GPP TS 24.379: "Mission Critical Push To Talk (MCPTT) call control Protocol specification".

[41] IETF RFC 5627 (October 2009): "Obtaining and Using Globally Routable User Agent URIs (GRUUs) in the Session Initiation Protocol (SIP)".

[42] 3GPP TS 24.581: "Mission Critical Video (MCVideo) media plane control; Protocol specification".

[43] IETF RFC 8101 (March 2017): "IANA Registration of New Session Initiation Protocol (SIP) Resource-Priority Namespace for Mission Critical Push To Talk Service".

[44] 3GPP TS 29.468 "Group Communication System Enablers for LTE (GCSE\_LTE); MB2 reference point; Stage 3".

[45] W3C: "XML Encryption Syntax and Processing Version 1.1", <https://www.w3.org/TR/xmlenc-core1/>.

[46] IETF RFC 4648 (October 2006): "The Base16, Base32, and Base64 Data Encodings".

[47] 3GPP TS 23.003: "Numbering, addressing and identification".

[48] IETF RFC 2045 (November 1996): "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies".

[49] IETF RFC 2392 (August 1998): "Content-ID and Message-ID Uniform Resource Locators".

[50] W3C: "XML Signature Syntax and Processing (Second Edition)", <http://www.w3.org/TR/xmldsig-core/>

[51] (Void)

[52] 3GPP TS 24.482: "Mission Critical Services (MCS) identity management Protocol specification".

[53] 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".

[54] 3GPP TS 29.283: "Diameter Data Management Applications".

[55] IETF RFC 6509 (February 2012): "MIKEY-SAKKE: Sakai-Kasahara Key Encryption in Multimedia Internet KEYing (MIKEY)".

[56] IETF RFC 4567 (July 2006): "Key Management Extensions for Session Description Protocol (SDP) and Real Time Streaming Protocol (RTSP)".

[57] IETF RFC 4575 (August 2006): "A Session Initiation Protocol (SIP) Event Package for Conference State".

[58] IETF RFC 4122 (July 2005): "A Universally Unique IDentifier (UUID) URN Namespace".

[59] 3GPP TS 24.334: "Proximity-services (ProSe) User Equipment (UE) to ProSe function protocol aspects".

[60] 3GPP TS 24.237: "IP Multimedia (IM) Core Network (CN) subsystem IP Multimedia Subsystem (IMS) service continuity".

[61] 3GPP TS 26.281: "Mission Critical Video (MCVideo); Codecs and media handling".

[62] 3GPP TS 24.301: "Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS)".

[63] IETF RFC 6809 (November 2012): "Mechanism to Indicate Support of Features and Capabilities in the Session Initiation Protocol (SIP)".

[64] IETF RFC 3515 (April 2003): "The Session Initiation Protocol (SIP) Refer Method".

[65] IETF RFC 7647 (September 2015): "Clarifications for the Use of REFER with RFC 6665".

[66] IETF RFC 7462 (March 2015): "URNs for the Alert-Info Header Field of the Session Initiation Protocol (SIP)".

[67] 3GPP TS 26.346: " Multimedia Broadcast/Multicast Service (MBMS); Protocols and codecs".[68] 3GPP TS 24.008: "Mobile Radio Interface Layer 3 specification; Core Network Protocols; Stage 3".

[69] 3GPP TS 23.203: "Policy and charging control architecture".

[70] 3GPP TS 29.061: "Interworking between the Public Land Mobile Network (PLMN) supporting packet based services and Packet Data Networks (PDN)".

[71] IETF RFC 5368 (October 2008): "Referring to Multiple Resources in the Session Initiation Protocol (SIP)".

[72] IETF RFC 5761 (April 2010): "Multiplexing RTP Data and Control Packets on a Single Port".

[73] 3GPP TS 24.216: "Communication continuity managed object".

[74] 3GPP TS 23.280: " Technical Specification Group Services and System Aspects; Common functional architecture to support mission critical services; Stage 2".

[75] 3GPP TS 22.280: "Mission Critical Services Common Requirements (MCCoRe); Stage 1".

[x] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".

2nd change

## 4.1 MCVideo overview

The MCVideo service supports communication between several users (i.e. group call), where each user has the ability to send and receive video media. The MCVideo service also supports private calls between two users. Group calls and private calls can be provided on-network and off-network.

The present document provides the call control protocol to support the MCVideo architectural procedures specified in 3GPP TS 23.281 [26].

For on-network calls, the present document makes use of the existing IMS procedures specified in 3GPP TS 24.229 [11]. For on-network group calls, the procedures in the present document allow the use of unicast bearers.

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

- initiate a new MCVideo group session;

- join an MCVideo group session that has already been established;

- leave an established MCVideo group session and then re-join the same MCVideo group session if still established; and

- use a functional alias to identify the MCVideo user.

For off-network calls, the present document utilises the procedures for ProSe direct discovery for public safety and the procedures for one-to-one ProSe direct communication for Public Safety, as specified in 3GPP TS 24.334 [59]. ProSe is only supported in EPS. The present document specifies the MCVideo Off-Network Protocol (MVONP) and the MVONP application procedures.

For on-network and off-network calls, the present document provides support for MCVideo emergency calls, MCVideo imminent-peril calls and MCVideo emergency alerts.

NOTE: MCVideo emergency calls do not utilise emergency bearers. Instead the EPS bearer priority of a normal bearer is adjusted.

The MCVideo procedures provided by the present document refer to:

- the transmission-control procedures defined in 3GPP TS 24.581[5];

- the group management procedures defined in 3GPP TS 24.481 [24];

- the identity management procedures defined in 3GPP TS 24.482 [52];

- the security procedures defined in 3GPP TS 33.180 [8]; and

the PS-PS access transfer procedures defined in 3GPP TS 24.237 [60].

The MCVideo procedures provided by the present document access the configuration parameters provided by 3GPP TS 24.483 [4] and 3GPP TS 24.484 [25].

Codecs and media handling for MCVideo are specified in 3GPP TS 26.281 [61];

The following procedures are provided within this document:

- common procedures are specified in clause 6;

- procedures for registration in the IM CN subsystem and service authorisation are specified in clause 7;

- procedures for affiliation are specified in clause 8;

- procedures for on-network and off-network group call are specified in clause 9;

- procedures for on-network and off-network private call are specified in clause 10;

- procedures for on-network and off-network emergency alert are specified in clause 11; and

- procedures for management of functional alias in clause 20;

The MCVideo UE primarily obtains access to the MCVideo service via E-UTRAN or NG-RAN, using the procedures defined in 3GPP TS 24.301 [62] and 3GPP TS 24.501 [x].

3rd change

Annex X (normative):  
MCVideo session control specific concepts for the support of mission critical services over 5GS

4th change

# X.1 General

The present document applies to both EPS and 5GS. This annex lists the aspects of MCVideo session control protocols which are different in 5GS from EPS. Certain aspects that are only applicable to EPS are described in clause X.2.

5th change

# X.2 Aspects not applicable to 5GS

The following aspects of EPS mentioned in the present document are not applicable to 5GS:

- Proximity-services (ProSe) and the corresponding procedures; and

- Multimedia Broadcast and Multicast Service (MBMS) and the corresponding procedures.

End of changes