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(3GPP TS 26.281 version 19.0.0 Release 19)

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Contents

Foreword

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Introduction

Requirements for codecs and media handling in support of the Mission Critical Video (MCVideo) service are contained in the present document.

The MCVideo service supports video communication between several users (i.e. group call), where each user has the ability to gain access to the permission to talk in an arbitrated manner. The MCVideo service also supports private calls between two users.

The MCVideo architecture is based on the functional architecture for mission critical communication services defined in 3GPP TS 23.280 [4].

1 Scope

The present document specifies the codecs and media handling for MCVideo. The requirements for MCVideo are specified by SA1 in two technical specifications:

a. The requirements specific to Mission Critical Video have been specified in 3GPP TS 22.281 [3].

b. The requirements common to multiple mission critical services have been specified in 3GPP TS 22.280 [2].

The architectural work for MCVideo is specified by SA6 in two technical specifications:

a. architectural and feature work specific to MCVideo have been specified in 3GPP TS 23.281 [5].

b. architectural aspects common to multiple mission critical services have been specified in 3GPP TS 23.280 [4].

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 Services Common Requirements".

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

[4] 3GPP TS 23.280: "Common functional architecture to support mission critical services; Stage 2".

[5] 3GPP TS 23.281: "Functional architecture and information flows to support Mission Critical Video (MCVideo); Stage 2".

[6] 3GPP TS 26.179: "Mission Critical Push To Talk (MCPTT); Codecs and media handling".

[7] 3GPP TS 33.179: "Security of Mission Critical Push To Talk (MCPTT) over LTE".

[8] IETF RFC 3550 (2003): "RTP: A Transport Protocol for Real-Time Applications".

[9] IETF RFC 3711 (2004): "The Secure Real-time Transport Protocol (SRTP)".

[10] IETF RFC 6184 (2011): "RTP Payload Format for H.264 Video".

3 Definitions 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].

240p: "240 progressive" - video resolution denoting the vertical resolution; all 240 lines are drawn in each frame.

720p: "720 progressive"- video resolution denoting the vertical resolution; all 720 lines are drawn in each frame.

1080p: "1080 progressive" -video resolution denoting the vertical resolution; all 1080 lines are drawn in each frame.

MCVideo client: The MCVideo client functional entity acts as the user agent for all MCVideo application transactions.

MCVideo Service: A video communication service supporting applications for mission critical organizations and mission critical applications for other businesses and organizations (e.g., utilities, railways) with strong security, high availability, reliability and priority handling.

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

MCVideo User: An MC service user who is authorized to MCVideo services via an MCVideo UE.

Mission Critical: Quality or characteristic of a communication activity, application, service or device, that requires low setup and transfer latency, high availability and reliability, ability to handle large numbers of users and devices, strong security and priority and pre-emption handling.

Mission Critical Applications: Generic communication applications with mission critical characteristics, traditionally encompassing push-to-talk voice (MCPTT), real-time video (MCVideo) and real-time data (MCData).

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].

AVC	Advanced Video Coding
CHP	Constrained High Profile
fps	frames per second
GCS	Group Communication Service
HEVC	High Efficiency Video Coding
MBMS	Multimedia Broadcast/Multicast Service
MC	Mission Critical
MCPTT	Mission Critical Push-To-Talk
MCVideo	Mission Critical Video
RTCP	Real-Time Transport Control Protocol
RTP	Real-Time Transport Protocol
SRTCP	Secure Real-Time Transport Control Protocol
SRTP	Secure Real-Time Transport Protocol
UC	Unicast

4 Codecs and media handling for MCVideo

4.1 MCVideo client

4.1.1 Codec

MCVideo clients shall support the H.264 (AVC) codec as the mandatory universal interoperability codec.

MCVideo clients shall support video encoding and decoding of at least 240p. MCVideo clients may support video encoding and decoding up to 720p. More specifically:

- Transmitting capable MCVideo clients should support video encoding via H.264 (AVC) Constrained High Profile (CHP) Level 3.1 up to 1280x720@30fps.
- Receiving capable MCVideo clients should support video decoding via H.264 (AVC) Constrained High Profile (CHP) Level 3.1.

Transmitting capable MCVideo clients may also support variable rate video encoding from 10fps to 30fps and 240p to 1080p.

Receiving capable MCVideo clients may also support H.264 (AVC) Constrained High Profile (CHP) Level 4 with resolutions up to 1080p and framerate up to 30fps.

Based on operator / MCVideo service provider policy, the MCVideo service may optionally and additionally support the H.265 (HEVC) codec. If MCVideo services support the H.265 (HEVC) codec then MCVideo clients should additionally support encoding and decoding H.265 (HEVC). More specifically:

- Transmitting capable MCVideo clients may support video encoding via H.265 (HEVC) Main Profile, Main Tier, Level 3.1 up to 1280x720@30fps.
- Receiving capable MCVideo clients may support decoding of H.265 (HEVC) Main Profile, Main Tier, Level 4 with resolutions up to 1080p and framerate up to 30fps.
- Transmitting capable MCVideo clients may also support H.265 encoding in lossless mode.
- Receiving capable MCVideo clients may also support H.265 decoding in lossless mode.

4.1.2 Audio codec

In cases where the MCVideo service supports combined or separate handling of video and audio streams [3], MCVideo clients may support the same codecs as for MCPTT in accordance with TS 26.179 [6].

4.1.3 User plane protocol

MCVideo clients shall support both RTP [7], [9] and SRTP [8], [10] media transport.

Annex A (informative): Change history

Change history							
Date	**Meeting**	**TDoc**	**CR**	**Rev**	**Cat**	**Subject/Comment**	**New version**
2017-03	75					Version 14.0.0	14.0.0
2018-06	80					Version 15.0.0	15.0.0
2020-07	-	-	-	-	-	Update to Rel-16 version (MCC)	**16.0.0**
2022-04	-	-	-	-	-	Update to Rel-17 version (MCC)	**17.0.0**
2024-05	-	-	-	-	-	Update to Rel-18 version (MCC)	**18.0.0**
2025-10	-	-	-	-	-	Update to Rel-19 version (MCC)	**19.0.0**

History

Document history		
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