**3GPP TSG- Meeting # *r01***

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** | **0008** | **rev** | **2** | **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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | Upgrade of audio profiles for 5G-Advanced | | | | | | | | | |
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| ***Source to WG:*** | Dolby Laboratories Inc., Fraunhofer IIS, VoiceAge Corporation, Samsung Electronics Co., Ltd, Philips International B.V., ETRI, Qualcomm incorporated, Panasonic Holdings Corporation, Nokia Corporation, Orange, Tencent, […] | | | | | | | | | |
| ***Source to TSG:*** | S4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***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)* | |
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| ***Reason for change:*** | | To guarantee interoperability 3GPP specifications should conditionally mandate the support of at least one Audio codec operation points when the streaming default and Television (TV) profiles are supported: in this case eAAC+ is mandated. The xHE-AAC stereo operation point is added as recommended for these profiles in Rel-18. | | | | | | | | |
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| ***Summary of change:*** | | Add conditional mandatory support for eAAC+ for streaming default and Television (TV) profiles.  Add the newly defined *xHE-AAC stereo* Audio operation point as recommended for streaming default and Television (TV) profiles. | | | | | | | | |
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| ***Consequences if not approved:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.3; 5.2.7.4; 5.2.8.3; 5.3.3; 5.3.5.4; 5.4.2; 5.4.4.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 26.117 CR 1 | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev1: re-submission as basis for discussion to fullfill objective 2 of the Work Item Description: *2) to review and, when appropriate, possibly modify requirements (i.e. may, should or shall support) in TS 26.511 applicable to 5GMS Clients for the support of Audio operation Points.*  Corrected some cross-references  Rev2: revised following compromise proposal discussed at SA4#122 | | | | | | | | |

**====== 1st CHANGE ======**

### 5.2.3 Audio decoding

If the 5GMSd Client supports the reception of audio:

- **xHE-AAC stereo** decoding capability should be supported as defined in 3GPP TS 26.117 [4] clause 5.2.

NOTE: xHE-AAC® is a registered trademark of Fraunhofer in Germany and other countries and is used with Fraunhofer’s permission.

- **eAAC+** decoding capability shall be supported as defined in 3GPP TS 26.117 [4] clause 5.2.

- **AMR-WB+** decoding capability may be supported as defined in 3GPP TS 26.117 [4] clause 5.2.

**====== 2nd CHANGE ======**

#### 5.2.7.4 Audio media profiles

If the 5GMSd Client supports the reception of audio, then the following should be supported:

- the **xHE-AAC stereo** playback requirements as defined in 3GPP TS 26.117 [4] clause 7.8.4.

If the 5GMSd Client supports the reception of audio, then the following shall be supported:

- the **eAAC+ stereo** playback requirements as defined in 3GPP TS 26.117 [4] clause 7.5.2.4.

If the 5GMSd Client supports the reception of audio, then the following may be supported:

- the **AMR-WB+** playback requirements as defined in 3GPP TS 26.117 [4] clause 7.6.2.4.

**====== 3rd CHANGE ======**

#### 5.2.8.3 Audio media profiles

For AMR:

- the <profiles> parameter is defined in TS 26.117, clause 7.2.2.4 as audio/mp4 profiles='camr'

- the <codecss> parameter is defined in TS 26.117, clause 7.2.2.4 as 'samr'

For AMR-WB:

- the <profiles> parameter is defined in TS 26.117, clause 7.3.2.4 as audio/mp4 profiles='camw'

- the <codecs> parameter is defined in TS 26.117, clause 7.3.2.4 as 'samw'

For EVS:

- the <profiles> parameter is defined in TS 26.117, clause 7.4.2.4 as audio/mp4 profiles='cevs'

- the <codecs> parameter is defined in TS 26.117, clause 7.4.2.4 as 'sevs'

For xHE-AAC stereo:

- the <profiles> parameter is defined in TS 26.117, clause 7.8 as audio/mp4 profiles='casu'

- the <codecs> parameter is defined in TS 26.117, clause 7.8 as 'mp4a'

For eAAC+ stereo:

- the <profiles> parameter is defined in TS 26.117, clause 7.6.2.4 as audio/mp4 profiles='ceac'

- the <codecs> parameter is defined in TS 26.117, clause 7.6.2.4 as 'mp4a'

For AMR-WB+:

- the <profiles> parameter is defined in TS:26.117, clause 7.7.2.4 as audio/mp4 profiles='camp'

- the <codecs> parameter is defined in TS:26.117, clause 7.7.2.4 as 'sawp'

**====== 4th CHANGE ======**

### 5.3.3 Audio encoding

If the 5GMS UE supports the transmission of audio:

- the sender requirements for the **eAAC+ stereo** Operation Point as defined in 3GPP TS 26.117 [4] clause 6.3.2.3 shall be supported.

- the sender requirements for the **xHE-AAC stereo** Operation Point as defined in 3GPP TS 26.117 [4] clause 6.3.4.3 should be supported.

**====== 5th CHANGE ======**

#### 5.3.5.4 Audio media profile

If the 5GMSu Client supports the transmission of audio, then the following shall be supported:

- the eAAC+ stereo content generation requirements as defined in 3GPP TS 26.117 [4] clause 7.6.2.5.

If the 5GMSu Client supports the transmission of audio, then the following should be supported:

- the xHE-AAC stereo content generation requirements as defined in 3GPP TS 26.117 [4] clause 7.8.5.

**====== 6th CHANGE ======**

### 5.4.2 Audio decoding

If the 5GMSd Client supports the Television (TV) profile, it shall support *eAAC+ stereo* Operation point as defined in 3GPP TS 26. 117 [4], clause 6.3.3.

If the 5GMSd Client supports the Television (TV) profile, it should support *xHE-AAC stereo* Operation point as defined in 3GPP TS 26. 117 [4], clause 6.3.4.

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**====== 6th CHANGE ======**

#### 5.4.4.3 Audio media profiles

If the 5GMSd Client supports the Television (TV) profile, then the following shall be supported:

- the **eAAC+ stereo** playback requirements as defined in 3GPP TS 26.117 [4] clause 7.5.2.4.

If the 5GMSd Client supports the Television (TV) profile, then the following should be supported:

- the **xHE-AAC stereo** playback requirements as defined in 3GPP TS 26.117 [4] clause 7.8.4.

**====== 7th CHANGE ====== No changes: to be removed from the revised CR**

#### 5.5.2.1 Operation Points

If the 5GMS UE supports 3D/VR audio, it should include a receiver that complies with:

- the *3GPP MPEG-H Audio* Operation Point Receiver requirements as specified in TS 26.118 [13], clause 6.1.4.

**====== 8th CHANGE ====== No changes: to be removed from the revised CR**

#### 5.6.2.1 Operation Points

If the 5GMS UE supports 3D/VR audio, it should include an encoder that can encode a bitstream that can be decoded by a receiver that complies with:

- the 3GPP MPEG-H Audio Operation Point Receiver requirements as specified in TS 26.118 [13], clause 6.1.4.

**====== END OF CHANGES ======**