**3GPP TSG-SA WG4 Meeting #129-e *S4-***

**Online, 19th August 2024 - 23rd August 2024**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **26.804** | **CR** | **0020** | **rev** | **<Rev#>** | **Current version:** | **18.1.0** |  |
|  |
| *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 |  |

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| ***Title:***  | [FS\_AMD] WT13: Initial section x.2 Collaboration Scenario |
|  |  |
| ***Source to WG:*** | Xiaomi |
| ***Source to TSG:*** | S4 |
|  |  |
| ***Work item code:*** | FS\_AMD |  | ***Date:*** | 14-05-2024 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-19 |
|  | *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 canbe 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:*** | FS\_AMD includes a new topic about opportunities with QUIC for segmented streaming (WT 13).  |
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| ***Summary of change:*** | This contribution provides an initial section x.2 on Collaboration Scenario. |
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| ***Consequences if not approved:*** | No progress on WT13 of FS\_AMD.  |
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| ***Clauses affected:*** | New clause |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  |  |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  |  |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  |  |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

Change #1

### 5.x.2 Collaboration scenarios

#### 5.x.2.1 General

A 5GMS Application Provider runs an adaptive media streaming service between a 5GMS AS and a 5GMS Client running on a UE using 5G Media Streaming protocols conveyed at reference points M2 and M4. However, only M4d is relevant for this key topic since it focuses on the media delivery to the UE and not on the ingest of the media itself. Also, since M5 is not meant to transport media, the M5 interface is also excluded from this key topic.

For the purpose of describing the following scenarios, it is assumed only that the 5GMS Client supports the QUIC protocol. Whether higher level protocols based on QUIC (for instance HTTP/3 or WebTransport) are supported by the 5GMS Client is on purpose left out and the analysis should be applicable to any of them.

#### 5.x.2.2 QUIC-agnostic 5GMS Client

In this scenario, the Media Stream Handler of the 5GMS Client operates a QUIC session over reference point M4 but the 5GMS Client has no specific feature regarding QUIC. This has the advantage that 5GMS Client is generic and implements the same logic whether or not QUIC is used for the delivery of the media.

#### 5.x.2.3 QUIC-aware 5GMS Client

In this scenario, the Media Stream Handler of the 5GMS Client operates a QUIC session over reference point M4 and the 5GMS Client is able to detect whether QUIC is used and, in case it is used, the 5GMS Client can apply different logic. The API exposed by the Media Stream Handler to the 5GMS-Aware Application at references point M7 and to the Media Session Handler at reference point M11 to control the use of these QUIC protocol features is limited.

With some limited control over the QUIC streams, such a 5GMS Client would be able to:

* Set relative priorities between the different QUIC streams, especially if HTTP/3 is used by the Media Stream Handler as the application protocol on top of QUIC, and assuming the QUIC client API offers such functionality. Relative stream priorities can be useful to differentiate audio and video, base layer and enhancement layer, etc.
* Receive updates sent proactively by the 5GMS AS, especially if the HTTP/3 server push feature is used. For example, a 5GMSd AS could push MPD updates to a Media Player using this mechanism.

Editor’s note: More possible special features to be added.

#### 5.x.2.4 QUIC-optimised 5GMS Client

In this scenario, the Media Stream Handler of the 5GMS Client operates a QUIC session over reference point M4 and the 5GMS Client is able to control the delivery of the media within the QUIC session. The QUIC-optimised 5GMS Client provides the finest control over the delivery of media within the QUIC session.

With fine control over the QUIC streams, such a 5GMS Client would be able to:

* Set relative priorities between the different QUIC streams, especially if HTTP/3 is used by the Media Stream Handler as the application protocol on top of QUIC. Relative stream priorities can be useful to differentiate audio and video, base layer and enhancement layer, etc.
* Receive updates sent proactively by the 5GMS AS, especially if the HTTP/3 server push feature is used. For example, a 5GMSd AS could push MPD updates to a Media Player using this mechanism.
* Use one QUIC stream for all the media segments of a given component (e.g. per CMAF Track).

Editor’s note: More possible special features to be added.

END OF CHANGES