**3GPP TSG- Meeting #**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
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| *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:*** |  | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** |  | | | | | | | | | |
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| ***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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Conclusions are missing | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Adds skeleton for conclusions | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | No instructions for next steps | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TR 26.804 CR (several) | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | This CR may aggregate all CRs from this meeting that are sent to SA plenary | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

## ===== CHANGE =====

# 7 Recommendations

## 7.1 General

5G Media Streaming provides significant opportunities to integrate operator and third-party media streaming services into 5G Systems. The present document provides a set of considered extensions to 5G Media Streaming as defined in TS 26.501 [15], as well as the format and protocol specifications in TS 26.511 [96] and TS 26.512 [16], respectively. Advances in 5G System technologies, external enhancement and developments in other SDOs such as IETF, DASH-IF or MPEG, as well as initial experiences from deployments have led to a set of conclusions in clause 6.

Recommendations for normative work are summarised in the following clauses.

## 7.2 Recommendations for normative work in Release 17 and Release 18

Based on the first and second phases of feasibility studied in clause 5 of the present document, the following next steps are proposed.

1. Initiate stage 2 and stage 3 work on Network Event usage based on the conclusions in clause 6.8. Note that this is already addressed in TS 26.531 [94] and TS 26.532 [95], respectively.

2. Provide relevant extensions to the Stage 2 5G Media Streaming architecture defined in TS 26.501 [15] based on the conclusions in clause 6. Candidates for these extensions are:

a) Content preparation deployment scenarios and associated call flows in Stage 2 according to clause 6.2.

b) Inclusion of collaboration scenarios and associated call flows in Stage 2 for uplink media streaming according to clause 6.5.

c) Inclusion and extensions of procedures and call flows for end-to-end low latency live streaming based on the conclusions in clause 6.11.

d) Extend the baseline 5G Media Streaming architecture to add a 3GPP Service and URL Handler in the UE and the network based on the conclusions in clause 6.13.

e) Inclusion of collaboration scenarios and associated call flows for configuration of 5GMS AS instances at reference point M3, based on the conclusions in clause 6.14.

f) Referencing of generic procedures and call flows for the management of AS instances in the context of the 5GMS architecture at reference point M3, based on the conclusions in clause 6.14.

3. Provide relevant extensions to 5G Media Streaming protocols and formats based on the conclusions in clause 6. Candidates for these extensions are:

a) Stage-3 follow-up work from 5G Media Streaming architecture extensions referred to above based on conclusions in clauses 6.2, 6.5, or 6.11.

b) Extensions to 5GMS protocols to support traffic identification based on the conclusions in clause 6.3.

c) Addition of HTTP/3 to the 5GMS protocols as an optional alternative based on the conclusions in clause 6.4.

d) Addition of necessary parameter extensions to the M1, M5, and M6 reference points to provide access to Background Data Transfer based on the conclusions in clause 6.6.

e) Specification of the usage of OAuth 2.0 (according to the SA3 guidelines) for 5GMS protocols based on the conclusions in clause 6.9.

f) Specifications for the 3GPP Service Handler and 3GPP Service URL including the necessary UE functions to support automatic launch of 5G System services in the context of 5G Media Streaming based on the conclusions in clause 6.13.

g) Specification of a RESTful API for configuration of the 5GMS AS via reference point M3 in TS 26.512 [16] based on the conclusions of clause 6.14.

4. Continue the study of additional extensions to 5G Media Streaming. Potential candidate topics based on this Technical Report are:

a) Content-aware streaming based on the initial considerations in clause 5.7.

b) Study even lower-latency streaming technologies based on the use cases and considerations of the DASH-IF WebRTC streaming report [94].

c) Distribution of encrypted and high-value content based on the considerations in clause 5.10.

d) Network slicing extensions for 5G Media Streaming based on the conclusions in clause 6.12.

e) Investigate and study the application of 3GPP services and URL handling beyond 5G Media Streaming based on the conclusions in 6.13.

5. Liaise with SA2 and other relevant groups on the standardisation of a generic Application Server management service based on the conclusions of clause 6.14.

## 7.3 Recommendations for normative work in Release 19

In a third phase, existing Key Issues have been refined and new Key Issues have been documented. Based on the study of these, the following next steps are proposed.

1. Provide relevant extensions to the Stage 2 5G Media Streaming architecture defined in TS 26.501 [15] based on the updated conclusions in clause 6. Candidates for these extensions are:

Editor’s Note: To be defined

2. Provide relevant extensions to 5G Media Streaming protocols and formats specified in TS 26.512 [16], TS 26.510 [26510] and TS 26.511 [96] based on the updated conclusions in clause 6. Candidates for these extensions are:

Editor’s Note: To be defined

3. Continue the study of additional extensions to 5G Media Streaming. Potential candidate topics based on the present document are:

Editor’s Note: To be defined