**Title: Progress on 5GMS architecture extensions**

**Agenda Item: *TBD* (Other Release 17 topics)**

**Source: BBC**

**Contact:** Richard [dot] Bradbury [at] bbc [dot] co [do] uk

# Context

A number of Release 17 Work Items, including 5MBUSA, 5GMS\_EDGE and EVEX, envisage extensions to the 5G Media Streaming architecture in TS 26.501. This discussion paper is intended to document a proposed clause structure to achieve this so that Change Requests can be coordinated.

The discussion paper also provides a similar map of clauses in TS 26.502 for 5MBUSA stage 2.

# Discussion

## TS 26.501: 5G Media Streaming (5GMS); General description and architecture

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Clause number | Clause title | | | | Target release | Contribution status | Lead contributor(s) | Contribution |
| 4 | Media Streaming General Service Architecture | | | | Rel-16 |  |  |  |
| 4.1 |  | Overall Media Architecture | | | Rel-16 |  |  |  |
| 4.2 |  | 5G Unicast Downlink Media Streaming Architecture | | | Rel-16 |  |  |  |
| 4.3 |  | 5G Uplink Media Streaming Architecture | | | Rel-16 |  |  |  |
| 4.4 |  | Network Slicing for Downlink Media Streaming | | | Rel-16 |  |  |  |
| 4.5 |  | 5G Media Streaming architecture extensions for Edge Computing | | | Rel-17 | Draft CR in development | Imed Bouazizi | S4-211383 -> S4-211583? |
| 4.6 |  | Instantiation of Data Collection and Reporting architecture for 5G Media Streaming | | | Rel-17 or Rel-18 | Not yet started | ? |  |
| 4.7 |  | 5G Media Streaming over eMBMS | | | Rel-17 or Rel-18 | Draft CR in development | Thomas Stockhammer | S4-211347 -> S4-211587? |
| 4.8 |  | 5G Media Streaming over 5MBS | | | Rel-17 or Rel-18 | Draft CR in development | Peng Tan  Thomas Stockhammer | S4-211398n  S4-211008 -> S4-211348 -> S4-211588? |
| 5 | Procedures for Downlink Media Streaming | | | | Rel-16 |  |  |  |
| 6 | Procedures for Uplink Media Streaming | | | | Rel-16 |  |  |  |
| 7 | 5GMS Network Media Processing | | | | Rel-16 |  |  |  |
| ~~7.4~~ | ~~Edge computing~~ | | | |  |  |  |  |
| 8 | Procedures for 5GMS edge processing | | | | Rel-17 | Draft CR in development | Imed Bouazizi | S4-211383 -> S4-211583? |
| 9 | Procedures for Data Collection and Reporting architecture for 5G Media Streaming | | | | Rel-17 or Rel-18 | Not yet started | ? |  |
| 10 | Procedures for 5G Media Streaming over eMBMS | | | | Rel-17 or Rel-18 |  | Thomas Stockhammer |  |
| 11 | Procedures for 5G Media Streaming over 5MBS | | | | Rel-17 or Rel-18 | Discussion -> Draft CR | Thomas Stockhammer | S4-211008 -> S4-211348 -> S4-211588? |
| A | Usage Guidelines for collaboration scenarios | | | | Rel-16 |  |  |  |
| A.0 |  | | General | | Rel-16 |  |  |  |
| A.1 |  | | Collaboration 1 | | Rel-16 |  |  |  |
| A.2 |  | | Collaboration 2 | | Rel-16 |  |  |  |
| A.3 |  | | Collaboration 3 | | Rel-16 |  |  |  |
| A.4 |  | | Collaboration 4 | | Rel-16 |  |  |  |
| A.5 |  | | Collaboration 5 | | Rel-16 |  |  |  |
| A.6 |  | | Collaboration 6 | | Rel-16 |  |  |  |
| A.7 |  | | Collaboration 7 | | Rel-16 |  |  |  |
| A.8 |  | | Collaboration 8 | | Rel-16 |  |  |  |
| A.9 |  | | Collaboration 9 | | Rel-16 |  |  |  |
| A.10 | Collaboration 10: 5GMS content via 5G System and eMBMS | | | | Rel-17 or Rel-18 |  | Thomas Stockhammer | S4-211350n |
| B | 5GMS via eMBMS | | | | Rel-17 or Rel-18 |  |  |  |
| B.1 |  | | Deployment scenarios | | Draft CR | Thomas Stockhammer | S4-211347 -> S4-211587? |
| B.2 |  | | Collaboration models | |
| B.2.1 |  | |  | Standalone 5GMS via eMBMS |
| B.2.2 |  | |  | Hybrid 5GMS via eMBMS |
| B.2.3 |  | |  | Broadcast-on-demand |

## TS 26.502: 5G multicast–broadcast services; User Service architecture

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Clause number | Clause title | | | | | Target release | Contribution status | Lead contributor(s) | Contribution |
| 4 | Reference architecture for 5G Multicast–Broadcast User Services ***(stage 2)*** | | | | | Rel-17 |  |  |  |
| 4.1 |  | General | | | | Rel-17 |  |  |  |
| 4.2 |  | System description | | | | Rel-17 |  |  |  |
| 4.2.1 |  |  | | | Network architecture | Rel-17 | Draft CR | Peng Tan | S4-211397 -> S4-211589 |
| 4.2.2 |  |  | | | User Service network architecture |
| 4.2.3 |  |  | | | Distribution Methods |
| 4.2.4 |  |  | | | Service announcement and discovery | Rel-17 | Draft CR | Thorsten Lohmar | S4-211518? |
| 4.3 |  | Functional entities | | | | Rel-17 | Draft CR | Peng Tan  Thorsten Lohmar | S4-211397m -> Thorsten’s contribution?  S4-211518? |
| 4.4 |  | Reference points and interfaces | | | | Rel-17 | Draft CR | Thomas Stockhammer | S4-211345? |
| 4.4.1 |  |  | | | Overview | Rel-17 | Draft CR | Peng Tan | S4-211397 -> S4-211589 |
| 4.4.2 |  |  | | | Northbound interfaces *(with subclauses for Nmb8 and Nmb10)* | Rel-17 | Draft CR | Thomas Stockhammer | S4-211345? |
| 4.4.3 |  |  | | | Internal network interfaces *(with subclauses for Nmb1, Nmb2, Nmb5, Nmb9 and Nmb12)* |
| 4.4.4 |  |  | | | User Service interfaces *(with subclauses for MBS-4, MBS-5 and MBS-8)* |
| 4.4.5 |  |  | | | Client interfaces *(with subclauses for MBS-6 and MBS-7)* |
| 4.x |  | Domain model | | | | Rel-17 | Draft CR | Thomas Stockhammer | S4-211345?  *(Needs to introduce MBS User Services session concept.)* |
| 4.5 |  | Life-cycle model | | | | Rel-17 | Not started | ? | *Llife-cycle of an MBS User Service and an MBS User Services session.)* |
| 4.6 |  | QoS model | | | | Rel-17 | Not started | ? |  |
| 4.7 |  | Security | | | | Rel-17 | Draft CR | Thomas Stockhammer | S4-211345? |
| 5 | Procedures for 5G Multicast–Broadcast User Services ***(stage 2)*** | | | | | Rel-17 |  |  |  |
| 5.1 |  | General | | | | Rel-17 | Complete | Editor | *(From skeleton.)* |
| 5.2 |  | High-level baseline procedures | | | | Rel-17 | Draft CR | Thomas Stockhammer | S4-211345? |
| 5.x |  | Network Function procedures | | | | Rel-17 |  |  | *(proposed change to skeleton)* |
| 5.x.1 |  |  | | General | | Rel-17 | Draft CR | Thorsten Lohmar | S4-211519n -> *ad hoc* |
| 5.x.2 |  |  | | Procedures for User Service provisioning | |
| 5.x.3 |  |  | | Data ingest procedure for Object Distribution Method | |
| 5.x.4 |  |  | | Data ingest procedure for [Packet|PDU] Distribution Method | |
|  |  |  | | | |  |  |  | *(further changes to skeleton likely)* |
| 5.3 |  | Procedures for User Service discovery/announcement | | | | Rel-17 | Not started | ? |  |
| 5.4 |  | Procedures for User Service initiation/termination | | | | Rel-17 | Not started | ? |  |
| 5.5 |  | Procedures for User Service data transfer | | | | Rel-17 | Not started | ? |  |
| 5.6 |  | Associated delivery procedures | | | | Rel-17 | Not started | ? |  |
| 6 | MBS User Services Distribution Methods ***(stage 2 only?)*** | | | | | Rel-17 |  |  |  |
| 6.1 |  | Object Distribution Method | | | | Rel-17 | Draft CR | Qi Pan  Thomas Stockhammer | S4-211449  S4-211346n *(Reuse of MBMS)* |
| 6.2 |  | [Packet/PDU] Distribution Method | | | | Rel-17 | Draft CR | Qi Pan  Thomas Stockhammer | S4-211449  S4-211346n *(Reuse of MBMS)* |
| 7 | Network Function services ***(stage 2½)*** | | | | | Rel-17 |  |  |  |
| 7.1 | General | | | | | Draft CR | Thorsten Lohmar | S4-211520n -> *ad hoc* |
| 7.2 |  | | MBSF Services | | |
| 7.2.1 |  |  | | General | |
| 7.2.2 |  |  | | *Nmbsf\_UserService* operations | |
| 7.2.3 |  |  | | *Nmbsf\_UserServiceSession* operations | |
| 7.3 |  | MBSTF Services | | | |
| 7.3.1 |  |  | | General | |
| 7.3.2 |  |  | | *Nmbstf\_DistributionMethodInstance* operations | |
| 8 |  |  | | | |  |  |  | *(More to be added probably.)* |
| A | Deployment and Collaboration Models | | | | | Rel-17 |  |  |  |
| A.1 |  | Group Communication | | | | Rel-17 | Not started | ? |  |
| A.2 |  | 5G Media Streaming | | | | Rel-17 | Blocked | Editor | *(Just a reference to TS 26.501.)* |
| A.3 |  | AF/AS in Trusted DN | | | | Rel-17 | Draft CR | Thorsten Lohmar | S4-211516? |
| A.4 |  | AF/AS in External DN | | | |
| A.5 |  | MBSF/MBSTF-like functions in External DN | | | |
| B | Nmb8 User Plane ingest examples | | | | | Rel-17 | Draft CR | Thorsten Lohmar | S4-211517n |
| B.1 |  | General | | | |
| B.2 |  | Object Distribution Method | | | |
| B.3 |  | [Packet|PDU] Distribution Method | | | |
|  |  |  | | | |  |  |  |  |

# Proposal

It is proposed that the above clause structure be adopted as the agreed way forward and that draft Change Requests developed in the MBS subworking group be aligned to this structure.