**3GPP TSG-WG SA4 Meeting #116E *S4-211446***

**E-meeting, November 10 – 19, 2021**

**Source: Huawei Technologies Co.,Ltd.**

**Title: Discussion on stage 3 work split for MBS**

**Document for: Discussion and approval**

**Agenda Item: XX**

**Work Item / Release: 5MBUSA/ [Rel-17]**

*Abstract: This discussion paper aims at illustrating a proper way for splitting the stage 3 work for MBS between SA4 and CT3.*

# 1. Introduction

As per the incoming LS (S4-211XXX/C3-214581) from CT3, a work split for some items of the stage 3 work on 5MBS work item is needed. Given the historic stage 3 work split between SA4 and CT3, a proper splitting way is discussed in this paper. Besides, the stage 2 and stage 3 work timeline related issues are also discussed and analysed.

# 2. Discussion

In the received LS, CT3 asks for the stage 3 work split for Nmb2 and Nmb8 interfaces as shown below.

* Nmb2 interface between the MBSF and the MBSTF.
* Nmb8 interface between an AF/AS and an MBSTF.

**Observation 1: It is to be noted that the Nmb10 interface (MBSF – AF/AS interface) and the related Nmbsf service based interface should also be part of this work split discussion.**

Compared to 4G MBMS, the BM-SC functionalities are separated into the MBSF and MBSTF functions in 5G MBS architecture as defined in TS 23.247. Then:

* The AF and MBSF interact at reference point Nmb10 to support MBS session operations and transport in the control plane. The legacy interfaces xMB-C and MB2-C are supported at this reference point.
* The AS and MBSTF interact at reference point Nmb8 to support MBS data handling (e.g. encoding) in the user plane. The legacy interfaces xMB-U and MB2-U are supported at this reference point.

As agreed in the TR conclusion, the northbound interfaces, Nmb10 for provisioning the MBSF and Nmb8 for ingesting content into the MBSTF will be respectively based on the xMB-C and xMB-U interfaces as defined in TS 26.348. Also, the existing MB2 interface will be supported in Release 17 “as is”.

As we already know, in 4G MBMS, the stage 3 work of MB2 interface is defined by CT3 in TS 29.468. Besides, the REST-based protocol for the xMB reference point between the Content Provider and the BM-SC is defined by CT3 in TS 29.116.

**Proposal 1: It is hence proposed that the xMB and MB2 related stage 2 work is handled by SA4 and the associated stage 3 work is handled by CT3, including the Nmb5, Nmb10 and Nmb8 interfaces.**

Regarding the new interface between the MBSF and MBSTF functions, i.e. Nmb2, there was no similar work in 4G MBMS. While SA4 needs to continue stage 2 work, maybe it is worth discussing which working group may be more suitable for the stage 3 work on Nmb2 interface definition. However, the MBSF and MBSTF could be roughly seemed as the control plane and user plane functionalities of 4G BM-SC entity. Considering the experience of defining the CP-UP function exchanges, CT4 can be a good place for the stage 3 work.

**Proposal 2: It is hence proposed that the Nmb2 interface related stage 2 work is handled by SA4 and the associated stage 3 work is handled by CT4 or CT3.**

In addition, the author also noticed the unmatched timelines for the stage 2 work item in SA4 and the stage 3 work item in CT3 and CT4. For 5MBUSA in SA4, it is planned to be completed for both stage 2 work in SA#96 in June 2022. However, for the 5MBS in CT groups, this stage 3 work item is planned to be completed in CT#95 in March 2022.

**Observation 2: There is a mismatch between the Stage 2 and Stage 3 timelines that needs to be discussed and tried to be solved.**

Generally, the stage 3 work needs to follow the stage 2 work, which means current timeline for these two work items needs to be adjusted accordingly. Hence, it is proposed to coordinate the stage 2 and stage 3 progress, i.e. speed up the stage 2 work at SA4 and complete it latest by March 2022, because the SA, CT and RAN plenary approved stage 3 completion time is by March 2022 for Rel-17, while code freeze (ASN.1 and openAPI) is set to June 2022.

**Proposal 3: In order to solve the above described issues, it is proposed to speed up the stage 2 definition of the Nmb2, Nmb8, Nmb5 and Nmb10 interfaces and consider stage 3 work delegation to CT WGs as per proposals 1 and 2 above.**

# 3. Conclusion and proposal(s)

It is proposed to agree on the above proposals and hence:

* ask CT groups to take charge of the stage 3 work for Nmb8, Nmb5, Nmb10 and Nmb2 interfaces; and
* speed up the stage 2 definition of the Nmb2, Nmb8, Nmb5 and Nmb10 interfaces and complete stage 2 work by March 2022 to align the timeline with CT WGs.