# 3GPP SA2 5MBS Conference call before 146E

## Date:

2021/07/01

## Convener:

LiMeng (rapporteur – Huawei)

## List of participants:

Fenqin (Huawei), Judy (Ericsson), Dario (Qualcomm), Miguel (Qualcomm), Thomas (Nokia), Xiaoyan (CATT), Jeffrey (Juniper), Zhendong (ZTE), James (ATT), Zhenhua (vivo), Richard (BBC), LaeYoung (LGE), Fei (OPPO) and other MBS colleagues…

## Minutes

### 0. Discussing the outstanding issues

##### 001: Combine MBS session parameter provisioning

*Address the duplicated steps between the clauses with PCC/without PCC, and address the ENs for broadcast initial configuration.*

**Discussion**

Judy (Ericsson): PCC part: using flow would be helpful. Illustration is needed.

Thomas (Nokia) if keep separate then we need to add call-flow.

Zhenhua (vivo): Judy’s comments are reasonable, but be careful the complexity.

Fenqin (Huawei): now we just discuss how to document. First should we do technical discussion?

Judy: OK to discuss the technical parts.

Fenqin: first check if two clauses are with big difference technically. If yes then use different clause. Otherwise make them in one clause.

Thomas: yes with difference. In addition for broadcast ENs, the other way around with using the delayed session start would be good.

Judy: initial part is different. Not easy to only capture the delta part. Information provisioning is similar as configuration. “MBS session creation” aligns the services provided by MB-SMF.

Thomas: concern MBS session establishment/start 🡪 because we use it for state model.

Xiaoyan (CATT): configuration is clear. Information provisioning may affect the state model.

Fenqin: same feeling like Xiaoyan.

Thomas: creation same as establishment.

Thomas: would like to draft for broadcast state model.

Judy: also doubt that if we need the state model for broadcast.

**Summary and proposed way forward**

1. Further consider the title (seems some companies prefer to use the current title to align session status);
2. Using a single procedure with addressing with/without PCC case, or having separate clauses for address difference but with call-flows are FFS.
3. Some companies consider that it is not necessary to address the status machine for broadcast.
4. LiMeng will trigger the further discussion offline.

##### 101: AF triggered multicast session join/leave

*Zhenhua made the presentation. Clarified that the AF is the trusted AF, and provides the answers to 1) understanding the IP address of the UE; 2) UE consent; 3) same PDU session with interacting with AF and associated with MBS.*

**Discussion**

Jeffrey (Juniper): want to add the point about “UE consent” 🡪 UE consent is normally not needed for the AS trusted case.

Thomas: SMS-based UE consent approach is problematic: code is not clear. Charging issue needs to be clarified.

Zhenhua: currently use SMS code to achieve the consent issue. Multicast/broadcast will charge the AS.

Jeffrey: consider the normal behavior, i.e., trust AF, it will not abuse the UE’s consent.

Thomas: if UE hasn’t been notified, not clear how to configure UE’s stack. Should note the UE at first. Would have expect the interaction with UE.

Jeffrey: Based on application level interaction, the UE would be prepared. The 5GS need to do pre-authorization any more.

Thomas: AF just provide UE list to network, then trigger the UE performs the normal join. Resolve the same scenario (why we need to design a new feature?).

Jeffrey: AF provide pre-authorization information here. Authorization handled by AF on-demand. Align the existing behavior of the content provider.

Judy: AF can get UE IP address, but cannot IP address known by 5GC. If IPv4 private address allocated by 5GC, using e.g., DHCP. In IMS application, special handling by UE. Therefore does this solution really works? Secondly, UE has some app-layer interaction, how could app-layer tell the modem to prepare the resources/configuration, i.e., how to address the stratum level to enable UE receive MBS data. Thirdly, UE may be able to talk app-layer (e.g., WiFi), may not be receive MBS data, e.g., not camping 5GS? (UP).

Jeffrey: for the NAT, we can say that we don’t need to consider this by limiting the scope. RAN trigger the modem.

Zhenhua: trusted AF, it will mostly be used by famous content provider, UE🡪CP (MSISDN), IMS…, when UE starts the app, the port is determined, and later RAN configures modem part. No need for the application layer to interact with modem.

Richard (BBC): high level question, the use case? Similar as MooD + provide UE list. Low level question: UE IP address, but for the socket, how to establish it?

Jeffrey: by doing this way, the AS behavior would be the same (or little change) as current design.

Richard: SA4 angle be considered client, holistic view is needed…NW might be the best position to make the decision. How could the application find that the socket is established.

Thomas: use case is not clear. All the interaction with RAN/modem requires UE understands the TMGI. UE interaction using wrong PDU session.

Judy: Richard raise some good questions, implication on SA4, MSISDN, not sure how it works.

**Summary and proposed way forward**

1. Proponents consider that with the AF-triggered UE join, it would be more flexible for authorizing the UE (i.e., not necessarily need AF provide UE list to 5GC), and the internal behavior/logic of the AFs would not change much towards current design;
2. Some other companies would like to seek the clarification on the following aspects:
	1. How to configure the UE’s modem via application-level message;
	2. The benefit for designing a new procedure other than UE-based join;
	3. Clarify that how could the AF find the PDU session info, if UE interact with AF by using non-3GPP defined mechanism (e.g., WiFi);
	4. Consider SA4 input/design/realization;
	5. NW (5GC) might be the best position to make the decision other than AF.
	6. Clarify how the procedure works when using MSISDN.
3. Zhenhua and Jeffrey will trigger the further discussion offline.

##### 102/103: 5MBS interworking

*Dario presents IWK related to papers with respect to service layer IWK and transport layer IWK, respectively. The two papers suggest to only keep service layer IWK in rel-17, since transport layer IWK may introduce impact to EPS and GCS/AS.*

**Discussion**

Fenqin: We don’t agree the analyses. As the email discussion in the last meeting, TFT is nothing special for MBS; for MME selecting S-GW/P-GW, now our proposal doesn’t have that problem; TMGI is not for eMBMS, for GCS/AS (23468) only for EPS network, therefore we don’t provide extra demand on EPS.

Fenqin: When moves from 5GS to EPS, may not meaning UE will instantly go within eMBMS coverage.

Dario (Qualcomm): Fundamentally different assumption between our solutions. KI definition doesn’t allow such EPS impact.

Fenqin: for deployment it would be very hard for having eMBMS+5GC covers whole area.

Dario: resolve it by network configuration.

Dario: extend individual delivery to IWK, impact to GCS/AS then. Extend EPS behavior will have impact on GCS/AS level. QC’s proposal doesn’t cause impact. For HW’s paper, for eMBMS/5GS, the injection point would be different. GCS/AS needs to differentiate that.

Thomas: agree with Dario there is extra state for GCS/AS. AS should know UE is still receiving unicast. On the other hand, don’t fully agree GCS/AS is fully transparent about 4G/5G. if we don’t agree anything in the next meeting, potential risk we cannot support PS case. SoH to make progress.

Dario: I haven’t seen critical update on server.

Zhendong: this paper assumes all eNB in 4G support eMBMS.

Dario: near NG-RAN. Ask operators’ views would be better.

James: Coverage for 5G would not be an issue. Impact to GCS/AS (existing system) should be minimized. IWK included is needed for Rel-17.

Thomas: concern 5GS coverage + 4G unicast. AS needs to have some knowledge of 4G capability anyway.

Fenqin: to James, eMBMS is not something flexible in 5G. 4G eMBMS needs good schedule/configuration. MBMS coverage in 4G is very limited, we cannot assume eMBMS whole PLMN may waste radio resources. Therefore NG-RAN near eMBMS might not be always possible.

James: deployment option, most-likely scenario. Standard should not be limited by deployment option.

Zhendong: scenario: if individual delivery is used then we cannot avoid the case that normal unicast IWK triggered.

**Summary and proposed way forward**

It seems companies have distinct views for transport layer based approach and service layer based approach:

1. For transport layer based approach: some companies concern that it will impact EPS and GCS/AS;
2. For service layer based approach: some companies concern that it requires too much on deployment that the eNB near NG-RAN nodes are all eMBMS supported (i.e., belong to eMBMS service area). And it is pointed by some companies that IWK caused by individual delivery scenario will anyway EPS + GCS/AS impact.
3. Other companies consider that GCS/AS will any way aware something more compared with eMBMS.

##### AoB

*LiMeng lists the residual outstanding open issues for MBS.*

Fenqin: RAN3 and SA2 in the same week, how to proceed.

Zhendong: plenary meeting, for the open issue with RAN dependency that would not treat as exception part.

Judy: share similar understanding as Zhendong.

Next MBS offline CC date:

* It is tentative to schedule August 5th as the next MBS CC date.
* For the potential controversial papers, provide draft in advance to the email reflector.