[97e-21-R18-MobilityEnh] - Version 0.0.5
RAN

3GPP TSG RAN Meeting#97-e RP-222640 (was RP-222581)

Electronic Meeting, September 12nd – 16th 2022

Source: MediaTek Inc. (Moderator)

Title: Moderator's summary for discussion [97e-21-R18-MobilityEnh]

Agenda Item: 9.3.2.1

Document for: Report

1 Introduction

This email discussion is scheduled into Initial, Intermediate, Final (and if required Extended) rounds, as per the timeplan provided by the RAN Chairman, in ***UTC time*** as follows.

Table 1: RAN Email discussion timeplan

Initial Round*(Quiet period)*	**Mon 7am - Tue 12noon** (*12noon - 3pm*)	Moderator WF @3.30pm
IntermediateRound	**Tue 3.30pm - Wed 11am**	Moderator WF @11.59am
Final Round (*Quiet Period*)	**Wed 3.30pm - Thu 12noon** *(12noon - 3pm)*	Moderator WF @3.30pm
Extended Round	**Thu 3.30pm - Fri 11am**	Moderator WF @11.59am

The aim of this email discussion is to agree on a revised WID for Mobility Enhancements, at least to address objective 3 quoted below:

- 3) To specify CHO including target MCG and target SCG [RAN3, RAN2].
  - *Note 5: This is already being targeted for Rel-17, so this objective will be reviewed at RAN#97-e.*

If necessary interim drafts will be stored in the inbox/Drafts/[97e-21-R18-MobilityEnh] folder.

Documents subject to this email discussion are listed hereafter:

TDoc	Title	Source
[1] RP-222014	Discussion on Rel-18 WID Further NR mobility enhancements	Xiaomi
[2] RP-222332	Revised WI: Mobility Enhancements	Rapporteur (MediaTek Inc.)

[3] RP-222333	Discussion on Rel-18 Further NR Mobility Enhancements WID Revision	MediaTek Inc., Apple, Huav
[4] RP-222392	Discussion on objective #3 in the R18 Mobility enhancement WID	CATT

All above TDocs identify the following:

- RAN2 no longer needs to be involved in objective 3, given Rel-17 specs support CHO incl. target MCG and target SCG
- RAN3 continues to work on objective 3 to address data forwarding [optimizations/enhancements]
  - NOTE: It is worth noting that as indicated in [1][3] RAN3 agreement refers to ”optimizations” ([4] uses ”enhancements”)

In view of the above, the Moderator proposes to adopt P1 from [3] shown above i.e.

Moderator Proposal 1: to adopt the modification of Objective 3 as follows:

- 3) To specify data forwarding optimizations for CHO including target MCG and target SCG [RAN3~~,~~ ~~RAN2~~].
  - ~~Note 5: This is already being targeted for Rel-17, so this objective will be reviewed at RAN#97-e.~~

The Moderator further proposes to adopt P3 from [3] regarding the addition of TS37.483 to the list of affected specs i.e.

Moderator Proposal 2: to adopt the addition of TS37.483 to the list of impacted existing TS/TR in the WID, addressing potential E1-AP changes to support mobility enhancements.

The Initial Round of discussion will therefore invite comments on:

- Moderator Proposal 1
- Moderator Proposal 2
- Proposal P2 from [3] i.e. restricting Objective 3 to NR-DC.

2 Initial Round

2.1 Comments to Moderator Proposal 1

Q1: please indicate below if you have any comments to Moderator Proposal 1 (see above).

Feedback Form 1: Comments to Moderator Proposal 1

1 – MediaTek Inc.

We support Moderator Proposal 1

2 – Ericsson LM

We think there may be one other aspect which may need to be discussed in the WGs other than data forwarding, namely: according to today's spec, when the source SN intends to update the currently used source SN configuration, it forwards this intended config to the MN. The MN (blindly) forwards it to the target SN (i.e. the SN within an CPC config that the UE already has) the target SN will respond to the MN potentially updating the CPC config (or omitting if no change is needed?). In cases where the source SN updates something which does not impact the CPC config in the UE (e.g. source SN updates the SN-part measurement config of the UE) this means that there is one unnecessary MN-to-target SN RTT added to the delay. So with CPC, there will always be one MN-to-target SN RTT added to **any** source SN modification, some of which are unnecessary. We think the WGs should be allowed to address this and would like to phrase the objective in a less narrow way.

One approach would be this:

3) To specify optimizations for CHO including target MCG and target SCG, e.g. for data forwarding [RAN3]

A more descriptive approach would be something like:

3) To specify optimizations for CHO including target MCG and target SCG [RAN3]**, including**:

- data forwarding

- avoiding an unnecessary MN-to-target-SN-RTT for cases when the source SN config changes that does not impact the target SN config.

3 – vivo Mobile Communication Co.

We support Moderator Proposal 1.

1. We think the current RAN2 specification can support CHO including target MCG and target SCG in Rel-17. Thus, the scope should be restricted in RAN3.

2. Considering we had RAN3 agreement "In Rel.18, RAN3 will continue the work on the CHO with SCG at the target. The scope will be limited to the data forwarding optimizations.", we think we shoud limit the scope to data forwarding optimization.

4 – Samsung R&D Institute UK We support Moderator Proposal 1
5 – NTT DOCOMO INC. We support Moderator Proposal1.
6 – Intel Technology India Pvt Ltd We also support the moderator's Proposal 1.
7 – ZTE Corporation We support Moderator Proposal 1
8 – Apple Hungary Kft. We support P1.
9 – Nokia We agree with Moderator Proposal 1.
10 – Qualcomm Incorporated we agree with Moderator Proposal 1
11 – InterDigital Finland Oy We agree with Proposal 1
12 – Futurewei We support Moderator Proposal 1
13 – HuaWei Technologies Co. We support Proposal 1
14 – Xiaomi Communications We support Moderator Proposal 1
15 – Spreadtrum Communications We support Proposal 1.
16 – CATT Fine with updated proposal 1 by Moderator.
17 – Transsion Holdings We support Moderator Proposal 1

18 – Guangdong OPPO Mobile Telecom. We support Moderator Proposal 1.
19 – NEC Corporation we agree modetator proposal 1.
20 – SHARP Corporation We support Moderator Proposal 1.
21 – LG Electronics France Support the moderator proposal1
22 – China Unicom We support Moderator Proposal 1.
23 – Lenovo (Beijing) Ltd Agree with Moderator P1
24 – VODAFONE Group Plc We support Moderator Proposal 1.

2.2 Comments to Moderator Proposal 2

Q1: please indicate below if you have any comments to Moderator Proposal 2 (see above).

Feedback Form 2: Comments to Moderator Proposal 2

1 – MediaTek Inc. We support Moderator Proposal 2
2 – Ericsson LM Agree
3 – vivo Mobile Communication Co. Agree

4 – Samsung R&D Institute UK Agree
5 – NTT DOCOMO INC. Agree
6 – Intel Technology India Pvt Ltd Agree to add 37.483.
7 – ZTE Corporation Agree
8 – Apple Hungary Kft. We support P2.
9 – Nokia We agree with Moderator Proposal 2.
10 – Qualcomm Incorporated Agree
11 – InterDigital Finland Oy Agree
12 – Futurewei We support Moderator Proposal 2
13 – HuaWei Technologies Co. We support
14 – Xiaomi Communications Agree
15 – CATT Agree
16 – Spreadtrum Communications Agree

17 – Transsion Holdings Agree
18 – Guangdong OPPO Mobile Telecom. Agree
19 – NEC Corporation agree with moderator proposal 2.
20 – SHARP Corporation Agree
21 – LG Electronics France Support the moderator proposal
22 – China Unicom Agree.
23 – Lenovo (Beijing) Ltd Agree with moderator proposal 2
24 – VODAFONE Group Plc Agree

2.3 Restricting Obj.3 to NR-DC

Q1: please indicate if you have any comments on restricting Objective 3 to NR-DC (like objectives 2 and 4 in the existing WID).

Feedback Form 3: Comments on restricting Obj.3 to NR-DC

1 – MediaTek Inc. We support Moderator Proposal 3
2 – MediaTek Inc. To clarify our previous comment (as there is no Moderator Proposal 3). We support restricting Obj.3 to NR-DC.
3 – Ericsson LM Agree

4 – vivo Mobile Communication Co. Agree
5 – Samsung R&D Institute UK Agree
6 – NTT DOCOMO INC. Agree
7 – ZTE Corporation Agree
8 – Intel Technology India Pvt Ltd We are also fine to restrict the objective 3 to NR-DC only.
9 – Apple Hungary Kft. We also think restricting to NR-DC is better. We support this.
10 – Nokia Objective 3 can be restricted to NR-DC.
11 – Qualcomm Incorporated Agree
12 – InterDigital Finland Oy agree
13 – Futurewei Agree
14 – HuaWei Technologies Co. We support
15 – Xiaomi Communications Agree
16 – Spreadtrum Communications Agree

17 – Transsion Holdings Agree
18 – Guangdong OPPO Mobile Telecom. Agree
19 – NEC Corporation Objective 3 can be restricted to NR-DC.
20 – SHARP Corporation Agree
21 – LG Electronics France Support the restriction to NR-DC
22 – China Unicom Agree
23 – Lenovo (Beijing) Ltd Agree to restrict Objective 3 to NR-DC
24 – VODAFONE Group Plc Agree

2.4 General comments

Q1: Should you have any general comments, please do so below.

Feedback Form 4: General comments

2.5 Summary from the Initial Round

Based on all comments received:

- **Moderator Proposal 1 is agreed.**
- **Moderator Proposal 2 is agreed.**

- **Proposal P2 from [3] i.e. restricting Objective 3 to NR-DC is agreed.**

It is noted that [2] RP-222332 implements the above.

One company also proposed to add the following to Objective 3:

- avoiding an unnecessary MN-to-target-SN-RTT for cases when the source SN config changes that does not impact the target SN config.

No direct comments were received on this proposal during the Initial Round. The Moderator therefore suggests to discuss this point (and only this point) during the Intermediate Round. No other discussion will be entertained.

NOTE: Depending on the outcome on the discussion on the above, the Moderator will recommend to approve RP-222332 as is, or to revise it.

3 Intermediate Round

3.1 Discussion on MN-to-target-SN-RTT

In the Initial Round, one company proposed to add the following to Objective 3:

- avoiding an unnecessary MN-to-target-SN-RTT for cases when the source SN config changes that does not impact the target SN config.

Q1: please indicate below if you have any comment on this proposal, if you support it or if you do not support it.

Feedback Form 5: Comments on avoiding unnecessary MN-to-target-SN-RTT

1 – CATT

This issue seems not limited with CHO+SCG, e.g., it may also exist for inter SN CPC. We think one possiblity is to discuss based on company contributions in the WG (e.g., R3 is discussing related topics in R17 CPAC).

After Oct. and Nov. RAN WG meetings, if needed, we could revist this in RP#98-e based on situation then.

2 – Ericsson LM Without this objective there will **always** be unnecessary delay whenever the (source) SN-config is updated since a handshake/RTT between the MN and target SN is needed. If the WGs can handle this in a feasible way, we think they should not be limited by the WID.
3 – VODAFONE Group Plc This issue can be discussed in WGs even without a modification to the WID objectives.
4 – vivo Mobile Communication Co. We prefer to keep the current WID scope as it is. As commented by other companies, this issue could be further discussed in WG. Besides, we think the discussion should be limited in RAN3, with no impact to RAN2.
5 – MediaTek Inc. Our preference is to have this aspect discussed in RAN3 first and, if needed, we can add this in the future WID revision.
6 – LG Electronics Polska We have a similar view with MediaTek.
7 – Nokia We agree with the above comments. The WID should not be updated with an issue that has not been discussed or confirmed in RAN3.
8 – China Unicom RAN3 can discuss it firstly without a modification to the WID objectives.
9 – Lenovo (Beijing) Ltd In CHO+SCG there are some failure case except for use case mentioned by Ericsson. For example, target SCG is same as source SCG. When UE performs CHO with SCG, RLF on source SCG happens already. In this failure case, UE will still perform RA to the failed SCG. Our understanding is that these cases can be addreesed in Rel-18 or TEI Rel-17.

3.2 Summary from the Intermediate Round

On the topic:

- avoiding an unnecessary MN-to-target-SN-RTT for cases when the source SN config changes that does not impact the target SN config.

Based on the discussion, the issue can be further discussed in WG. No consensus was found to make any

further amendment to the WID in this RAN#97e plenary. RAN3 should first discuss the topic and then, *if needed*, an update of the WID could be had at RAN#98e (though some companies do not see any further update would be needed).

Given this:

Moderator Proposal:

- To approve RP-222332 as is.
- ”*avoiding an unnecessary MN-to-target-SN-RTT for cases when the source SN config changes that does not impact the target SN config.*” - can be discussed in RAN3. If needed, the WID can be further updated in RAN#98e.
- To note other TDocs: RP-222014, RP-222333, RP-222392

The discussion is now closed - no Final Round is needed.