Summary

Variant of CB: # 2_ L1L2CentricMobility_RAN3_114e Version 0.0.2

RAN3

1 Introduction

This contribution is to kick off the following discussion.

Table 1:

CB: # 2_ L1L2CentricMobility **- Whether the clarification on "the non-serving cell" based on LSin is clear?** **- The gNB-CU configures the inter-cell multi-TRP operation function and signals the inter-cell multi-TRP operation via a single command to the gNB-DU?** **- Check RAN2 progress firstly?** **- Reply LS to RAN1, RAN4?** (ZTE - moderator) [NWM] Summary of offline disc R3-215805

Please Note: Two rounds of discussion.

The first round email discussion plan to be end before 1st week.(Friday 18:00 UTC, 2021-11-5)

The second round email discussion plan to be end before the email deadline at second week(Thursday 12:00 UTC).

2 Report to Chairman

Agree R3-216168 Reply LS on TCI State Update for L1L2-Centric Inter-Cell Mobility to RAN3

3 Second Round Discussion

3.1 F1AP impact on L1/L2-Centric Inter-Cell Mobility

Following majorities view, the impact can be wait for RAN2/1 's progress.

Conclusion : F1AP impact on L1/L2-Centric Inter-Cell Mobility wait for the progress of RAN1/2.

Q2-1: Please provide your different view on this conclusion.

Feedback Form 1:

3.2 LS to RAN1/2/4

For LS in R3-215717, the reason why the LS is needed if that given the fact the updated WID has involved RAN3 while only 2 meeting left for RAN3 to consider this without any TU allocated. It is really necessary for RAN2/1 to aware the situation in RAN3 and provide progress if any. Otherwise, without any LS driven from RAN1/2, only contribution driven can be used in the left two meeting. It is possible not all interested companies can provide analysis in time and without enough discussion it seems hard to complete the WID in time.

For LS in R3-215717, majorities fine with the clarification of "non serving cell", however, as point in [R3-215792], RAN1 and RAN2 do not use the term "non-serving cell" anymore, "A TRP associated with a PCI different from that of the serving cell" is in used. Therefore it seems not necessary to request RAN1/4 clarify an useless concept. Moderator suggests to clarify that RAN3 take into account "A TRP associated with a PCI different from that of the serving cell" instead of "non serving cell". In terms of this clarification, no need to send LS to RAN4.

A draft LS has been uploaded in the folder and welcome further rephrase. The folder address is "https://www.3gpp.org/ftp/tsg_ran/WG3_IU/TSGR3_114-e/Inbox/Drafts/CB%20%23%202_%20L1L2CentricMobility"

Proposal : Send LS to RAN2/1 for clarification the impact on F1AP and understanding of "non serving cell".

Q2-1: Please provide your different view if any.

Feedback Form 2:

4 First Round Discussion

4.1 F1AP impact on L1/L2-Centric Inter-Cell Mobility

One company[3] provide initial analysis on L1/L2-Centric Inter-Cell Mobility and provide following proposal :

Proposal 1: The gNB-CU configures the inter-cell multi-TRP operation function to the gNB-DU once UE capabilities are known.

Proposal 2: The gNB-CU configures the inter-cell multi-TRP operation function to the gNB-DU via either the UE CONTEXT SETUP or the UE CONTEXT MODIFICATION procedures.

Proposal 3: The gNB-CU signals the inter-cell multi-TRP operation via a single command to the gNB-DU, where the selection of the suitable TRPs belonging to any of the non-serving cells under its control remains a gNB-DU decision.

Proposal 4: Derive required Stage 2 and Stage 3 specification work on the basis of the proposals above
F1AP impact on L1/L2-Centric Inter-Cell Mobility

Q1: Please provide your view on these proposals.

Feedback Form 3:

1 – ZTE Corporation

Wait for progress of RAN1/2. RAN2 has discussed the topic for two meetings and still does not achieve concrete conclusion on signalling Modeling. Regarding UE capability , it is still under discussion. Therefore it is better for wait for RAN2/1 further clarification of the signalling modeling before RAN3 to normative it in network interface.

2 – Ericsson-LG Co.

We are ok to wait for more progress in RAN2. Said that, we think that the relevant aspects to RAN3 concern the signalling between CU and DU or the non-serving-cells proposed by the CU and adopted by the DU. This is in a way similar to how SCells are managed over the F1 for CA. We do not see any interaction between CU and UD needed in case of intra cell multi TRP.

3 – Nokia Japan

We are ok to wait for more progress in RAN2. However, RAN3 should seek further clarification on these functions scope. Having said that, the WID itself is already clear there is F1 impact. Hence, even more relevant to seek clarification on the Rel 17 functional scope in order to progress in RAN3 within this release.

4 – RadiSys

Agree with E///

5 – Huawei Technologies France

We think we should firstly wait for the progress and conclusions in RAN1/2, then RAN3 could evaluate the potential impacts to RAN3. Technically, actually we don't see any RAN3 impacts regarding the inter-cell TRP for the moment.

6 – CATT

Wait RAN1/2 maybe more suitable.

Technically we don't think these proposals reasonable. According to the current mechanism the gNB-DU always knows the UE's radio capability (it is carried in inter-node RRC messages such as *HandoverPreparationInfo* or *CGConfigInfo*), so the gNB-DU is capable to make the decision on whether to use this feature and what non-serving cell to use.

7 – Samsung Electronics Nordic AB

We prefer to wait for RAN1/2 progress first.

In WID, the RAN3 impact is described with "… if any". Thus, whether there is real impact or not needs further discussion. Without clear agreements from RAN1/2, RAN3 may not be able to have clear evaluation. So, it is better wait for a moment.

8 – Qualcomm CDMA Technologies It would be safe to wait for further RAN1/RAN2 progress before deciding F1 impacts.

4.2 LS to RAN2/1 of Clarification the impact of DU and CU.

Based on reply LS [1][2], it is noted RAN3 has been captured in NR_feMIMO-Core work as reflected in revised WID RP-211586. And the target completion plenary is RAN#95 which means only 3 meeting including RAN3#114 is left for RAN3.

- Specify signaling between CU and DU to enable inter-cell beam management if any [RAN3]

However, it is still unclear the impact on CU and DU from RAN3 point of view.

During past two meetings, RAN2 got progress on this topic and 4 options on the table, it is benefit for RAN3 to start initial analysis with aware the impact on CU and DU from RAN2 point of view. For example, if option 1 (Cell based) solutions is selected by RAN1/2, considering the model require the new cell always "associated" with a legacy serving cell via the inter-cell mTRP operation, the F1AP may impacted by adding configuration of Cell relation.

It is propose to send an LS for RAN2/1 for clarification of the impact.

One company in [5] provide a draft LS can be as a baseline.

Q2: Please provide your view on this LS.

Feedback Form 4:

1 – ZTE Corporation The LS is needed. May update based on progress in this meeting.
2 – Nokia Japan In our understanding there will be F1 impacts from this Rel 17 WID . Hence, request for further information including both RAN1/RAN2 is fine.
3 – Huawei Technologies France No. We don't think the LS is needed for the moment. As analyzed in our response paper, we should first wait for RAN1/RAN2 to conclude with a final solution, then either they send us LS or we could just evaluate directly in RAN3. There is no need for RAN3 to guess the impacts without a solution.
4 – Samsung Electronics Nordic AB No. We share the similar understanding as HW. Since RAN2 is still working on the option down-selection, we are not sure if there is any benefit to send LS at this moment.

4.3 LS on Clarification of "None serving cell"

One company [4] point out the misalignment between RAN4/1 of "None serving cell".

From the RAN4 LS, RAN3 understands that a non-serving cell is a neighbour cell with a different PCI from serving cell and that a UE can be scheduled data on both serving and non-serving cells.

However, the LS from RAN1 states that "*As reflected in the revised WID RP-211586, no change in serving cell (hence no inter-cell mobility) is assumed. Therefore, the above question 1 is no longer relevant.*"

RAN3 would like to clarify that the understanding derived from the reply LS from RAN4 is correct also for RAN1.

Q3: Please provide your view on this LS

Feedback Form 5:

1 – ZTE Corporation Agree the clarification. The content of the LS can be merged with other LS.
2 – Ericsson-LG Co. We agree to send an LS to clarify the temrinology. We could include RAN2 in this LS and state that RAN3 has only 2 meetings to deliver a solution and that feedback from RAN2 would be essential
3 – Nokia Japan We agree to send an LS to clarify the terminology. It should also be indicated that RAN3 has no TUs allocated for this work and hence feedback on the feature overall including terminology is essential.
4 – Huawei Technologies France In our response paper, we suggest to use "a TRP associated with a PCI different from that of the serving cell" instead of "non-serving cell" in inter-cell BM. This is just for RAN3 to reach a common understanding when discusson pops up in RAN3, but there is no need for RAN3 to ask RAN1 to align with RAN4, this should be RAN1's business.
5 – Samsung Electronics Nordic AB RAN1's reply seems to indicate that non-serving cell is not applicable, and the UE is always under its serving cell. While RAN4 reply indicates that UE can perform the data transmission with a non-serving cell. It seems that there are some inconsistences. So, we feel it is beneficial to send LS to RAN1 for further clarification. The content of the LS can be addressed in second round.
6 – Qualcomm CDMA Technologies It does not harm to clarify by LS. But, I guess RAN1/RAN2 will anyway send LS to us with their design/-conclusions.

5 Conclusion, Recommendations [if needed]

6 References

1. R3-214675 LS Reply on TCI State Update for L1/L2-Centric Inter-Cell Mobility to RAN3 (RAN1)
2. R3-214702 Reply LS on TCI state updates for L1/L2 centric inter-cell mobility (RAN4)
3. R3-215077 Discussion on L1/L2-Centric Inter-Cell Mobility in RAN3 in Rel 17 (Nokia, Nokia Shanghai Bell)
4. R3-215228 Reply LS on TCI state updates for L1/L2 centric inter-cell mobility (Ericsson)
5. R3-215717 [Draft]Reply LS Reply on TCI State Update for L1L2-Centric Inter-Cell Mobility to RAN3 (ZTE)
6. R3-215792 Response to R3-215077 Huawei