**3GPP TSG RAN WG2 Meeting #120R2-22xxxxx**

**Toulouse, France, 14 - 18 Nov, 2022**

**Source:** Huawei, HiSilicon

**Title:** Report of [POST120][306][NES] Merged TP (Huawei)

**Agenda Item:** 8.3.1

**WID/SID:** FS\_Netw\_Energy\_NR– Release 18

**Document for:** Discussion and decision

# 1 Introduction

This document is the report of the following discussion:

Post Meeting

* [AT120][306][NES] Merged TP (Huawei)

- Scope; agree to RAN2 TP capturing agreements from RAN2

- Agree to LS to RAN1

- Deadline - Nov 28

The aim of this discussion is to agree on a merged TP for NES capturing RAN2#120 agreements and a LS to RAN1.

Based on RAN2 agreements made online and rapporteur proposals, we provide a draft TR and LS in the following folder: www.3gpp.org / ftp / Email\_Discussions / RAN2 / [RAN2#120] / [POST120][306][NES] Merged TP (Huawei)

Please provide your comments to the TP and LS before Monday, 28th of November 23:59 UTC. Thanks!

# 2 Draft TR

**Please do not insert / make comments in the TR document, which will be hard for Rapporteur to track and respond your comments.**

**Companies are invited to share their detailed comments on the draft TR in the table below.**

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| **Company** | **Detailed comments** | **Rapporteur response** |
| Apple | 1. Section 6.1.2.x, we suggest to capture below agreement made in RAN2#120 at the end of 1st paragraph:4 It is up to RAN1/RAN4 whether it is possible for the UE to synchronize with the non-anchor cell using anchor cell SSB and the conditions to do so2. Section 6.X.2: 2-a: We prefer to align terminology of "NES state" and "NES mode", to avoid confusion. It should be the same thing. 2-b: For 2nd paragraph, we prefer to align wording of below agreement:Agreements1. Capture the solution on enhancing the CHO framework (for faster offloading/onloading during cell deactivation/activation) enabling a evaluation of CHO conditions depending on the NES state of the source/target cell. How to indicate to UE the triggering of the CHO evaluation is up to normative phase. Whenever mobility from source cell is triggered, one could also consider how UE would not select NES cell if any other cell is available when selecting the new cell. Corresponding TP for this is provided in the Annex

 Thus, we suggest below change:"Whenever mobility from source cell is triggered, the NES mode of the target cell could also be considered, e.g., to avoid UEs selecting ~~cells operating in NES mode~~ NES cells if any other cell is available."3. Section 6.X.2, "BWP adaptation with group signalling" is stated not to address in normative phase. But we think RAN2 agreement is that RAN2 don't consider it at this point (i.e. SI phase). Actually, it is still being evaluated in RAN1. It is possible that RAN1 conclude it is feasible. So, we suggest to remove this part.  | 1. This agreement was for 6.1.3 and is captured in the Ericsson TP as “How and whether the timing, synchronization and QCL relationship of the non-anchor NES cell without SSB and SIB can be determined via another cell is decided within WI.”. We have added the same sentence that for 6.1.3.x: “Feasibility of this solution is in RAN1 scope.”.2.a – OK, aligned to NES mode.2.b – OK, the change is addressed. 3. We think this is an important agreement but have changed the wording to “(…) are not considered by RAN2.” to be true with the agreements. |
| Ericsson | -On the agreement below,*It is up to RAN1/RAN4 whether it is possible for the UE to synchronize with the non-anchor cell using anchor cell SSB and the conditions to do so* we think the following sentence from the TP already captures it on a sufficient level*How and whether the timing, synchronization and QCL relationship of the non-anchor NES cell without SSB and SIB can be determined via another cell is decided within WI.*-Furthermore, we agree with Apple’s comment regarding the group HO and the BWP adaptation, i.e., we did not agree to not study the BWP adaptation and the group HO in the WI phase but captured that the BWP adaptation and the group HO were not addressed in the SI phase. As Apple clarified, RAN1 is considering BWP adaptation and hence we should not already exclude it. Therefore, we think we could either just remove this partor revert the text to the version v03Group HO (optimizing the Rel-15 HO procedure) was not considered in this study.BWP adaptation with group signalling was not considered in this study.-Regarding the feasibility, shouldn’t we have the same sentence “Feasibility of this solution is in RAN1 scope.” from 6.1.3.x in 6.1.2.x as well? -Finally, we have a small editorial suggestion to use consistently either “WI phase” or “normative phase” through the document, instead of using them interchangeably.  | For group HO and BWP adaptation we think this is an important agreement but have changed the wording to “(…) are not considered by RAN2.” to be true with the agreements.“Feasibility of this solution is in RAN1 scope.” from 6.1.3.x is added in 6.1.2.x as well.Changed “normative” to “WI” to align. |
| Intel | We also noticed that the feasibility statement is not included for 6.X.2. However, we do not agree that the same sentence “Feasibility of this solution is in RAN 1 scope” since this has no bearing with RAN1. It should just be as in the RAN2 agreement “From RAN2 perspective, CHO enhancements are feasible” | For group HO and BWP adaptation we think this is an important agreement but have changed the wording to “(…) are not considered by RAN2.” to be true with the agreements.Our feasibility agreement is only for CHO enhancements and is reflected in the TP. The RAN1 feasibility was only for the SSB/SIB-less solution(s). |
| CATT | 6.x.1For consistency, we would suggest to align “legacy devices” and “legacy UEs”, “ new NES UEs” and “NES capable UEs” as follows:From RAN2 perspective ~~legacy devices~~ legacy UEs and ~~new NES~~ NES-capable UEs can be handled via cell selection/reselection techniques. | OK – included in v03 together with rapporteur corrections. |
| Qualcomm | 6.x.2We are not ok with Apple’s change” to avoid UEs selecting ~~cells operating in~~ NES cells ~~mode~~”. First this is inconsistent with “Evaluation of conditional handover conditions depending on the **NES mode of source/target cell**”, as it is clear that the consideration is the mode. Second, this quite changes the meaning on the agreed framework where our understanding that this relates to a somewhat dynamic mode of the cell that can change over time according to load, traffic, etc. So, we would prefer to keep the original text in v02.6.x.1“From RAN2 perspective legacy devices and new NES UEs can be handled via cell selection/reselection techniques.”We understand this to be a direct agreement from the meeting, however in its current form, the sentence is unclear, so we propose changing it to add something like “to achieve NES gains” or something like that to clarify that this sentence is an endorsement from RAN2 to utilize cell selection/reselection for NES, i.e., clarify a little the motive of this sentence as we understand it.  | Regarding the first change we have no strong view. This ambiguity is somewhat a result of us not having a definition of a NES cell. The statement is only an example and the first part of the sentence is clear that the NES mode can be considered for mobility. However, we are fine to revert to the original wording. For the second issue we agree that the current wording not very specific. We think the cell (re)selection part does not directly achieve energy saving gains, it can only make UEs avoid camping on those cells. We can clarify the wording by mentioning that we had in mind areas with NES cells deployed: “From RAN2 perspective, legacy UEs and NES-capable UEs can be handled via cell selection/reselection techniques in the presence of NES cells”.Above changes are reflected in v04. |
| OPPO | Regarding the following two sentences in 6.1.3x, we wonder whether there is any difference/different consideration on the UE’s reception behaviour. If not, we prefer the aligned wording between them. Because, in our understanding, “cannot receive” in the first sentence means the UE is not capable or allowed of receiving, while “receive neither” in the second sentence means the UE has the action (i.e. receiving) but receives nothing. *A non-anchor NES cell without SIB is a cell where the UE cannot receive SIB.**A non-anchor NES cell without SSB and SIB is a cell where a UE receives neither SSB nor SIB.*  | The non-anchor cell doesn’t broadcast SIB (in case 1) or doesn’t broadcast both SSB and SIB (case 2). So the UE doesn’t receive it on the non-anchor cell because it’s impossible (there is no SIB/SSB). We do not think the case 2 wording means that the UE tried to receive but ended up receiving nothing. The UE should not try to receive SIB/SSB when on SIB/SSB less cell. We are not defining specific UE behavior in the SI phase though. We can agree to change the second sentence to align with the first one:*A non-anchor NES cell without SSB and SIB is a cell where a UE can receive neither SSB nor SIB.*The change is reflected in v05. |
| ZTE | 1. For Apple’s comment 1, we agree with rapporteur’s view that this is already sufficiently reflected in the TR.
2. Section 6.1.3.x Editorial:

*Depending on the design, the access may occur only via anchor cell or also directly in the non-anchor NES cell*1. Section 6.1.aa.4:

*“It may be beneficial to align UE DRX with Cell DTX and DRX among multiple UEs. The details related to the UE behaviour for this alignment mechanism can be discussed during the WI”*For the above part, we discussed this online and agreed that “*Details related to UE behaviour can be discussed during WI phase*”. So, we propose to align it with the agreement per above.  | 1. Thanks :)
2. OK, included in v05.
3. For the first sentence it was agreed before the meeting and is a direct agreement from R2#119bis-e:

=> It is beneficial to align UE DRX with network DTX and DRX alignment among multiple UEs. (…) Therefore I don’t want to make any changes. For the second one the R2#120 agreement is reflected in the previous paragraph (“*Details related to UE behaviour can be discussed during WI phase.*”). For the alignment part we can change “*will be studied*” to your proposal “*can be discussed during the WI phase*” as the study is already complete.  |
| MediaTek | 1. At least following abbreviations shall be included in section 3.3:
2. CHO
3. LLS
4. NES
5. SLA
6. SLS
7. TRP
8. Clause 6.1.3.x

Since the concept of non-anchor NES cell without SIB is agreed operating in coverage of an anchor cell, we think:*“How and whether the timing, synchronization and QCL relationship of the non-anchor NES cell without SSB and SIB can be determined via anchor cell is decided within WI.”*1. Clause 6.X.2

We think the feasibility of BWP adaptation with group signaling is in RAN1 scope and the RAN2 agreement indicated that RAN2 does not consider “at this point” which is the SI phase. So we suggest following change subject to possible RAN1 conclusion in the WI phase:*“Group HO (optimizing the Rel-15 HO procedure) and BWP adaptation with group signalling are not considered by RAN2 in SI phase.”* | 1. We will add the abbreviation for CHO as this is a feature in RAN2 scope. Other ones were added to the TR by RAN1 and RAN1 is the leading group so we don’t see the need to do it in our scope. Please refer to the RAN1 post meeting discussion (e.g. “NES” is already added).
2. We have no strong view on this change. The wording was proposed and agreed by companies after an offline discussion so we prefer to leave it as is.
3. We have a similar understanding but see no need of such change. This is a TR which is by definition from the SI phase. Those features were not considered by RAN2 up till the time of TR agreement which ended the SI phase. There is nothing precluding such RAN1 conclusions in the WI phase.
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# 3 Draft LS

**Companies are invited to share their detailed comments on the draft LS in the table below.**

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| **Company** | **Detailed comments** | **Rapporteur response** |
| Apple |  |  |
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