**3GPP TSG-RAN WG2 Meeting #124 R2-23XXXXX**

**Chicago, USA, 13th Nov– 17th Nov, 2023**

**Agenda Item: 7.3.1**

**Source: Ericsson**

**Title: Collection of comments to 38.300 CR for NES**

**Document for: Discussion and Decision**

# 1 Introduction

This document is for the report of the following discussion:

* [POST124][039][NES] 38.300 CR (Ericsson)

 Intended outcome: Agree to CR

 Deadline: 2 weeks

# 2 Comments to 38.300 CR for NES

Companies are encouraged to provide comments in the table below to 38.000 CR for NES rather than directly on the draft CR file.

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| **Company** | **Detailed comments** | **Rapporteur response** |
| vivo | **For NES CHO feature.**For the below text: 15.4.2.x2 Conditional Handover… In this case, the following additional triggering conditions are supported, upon which UE may execute CHO to a candidate cell, as defined in TS 38.331 [x]:- The UE may be notified via DCI that a source cell is activating cell DTX/DRX or that a cell is turning off. * 1) For the sentence marked in yellow, the UE actually does not execute CHO immediately but use NES specific CHO event as the CHO execution condition. So, we suggest the below change:

“ upon which UE may use NES-specific CHO event for ~~execute~~ executing CHO to a candidate cell”* 2) For the sentence marked in blue, we think this would cause misunderstanding that the UE will use NES-specific CHO event upon receiving the DCI 2\_9 which is just used for activating the cell DTX/DRX. So, we suggest the below change:

“ The UE may be notified via DCI that a source cell is in network energy saving (e.g., probably the cell is activating cell DTX/DRX or ~~that a cell is~~ turning off.)” | 1) Since Qualcomm raised an additional issue on the same sentence, the latest text proposal from Qualcomm was implemented2) Suggestion implemented (with the modifications suggested by Huawei and Qualcomm) |
| vivo | **For NES cell bar feature:**For the below text: 15.4.2.x3 Camping RestrictionsThe access of UEs capable of NES cell DTX/DRX to a cell is controlled by a single bit in SIB1 (if present), otherwise the barring mechanisms described in clause 7.4 apply. From stage 2 point of view, we think it is good to give more explanations about the motivation and leave more details in stage 3. So, our suggestion is:“ If a cell is activating or going to activate NES cell DTX/DRX, the cell can allow the access of UEs capable of NES cell DTX/DRX via SIB1 but prevent the access of UEs that neither capable of cell DTX nor cell DRX.” | Suggestion implemented (with the modifications suggested by Huawei) |
| vivo | **For NES SSB-less SCell feature:**For the below description:For an SCell, a UE may obtain coarse timing and AGC reference from another serving cell in case the UE is not provided with SSB and SMTC configuration for this SCell, as described in TS 38.213 [13].The reference spec here should be TS 38.331 not 38.213, because the reference serving cell is described in TS 38.331. And based on the description in 38.331 running CR, the reference cell is further referred to TS 38.213 but this is only for intra-band case. | Suggestion implemented (with the modifications suggested by Huawei) |
| vivo | **For NES SD/PD features:** For the below text: “To assist the gNB on muting transceivers and/or adapting transmission power, the UE can be configured to report multiple CSI entries in a CSI report based on one or more sub-configurations, as specified in clause 5.2.1.6 in TS 38.214 [xy].”Actually, the number of sub-configurations in a CSI report is at least 2. The below is copies from the excel file of higher layer parameters given by RAN1. Number of elements in list is [2]… maxNrofCSI-ReportSubconfigPerCSI-ReportConfig.  | Suggestion implemented (i.e. changed from “one” to “two” configurations) |
| Apple1 | **Where:** 15.4.2.x1 Cell DTX/DRX“A maximum of two cell DTX/DRX patterns can be configured per MAC entity.”**Issue:**Current statement may be misunderstood as: if only PCell is configured (i.e. only 1 serving cell), 2 Cell DTX/DRX patterns can also be configured for this PCell. It is different from the intention of this restriction. **Suggested change:** “A maximum of two cell DTX/DRX patterns can be configured per MAC entity for different serving cells.” | Suggestion implemented |
| Apple 2 | **Where:** 15.4.2.x2 Conditional HandoverWe agree with vivo’s 1st issue and their solution. | Since Qualcomm raised an additional issue on the same sentence, the latest text proposal from Qualcomm was implemented |
| Apple 3 | **Where:**15.4.2.x4 Inter-band CA SSB-less SCell“For an SCell, a UE may obtain coarse timing and AGC reference from another serving cell in case the UE is not provided with SSB and SMTC configuration for this SCell, as described in TS 38.213 [13].”**Issue:**1. It should be “nor” (not “and”) between SSB and SMTC configuration.
2. “as described in TS 38.213 [13].” is not correct (no Ran1 spec change for inter-band SSB-less CA), and can be removed.

**Suggested change:**“For an SCell, a UE may obtain coarse timing and AGC reference from another serving cell in case the UE is not provided with SSB ~~and~~ nor SMTC configuration for this SCell, ~~as described in TS 38.213 [13].”~~ | Suggestion implemented (with the modifications suggested by Huawei) |
| OPPO 1 | In Clause 10.3, it describes the activity of UE monitoring PDCCH, which should be controlled by DRX and cell DTX, not cell DRX, right? If correct, the following should be changed:A UE always monitors the PDCCH(s) in order to find possible grants for uplink transmission when its downlink reception is enabled (activity governed by DRX and cell DRX when configured). => A UE always monitors the PDCCH(s) in order to find possible grants for uplink transmission when its downlink reception is enabled (activity governed by DRX and cell DTX when configured). | Suggestion implemented |
| OPPO 2 | In RAN2#124, RAN2 confirms that UE triggers RACH for an emergency call. 1. Confirm WA emergency call: UE triggers RACH upon determining that an emergency call is initiated during the cell DTX/DRX non active period

As Clause 9.2.6 in TS 38.300 specifies a number of events for RACH triggering, we are trying to understand whether the case above would be an additional event in RACH triggering, since the following seems not always cover this case above.*- DL or UL data arrival, during RRC\_CONNECTED or during RRC\_INACTIVE while SDT procedure (see clause 18.0) is ongoing, when UL synchronisation status is "non-synchronised";**- UL data arrival, during RRC\_CONNECTED or during RRC\_INACTIVE while SDT procedure is ongoing, when there are no PUCCH resources for SR available;* | Since we agreed to handle this case by UE implementation, there would not be a need for an explicit mentioning to this triggering in 38.300 |
| Huawei | 1) Agree to Vivo, issue 1. For the second proposed change we would slightly modify the TP:“The UE may be notified via DCI that a source cell has entered network energy saving state (e.g., the cell is activating cell DTX/DRX or ~~that a cell is~~ turning off.)”2) For camping restrictions agree to have more explanations. Some proposed modifications to the TP from Vivo:“If a cell is activating or going to activate NES cell DTX/DRX, the cell can allow the access of UEs capable of NES cell DTX/DRX via a single bit in SIB1 but prevent the access of UEs not capable of cell DTX/DRX using legacy barring mechanisms.”3) Agree to Apple, issue 1, and the proposed TP. 4) Inter-band CA SSB-less SCell- Suggest to remove the word “coarse”, I did not find this in the RAN4 LS (R2-2311741)- Further suggestions to the TP:For an SCell, a UE may obtain timing reference and AGC source from another serving cell in case the UE is not provided with SSB nor SMTC configuration for this SCell, as described in TS 38.331. | 1) For the first change proposed by Vivo, since Qualcomm raised an additional issue on the same sentence, the latest text proposal from Qualcomm was implemented. For the second change proposed by Vivo (for which you have here an additional proposal), the change was merged with the suggestion you propose and Qualcomm’s suggestion.2) Suggestion implemented (with slight modification that “legacy barring mechanism” was changed to “barring mechanisms described in clause 7.4” since the specifications would usually not define the “legacy” concept. 3) Suggestion implemented4) Suggestion implemented |
| Nokia 001 | Proposed rewording of the addition to be more aligned with the previous statement to start with a verb:15.4.1 GeneralThe function allows, for example in a deployment where capacity boosters can be distinguished from cells providing basic coverage, to optimize energy consumption enabling the possibility for an E-UTRA or NR cell providing additional capacity via single or dual connectivity, to be switched off when its capacity is no longer needed and to be re-activated on a need basis, or to support various adaptation techniques in time, frequency, spatial and power domains. | Suggestion implemented |
| Nokia 002 | 15.4.2.x1 Cell DTX/DRXTo facilitate reducing gNB downlink transmission/uplink reception active time | Suggestion implemented |
| Nokia 003 | Based on the RAN1 agreements, none of the gNB transmission/reception is impacted during active period, thus no need to list those. The only discussion is what is impacted during non-active period.- **active duration**: duration that the UE waits for to receive PDCCHs or SPS occasions, and transmit SR or CG. In this duration, the gNB transmission and reception are not impacted;  | The list of “transmission/reception” aspects that was incorporated as not impacted had the intention to hint that those are impacted during non-active time. This general formulation was discussed and agreed on previous meetings so we should not simply delete this text now. If there is a further proposal on how to capture non-active time restrictions in another way, it could be considered.  |
| Nokia 004 | Even though we added inter-band CA SSB-less SCell in release release, both intra-band and inter-band CA SSB-less could be used for NW energy saving, could consider removing inter-band form the title and add both intra and inter in the description.15.4.2.x4 CA SSB-less SCellFor an intra-band or inter-band CA SCell, a UE may obtain coarse timing and AGC reference from another serving cell in case the UE is not provided with SSB and SMTC configuration for this SCell, as described in TS 38.213 [13]. | Suggestion implemented |
| CATT 001 | 15.4.2.x1When cell DTX is configured and activated for the concerned cell, the UE does not monitor PDCCH…It should be "may" as it is up to the UE. This would also align with the verb used in MAC CR.We know this was already captured in the running CR, but not too late to fix. | Suggestion implemented |
| CATT 002 | 15.4.2.x3Agree with vivo and Huawei that the text on camping restrictions needs rewording. We support the text proposed by Huawei. | Suggestion implemented |
| Qualcomm 001 | - **active duration**: duration that the UE waits for to receive PDCCHs or SPS occasions, and transmit SR or CG. In this duration, the gNB transmission/reception of PDCCH, SPS, SR, CG, periodic and semi-persistent CSI report are not impacted for the purpose of network energy savingNote that RAN1 has agreements on SRS and CSI-RS as well for cell DTX/DRX. This can be added here for a comprehensive list or be left to RAN1 specs. No strong position on our side, but wanted to bring it up | Since the agreements on SRS and CSI-RS are more detailed, they could be left to RAN1 specifications. |
| Qualcomm 002 | Agree with Vivo001 which are also brought up by other companies. Throughout the discussion, we found evaluation/execution language to be a bit confusing so we propose being more specific as follows:In this case, the following additional triggering conditions are supported, upon which UE may evaluate additional configured NES related CHO events to one or more candidate cell(s),Also, in our understanding the following is incorrect:- The UE may be notified via DCI that a source cell is activating cell DTX/DRX or that a cell is turning off. The UE is actually not notified of those things (UE does not understand what cell “turns off” means) nor is there a commitment at the NW to only use this mechanism before turning off a cell or activating cell DTX/DRX, nothing stops the NW from signalling this L1 indication while cell DTX/DRX is already activated or signalling this L1 indication and not turning off the cell (but reducing the DU power or performing some spatial adaptation. Thus, we propose the following:- The UE may be notified via DCI to start evaluating CHO conditions(s) configured with NES event indication. | 1) Suggestion implemented2) Suggestion implemented (with the modifications also suggested by Vivo and Huawei) |
| Samsung001 | Editorial comments on the CR cover sheet:* CR-Form-v12.2 is the latest version. Please use it.
* Need to refer to other CRs in Other spec affected section

In “clauses affected”, 15.4 should be replaced by 15.4.2.x1, 15.4.2.x2, 15.4.2.x3, 15.4.2.x4 and 15.4.2.x5. | * Updated to v12.2
* Since stage 2 does not generally affect all CRs, it seems sufficient to add 38.331 CR
* Updated accordingly
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| Samsung002 | 15.4.x.2“How to ensure this is up to the network implementation” is not necessary.The existing text “the network should ensure that there is no impact to that service” implies the same. | The referred sentence was removed as suggested. |
| Samsung003 | 15.4.x1It would be good to avoid some unclarity in the text:When cell DTX is configured and activated for the concerned cell, the UE may not monitor PDCCH in selected cases or does not monitor SPS occasions during cell DTX non-active duration. When cell DRX is configured and activated for the concerned cell, the UE does not transmit on CG resources or does not transmit a SR during cell DRX non-active duration. | Suggestion implemented |
| OPPO 3 | 15.4.2.x2 in v02The following seems to say the UE starts CHO evaluation upon the reception of DCI.The same principle as described in 9.2.3.4 applies to conditional handover in case the source cell is using a network energy saving solution, unless hereunder specified. In this case, the following additional triggering conditions are supported, upon which UE may use NES-specific CHO event for executing CHO to a candidate cell, as defined in TS 38.331 [x]:- The UE may be notified via DCI to start evaluating CHO conditions(s) configured with NES event indication (e.g., the cell is activating cell DTX/DRX or turning off). But, if I understand correctly, RAN2 already has the following agreement (In #121bis), to say that CHO evaluation is initialised upon receiving the CHO configuration. Then the DCI should be the one that triggers the CHO execution. - As a baseline, UE initiates CHO evaluation upon receiving the CHO configuration. FFS what trigger is used for execution of CHOIf so, we understand that the v02 is not aligned with what we have agreed before. As RAN1 has already agreed to the following in their TP (In #115), I think the safest way is to use a similar way as what RAN1 agreed (to also avoid more discussion in RAN2).

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| - if *nesEvent* is configured, the NES-mode indication field includes one bit indicating NES-specific CHO execution condition, as described in [12, TS 38.331]- a ‘0’ value for a bit of the NES-mode indication field, indicates NES-specific CHO execution condition is disabled [12, TS 38.331] a '1' value for a bit of the NES-mode indication field, indicates NES-specific CHO execution condition is enabled [12, TS 38.331] |

Thus, the suggested text is as below. - The UE may be notified via DCI to enable CHO conditions(s) configured with NES event indication (e.g., the cell is activating cell DTX/DRX or turning off). Or,- The UE may be notified via DCI to enable the NES-specific CHO execution condition(s) (e.g., due to the cell is activating cell DTX/DRX or turning off).  | Suggestion implemented according to the first alternative since it is simpler change |
| CATT | Agree with OPPO that the DCI triggers the execution, not the start of evaluation.In addition, we find confusing the bracket “(e.g., the cell is activating cell DTX/DRX or turning off)” as it could be understood, after the text about DCI trigger, that the DCI for activating cell DTX/DRX can be used for triggering the NES event based CHO. To avoid confusion, we would suggest moving the bracket above as follows:The same principle as described in 9.2.3.4 applies to conditional handover in case the source cell is using a network energy saving solution (e.g., the cell is activating cell DTX/DRX or turning off), unless hereunder specified. In this case, the following additional triggering conditions are supported, upon which UE may use NES-specific CHO event for executing CHO to a candidate cell, as defined in TS 38.331 [x]:- The UE may be notified via DCI to start evaluating CHO conditions(s) configured with NES event indication. | Suggestion implemented |

# 3 Conclusion

TBD