**3GPP TSG RAN WG2 Meeting #130 R2-250xxxx
Malta, MT, 19th – 22th May, 2025**

**Agenda item: 8.5.1**

**Source: Apple (Rapporteur)**

**Title: Summary report of [POST129b][113][NES] 38.304 CR (Apple)**

**WID/SID: Netw\_Energy\_NR\_enh-Core– Release 19**

**Document for: Discussion and Decision**

# 1 Introduction

This is a summary document on collection of comments to TS 38.304 CR during below running CR discussion:

* [POST129b][113][NES] (Apple)

 **Scope:** Update 38.304 running CR based on RAN2#129bis progress and maintain essential open issue list in a separate contribution (38.304 running CR can keep editor’s notes for readability).

 **Intended outcome:** Updated 38.304 running CR and essential 38.304 open issue list.

**Deadline: Long email discussion**

## Contact information:

|  |  |  |
| --- | --- | --- |
| Company | Delegate Name | Email |
| Apple | Peng Cheng | Pcheng24@apple.com |
| Xiaomi  | Shukun Wang | Wangshukun3@xiaomi.com |
| vivo | Jianhui Li | jianhui.li@vivo.com |
| Google | Ming-Hung Tao | mhtao@google.com |
| Ericsson | Helka-Liina Määttänen | Helka-liina.maattanen@ericsson.com |
| Samsung | Anil Agiwal | anilag@samsung.com |

# 2 How open issues of RAN2#129 are handled

In RAN2#129b, the following running CR was endorsed:

*R2-2502323 Running 38.304 CR for network energy saving Apple (Rapporteur) draftCR Rel-19 38.304 18.4.0 B Netw\_Energy\_NR\_enh-Core*

* *Endorsed.*

The endorsed CR has the following 5 open issues (EN):

* Editor’s note: FFS the UE behavior if *pagingAdaptationPEI-Config* is configured.
* Editor’s note: whether to capture the barring (including no UL WUS configuration and max number of preamble transmission for OD-SIB1 request) in TS 38.331 or/and TS 38.304.
* Editor’s note: whether to capture the unbarring behavior in TS 38.331 or/and TS 38.304.
* Editor’s note: whether to capture trigger condition of OD-SIB1 acquisition procedure for RRC\_IDLE / RRC\_INACTIVE UE (i.e. reusing cell reselection criteria) in TS 38.331 or/and TS 38.304.
* Editor’s note: whether to capture OD-SIB1 operation in this separate Section or in Section 5.3.1/5.2.4.1.

After online and offline discussion of RAN2#129b, CR rapporteur handled these open issues in the way summarized in Table.1.

|  |  |  |
| --- | --- | --- |
| **Open issue**  | **Any agreement in RAN2#129b?** | **How CR Rapporteur handled it in new running CR**  |
| Editor’s note: FFS the UE behavior if *pagingAdaptationPEI-Config* is configured.  | Yes:=> For the case when both pei-Config-r17 and pagingAdaptationPEI-Config-r19 are configured, R19 UE supporting paging adaption should monitor PEI according to pagingAdaptationPEI-Config-r19 while other UE should monitor PEI according to pei-Config-r17.=>For the case when pei-Config-r17 is configured and pagingAdaptationPEI-Config-r19 is absent, both R19 UE supporting paging adaption and other UE should monitor PEI according to pei-Config-r17. | * Capture agreed UE behaviour in Section 7.2.1.
* The EN is removed.
 |
| Editor’s note: whether to capture the barring (including no UL WUS configuration and max number of preamble transmission for OD-SIB1 request) in TS 38.331 or/and TS 38.304. | Yes:=> Following agreement on “barring behavior clean-up”, capture the UE barring behavior of OD-SIB1 in both TS 38.331 and TS 38.304. Check offline whether we can rely on existing legacy UE barring specification in 38.304 (e.g. the case of RACH failure).=> (modified) On the unbarring behavior of OD-SIB1 UE, capture it as normative text in TS 38.304. Way-forward Proposal (on offline check of Proposal 1): For UE barring the OD-SIB1 cell in case of RACH failure, capture in TS 38.304, e.g. 1. If the cell is to be treated as if the cell status is "barred" due to the OD-SIB1 request number reaching preambleTransMax;

**2> UE may exclude the barred cell as a candidate for cell selection/reselection for up to 300 seconds;** | * Capture agreed UE behaviour in Section 5.3.1.
* New Section X is removed.
* The EN is removed.
 |
| Editor’s note: whether to capture the unbarring behavior in TS 38.331 or/and TS 38.304.  | Yes:**=> (modified) On the unbarring behavior of OD-SIB1 UE, capture it as normative text in TS 38.304.** | * Capture agreed UE behaviour in Section 5.3.1.
* New Section X is removed.
* The EN is removed.
 |
| Editor’s note: whether to capture trigger condition of OD-SIB1 acquisition procedure for RRC\_IDLE / RRC\_INACTIVE UE (i.e. reusing cell reselection criteria) in TS 38.331 or/and TS 38.304.  | Yes:=> We do not need a separate new triggering condition of OD-SIB1 acquisition. | * Remove the condition.
* New Section X is removed.
* The EN is removed.
 |
| Editor’s note: whether to capture OD-SIB1 operation in this separate Section or in Section 5.3.1/5.2.4.1.  | No | After offline discussion with some company, it seems majority view is to capture in legacy section. Thus:* New Section X is removed.
* Move UE behaviour in cell reselection to section 5.2.4.1.
* Move UE barring/unbarring behaviour to section 5.3.1.
* The EN is removed.
 |

# 3 Collection of comments on running CR after RAN2#129b

Please provide your comments in below table, and Rapporteur will response. Please do not insert any comments in running CR directly, which is hard for Rapporteur to follow all comments.

And based on existing EN and your comments, Rapporteur will identify stage 3 open issues.

|  |  |  |
| --- | --- | --- |
| **Company****+issue #****(e.g. A001)** | **Detailed issue and proposed change** | **Rapporteur response** |
| Nokia001 | 5.3.1 – Missing SIB1 request configuration seems to be in RRC section 5.2.2.3.1 – which then calls 5.2.2.5Barred due to PRACH attemps seems to be in RRC new section 5.2.2.3.3x – which then calls 5.2.2.5Last case (windows) – I did not find where is that captured? For clarity should we in 38.304 to corresponding sections in RRC. It might be best toa void misunderstanding which scenario actually each bullet refers to? | Good suggestion. I have added “as defined in section 5.2.2.3.1 of TS 38.331 [3]” for 1st case (missing UL WUS configuration case) and “as defined in section 5.2.2.3.3x of TS 38.331 [3]” for 2nd case (max preamble case). On 3rd case, I have coordinated with RRC CR rapporteur and MAC CR rapporteur. The conclusion is: * It seems to be obvious that the failure is after the window.
* If we specify the window, then we may need to capture separately all the other cases why UE doesn’t receive SIB1.

Thus, I add a maker of [FFS…] and an EN:Editor’s Note: FFS whether to explicitly capture the failure case of OD-SIB1 window expiry in 38.304. |
| Nokia002 | Slight rewording proposal for this “ If a UE supporting OD-SIB1 barred a cell in which OD-SIB1 is enabled due to no available *SIB1* request configuration, it considers the cell is no longer barred once its *SIB1* request configuration becomes available.”Maybe something like this“If a UE supporting OD-SIB1 barred a cell due to no available *SIB1* request configuration as defined in [RRC, 5.2.2.3.1], it considers the cell is no longer barred once *SIB1* request configuration of the cell is acquired.” | Accept. Revised in v01. |
| Xiaomi001 | How to capture the following agreement.* For the case when pei-Config-r17 is configured and pagingAdaptationPEI-Config-r19 is absent, both R19 UE supporting paging adaption and other UE should monitor PEI according to pei-Config-r17.

[vivo] Do not observe the need to add more description. As in legacy text, UE behavior is not required as “shall monitor PEI”, but as “can monitor PEI”:7.2.1 Paging Early Indication receptionThe UE may use Paging Early Indication (PEI) in RRC\_IDLE and RRC\_INACTIVE states in order to reduce power consumption. If PEI configuration is provided in system information, the UE in RRC\_IDLE or RRC\_INACTIVE state supporting PEI (except for the UEs expecting MBS group notification) can monitor PEI using PEI parameters in system information according to the procedure described below.Therefore, we understand if pagingAdaptationPEI-Config-r19 is absent, both R19 UE supporting paging adaption and other UE can monitor legacy PEI with legacy parameters in SI, which is already allowed in current spec. | Same view as vivo. When new PEI configuration is not provided, Rel-19 UE follows the legacy behavior on PEI reception, which is covered by previous paragraph of section 7.2.1. Thus, no need to capture it.  |
| vivo001 | 5.2.4.1If dedicated frequenecy priority parameters (*odsib1-CellReselectionPriority*, *odsib1-CellReselectionSubPriority*) are provided in system information, the UE supporting OD-SIB1 ignores the *cellReselectionPriority* and *cellReselectionSubPriorit* in the system information and applies the dedicated ones to determine frequency prioritization. If dedicated inter-frequency and/or intra-frequecy excluded cell lists (*intraFreqODSIB1-ExcludedCellList*, *interFreqODSIB1-ExcludedCellList*) are provided in system information, the UE supporting OD-SIB1 ignores *intraFreqExcludedCellList / interFreqExcludedCellList* and doesn’t consider the cell(s) in the dedicated lists as candidates for cell reselection.Comments: typos | Thanks for the careful review. Revised in v01. |
| Google001 | [Response to Nokia001]We agreed there should be corresponding descriptions in 38.331 to avoid misunderstanding/misalignment, but the issue is more on 38.331 as the current 304 running CR is correctly implemented according to the RAN2 agreements. We think the closest mapping (for the case of SIB1 monitoring window) in the current 331 running CR is the following: *5.2.2.3.3x Request for on demand SIB1**…*1. *if the UE is unable to acquire the SIB1:*

*2> perform the actions as specified in clause 5.2.2.5.*We propose to modify the above condition in 331, such as: *“if the UE is unable to acquire the SIB1* *as defined in FFS”*, assuming the FFS part specifies the UE behavior during the SIB1 monitoring window. | See my comment to Nokia001. |
| Ericsson01 | - if the UE is an eRedCap UE and *intraFreqReselection-eRedCap* in *SIB1* is available:- If the field *intraFreqReselection* in *MIB* message is set to "allowed":- the UE may select another cell on the same frequency if re-selection criteria are fulfilled;- If the cell is to be treated as if the cell status is "barred" due to no available *SIB1* request configuration for the UE supporting OD-SIB1; or- If the cell is to be treated as if the cell status is "barred" due to maximum number of PRACH attempts is reached for the UE supporting OD-SIB1; or- If the cell is to be treated as if the cell status is "barred" due to failing to acqire the *SIB1* upon the expiry of the *SIB1* monitoring window as defined in [4] for the UE supporting OD-SIB1; orAre the newly added cases now under Redcap case? Or am I misinterpreting? | In current 38.304, this branch of UE barring behavior is shared in 3 cases (neither RedCap/eRedCap UE, RedCap UE and eRedCap UE), as I copied below.- If the UE is neither a RedCap UE nor an eRedCap UE; or- if the UE is a RedCap UE and *intraFreqReselectionRedCap* in *SIB1* is available; or- if the UE is an eRedCap UE and *intraFreqReselection-eRedCap* in *SIB1* is available:- If the field *intraFreqReselection* in *MIB* message is set to "allowed":Of course, another alternative is to create a separate branch for only OD-SIB1 UE. But I think it is not necessary because the same UE barring behaviors need to be all copied to the new branch, which I think it is ugly.  |
| Ericsson02 | RRC captures now:***odsib1-CellReselectionPriority, odsib1-CellReselectionSubPriority***Cell reselection priorities to be considered by a UE supporting OD-SIB1 instead of *cellReselectionPriority*, *cellReselectionSubPriority* as specified in TS 38.304 [20].Perhaps it is not necessary to repeat in 304 that UE ignores the legacy values? | We have discussed this issue in last round of running CR review. 38.304 capture the detailed UE behavior during cell reselection. And you also captured the reference to 38.304 in the field description. We see no harm for this duplication. |
| CATT001 | 5.2.4.1 Reselection priorities handling……If dedicated frequenecy priority parameters (*odsib1-CellReselectionPriority*, *odsib1-CellReselectionSubPriority*) are provided in system information, the UE supporting OD-SIB1 ignores the *cellReselectionPriority* and *cellReselectionSubPriorit* in the system information and applies the dedicated ones to determine frequency prioritization. If dedicated inter-frequency and/or intra-frequecy excluded cell lists (*intraFreqODSIB1-ExcludedCellList*, *interFreqODSIB1-ExcludedCellList*) are provided in system information, the UE supporting OD-SIB1 ignores *intraFreqExcludedCellList / interFreqExcludedCellList* and doesn’t consider the cell(s) in the dedicated lists as candidates for cell reselection.CATT: For the highlighted part above, there is one more case to consider: on a R19 NES cell,the network will not configure the R19 intraFreqODSIB1-ExcludedCellList, interFreqODSIB1-ExcludedCellList since there is no excluded cell for NES UE in real deployment. For this case, the NES UE still needs to ignore the legacy intraFreqExcludedCellList / interFreqExcludedCellList since NES Cell is included in legacy IE to bar the legacy UE. Suggest to modify it as follows,If dedicated inter-frequency and/or intra-frequecy excluded cell lists (*intraFreqODSIB1-ExcludedCellList*, *interFreqODSIB1-ExcludedCellList*) are provided in system information, the UE supporting OD-SIB1 ~~ignores~~ *~~intraFreqExcludedCellList / interFreqExcludedCellList~~* ~~and~~ doesn’t consider the cell(s) in the dedicated lists as candidates for cell reselection. The *intraFreqExcludedCellList /interFreqExcludedCellList* may include the OD-SIB1 enabled Cell, the UE supporting OD-SIB1 ignores *intraFreqExcludedCellList /interFreqExcludedCellList* on a cell in which SIBxx is provided. | We disagree:* This case was never discussed in Rel-19. If capture it, we need RAN2 agreement.
* We think the case have two issues:
1. The solution (highlighted text) assumes NW will only include NES cells in legacy excluded cell list. We don’t think it is correct because it restricts NW implementation. We assume that legacy excluded cell list may include both NES cells and some normal cells (e.g. blacklist cells for all UE access). In this case, if UE ignores legacy excluded cell list, it will wrongly access blacklist cells.

[Samsung 1]: Do not agree with this understanding. You assume that OD\_SIB1 UE will apply legacy list in your example above. This will result in OD\_SIB1 UE excluding OD\_SIB1 cells as well which is not correct.When legacy excluded cell list includes OD\_SIB1 cells and non OD\_SIB1 cells, network will also transmit new excluded cell list for OD\_SIB1 UEs including non OD\_SIB1 cells. Legacy UE will follow legacy list and OD-SIB1 UE will follow new list. So there is no problem.1. It is an optimization over optimization. We have agreed that legacy UE is barred via “no-SIB1” indication in MIB:

=> There is no need for additional barring mechanisms (in addition to the k\_ssb signaling “no SIB1” indication in MIB) to handle legacy to be able to bar cell using OD-SIB1.[Samsung 1]: Do not agree. We agree with this new excluded list for OD-SIB1 cells so that legacy UE does not even need to measure and consider OD\_SIB1 cells for cell reselection. If barring was enough, there was no need for new excluded cell list for OD-SIB1 UEs.As both Samsung and Sharp support you, I add one EN to allow company to check:Editor Note: FFS whether the UE always ignores the legacy excluded cell lists received from a cell in which SIBxx is provided, irrespective of whether dedicated excluded cell lists being provided. |
| SAM 001 | We agree with the missing scenario indicated by CATT 001. The same has also been indicated by SAM 008 for 38.331 CR.Suggested TP:If dedicated inter-frequency and/or intra-frequecy excluded cell lists (*intraFreqODSIB1-ExcludedCellList*, *interFreqODSIB1-ExcludedCellList*) are provided in system information, the UE supporting OD-SIB1 ~~ignores~~ *~~intraFreqExcludedCellList / interFreqExcludedCellList~~* ~~and~~ doesn’t consider the cell(s) in the dedicated lists as candidates for cell reselection. The UE ignores the *intraFreqExcludedCellList /interFreqExcludedCellList* received from a cell in which SIBxx is provided. | See my response to CATT001. |
| SAM 002 | 5.3.1 Cell status and cell reservations :“If a UE supporting OD-SIB1 barred a cell in which OD-SIB1 is enabled due to no available *SIB1* request configuration, it considers the cell is no longer barred once its *SIB1* request configuration becomes available.”Comment: Its not clear what ‘ a cell in which OD-SIB1 is enabled’ means. What is meaning of ‘enabled’?Suggest to reword asIf a UE supporting OD-SIB1 barred a cell in which SIB1 is provided on demand ~~OD-SIB1 is enabled~~ due to no available *SIB1* request configuration, it considers the cell is no longer barred once its *SIB1* request configuration becomes available | I accept the simplified text suggested by Nokia002, and you concerned part is removed in v01. |
| SAM 003 | 7.1 Discontinuous Reception for paging:“For a UE supporting paging adaptation, if *pagingAdaptation-NS* and *pagingAdaptationNAndPagingFrameOffset* are signaled in system information, it derives the value of N and PF\_offset from the parameter *pagingAdaptationNAndPagingFrameOffset* as defined in TS 38.331 [3], and only monitors the PO(s) derived from these paging parameters.”Comment 1: system information should be SIB1.Comment 2: UE should be in RRC\_IDLE and RRC\_INACTIVEComment 3: determination of Ns from *pagingAdaptation-NS* is missing.Suggest to reword as“For a UE in RRC\_IDLE and RRC\_INACTIVE and supporting paging adaptation, if *pagingAdaptation-NS* and *pagingAdaptationNAndPagingFrameOffset* are signaled in SIB 1 ~~system information~~, it ~~derives~~ determines the value of Ns from *pagingAdaptation-NS,* N and PF\_offset from the parameter *pagingAdaptationNAndPagingFrameOffset* as defined in TS 38.331 [3], and only monitors the PO(s) derived from these paging parameters.” | Accept. Revised in v01.  |
| Sharp 001 | In Section 5.2.4.1, regarding intraFreqODSIB1-ExcludedCellList and interFreqODSIB1-ExcludedCellList, if there is no cell to be excluded for OD-SIB1 UE, gNB can configure the size as 0. If OD-SIB1 specific excluded cell list is not configured, it means the excluded cell list is the same for both OD-SIB1 UE and legacy UE, i.e. OD-SIB1 UE follows legacy excluded list.Furthermore, the current description “inter-frequency and/or intra-frequency” and “ignores intraFreqExcludedCellList / interFreqExcludedCellList” is unclear in which case to ignore which IE.Suggest to describe inter-frequency and intra-frequency separately and add clarification as below:If ~~dedicated inter-frequency and/or intra-frequecy excluded cell lists (~~*intraFreqODSIB1-ExcludedCellList*~~,~~ *~~interFreqODSIB1-ExcludedCellList~~*~~) are~~ is provided in system information, the UE supporting OD-SIB1 ignores *intraFreqExcludedCellList ~~/ interFreqExcludedCellList~~* and doesn’t consider the cell(s) in *intraFreqODSIB1-ExcludedCellList* ~~the dedicated lists~~ as candidates for cell reselection, else the UE supporting OD-SIB1 follows *intraFreqExcludedCellList*. If *interFreqODSIB1-ExcludedCellList* is provided in system information, the UE supporting OD-SIB1 ignores *intraFreqExcludedCellList* and doesn’t consider the cell(s) in *interFreqODSIB1-ExcludedCellList* as candidates for cell reselection, else the UE supporting OD-SIB1 follows *interFreqExcludedCellList*. | See my response to CATT001. And I saw you raised the same comment in 38.331 CR and CR rapporteur didn’t accept the size of 0.  |
| Sharp 002 | In Section 5.3.1: - If the cell is to be treated as if the cell status is "barred" due to maximum number of PRACH attempts is reached for the UE supporting OD-SIB1; orIn current MAC spec, if PREAMBLE\_TRANSMISSION\_COUNTER = preambleTransMax + 1, MAC indicates a Random Access problem to upper layers. And for on-demand OSI, “RACH failure” is used for this case. To align the legacy style and for future proof, suggest to change as below:If the cell is to be treated as if the cell status is "barred" due to ~~maximum number of PRACH attempts is reached~~ RACH failure for OD-SIB1 request for the UE supporting OD-SIB1; or | We disagree to revise wording:1) From technique perspective, reader for 331/304 may misunderstand “RACH failure” as other reason because the terminology is too general. It will be more readable if 38.331/38.304 clearly indicates it is max number of preamble transmission.    2) The wording had been discussed multiple times online/offline (RAN2#128 / RAN2#129b). We have 3 agreements, and the wording was exactly changed from “RACH failure” to “maximum number of PRACH attempt” due to some company concern. So, I don’t want to re-visit this issue. 3) We didn’t have “RACH failure” captured in 38.331/304. So, there is no “legacy style”. After coordination with RRC CR rapporteur and MAC CR rapporteur, our solution is:* No change to MAC spec
* In 38.331, the current text is kept but add a reference to 38.321.
* In 38.304, the current text is kept but add a reference to 38.331.
 |

# 3 Conclusion

Based on post-meeting email discussion, Rapporteur identify the following open issues:

* **Issue 1: FFS whether the UE always ignores the legacy excluded cell lists received from a cell in which SIBxx is provided, irrespective of whether dedicated excluded cell lists being provided.**

**[Issue description]** Some companies proposed a new UE behavior on handling excluded cell list. Their view is that NW may not configure Rel-19 excluded cell list if there is no excluded cell for NES UE in real deployment. In this case, they think that the NES UE also needs to ignore the legacy excluded cell list because NES Cell is included in legacy IE to bar the legacy UE. Thus, they propose that **t**he NES UE always ignores the legacy excluded cell lists received from a cell in which SIBxx is provided, irrespective of whether dedicated excluded cell lists being provided.

**[Rapporteur view] Rapporteur is not convinced by this new UE behavior.**

* + This case was never discussed in Rel-19. If capture it, we need RAN2 agreement.
	+ From technique perspective, there are two issues:
		- 1. It actually assumes NW will only include NES cells in legacy excluded cell list. We don’t think it is correct because it restricts NW implementation. We assume that legacy excluded cell list may include both NES cells and/or some normal cells (e.g. blacklist cells for all UE access). When legacy excluded cell list includes only blacklist cells for all UE, if NES UE ignores legacy excluded cell list, it will wrongly access blacklist cells.
			2. As RAN2 agreed that legacy UE is barred via “no-SIB1” indication in MIB, the dedicated excluded cell list itself is an optimization. We don’t prefer to do optimization over optimization.
* **Issue 2: FFS whether to explicitly capture the failure case of OD-SIB1 window expiry in 38.304.**

**[Issue description]** Some companies proposed to explicitly capture the failure case of OD-SIB1 window expiry in 38.304 according to RAN2#129b agreement. And they proposed to add the failure condition in 38.331.

1. If UE has not received the PDCCH scheduling SIB1 upon the expiry of the SIB1 monitoring window, UE may consider the cell as being barred.

**[Rapporteur view] After coordination with RRC CR rapporteur and MAC CR rapporteur, current conclusion is to make it FFS for further discussion due to below concern:**

* + It seems to be obvious that the failure is after the window.
	+ If we specify the window, then we may need to capture separately all the other cases why UE doesn’t receive SIB1.