3GPP TSG-RAN WG2#131 R2-25XXXXX

Bengaluru, India, 25 Aug - 29 Aug, 2025

Agenda Item: 8.5.1

Source: Huawei, HiSilicon

Title: Report of [POST130][119][NES] (Huawei)

Document for: Discussion and decision

# 1 Introduction

This document is the report of the following discussion:

* [POST130][119][NES] (Huawei)

 **Scope:** Update 38.300 running CR.

 **Intended outcome:** 38.300 running CR.

**Deadline: Long email discussion (Aug 8th 10:00 UTC)**

Please provide your comments by Friday August 1st EOB to allow time for the rapporteur to update the CR before the deadline.

# 2 38.300 CR for NES

The post-RAN2#130 draft running stage-2 CR for NES enhancements and a document for providing comments are provided in the discussion folder. Please don’t change the CR text or insert comments to the CR file. Please use the table below for comments and wording suggestions for clarity of the CR tdoc. If you want to highlight several issues, please use comment IDs e.g. HW01, HW02, etc. so it is easier for the rapporteur to respond.

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| **Company and comment ID (e.g. HW01)** | **Section and detailed comments/suggestions** | **Rapporteur response** |
| A001 | Section 15.4.2.x1:“The OD-SSB transmission indication is transmitted prior to or when the UE receives the SCell activation command. RRC and MAC-CE can indicate the activation/deactivation state of OD-SSB transmissions.”**Issue 1:** On highlighted text “The OD-SSB transmission indication is transmitted”, According to RAN1 agreement, “OD-SSB transmission indication” includes 3 cases: OD-SSB activation, OD-SSB deactivation and OD-SSB transmission adaptation. So, we think “OD-SSB transmission indication” introduces ambiguity. Considering OD-SSB transmission adaptation is already covered by a later sentence, we suggest change “The OD-SSB transmission **activation/deactivation** indication **~~is~~can only be** transmitted…” to focus on activation/deactivation. **Issue 2:** According to RAN1 agreement, OD-SSB activation/deactivation before SCell configuration (i.e. Scenario 1 for OD-SSB activation in neighbour cell) is precluded. But the highlighted text may be misunderstood as supporting Scenario 1 as well. Thus, we suggest change “…is transmitted **to a UE configured with SCell**…”.**Issue 3:** On highlighted text, my Apple Intelligence warns me grammar issue :-). “prior to the UE receives..” is a broken English grammar because “prior to” + Noun only rather than Subject+Verb.Thus, we suggest change “…prior to or when **receiving ~~the UE receives~~** the.…”**Suggestion:** In summary, we suggest below changes to cover issue 1/2/3:“The OD-SSB transmission **activation/deactivation** indication **~~is~~can only be** transmitted **to a UE configured with SCell** prior to or when **receiving** **~~the UE receives~~** the SCell activation command. RRC and MAC-CE can indicate the activation/deactivation state of OD-SSB transmissions.” | Agree with issue 1. For issue 2 the sentence already mentions “SCell”, so it seems not needed to be mentioned twice. But I am fine to clarify. OK for the proposal for issue 3.  |
| A002 | Section 15.4.2.x1:**Issue:** As the current text captures the scenarios of OD-SSB (i.e. when MAC-CE can be used to activate/deactivate OD-SSB and when MAC-CE can be used for parameter adaptation), we think the below related RAN1 agreement needs to be captured as well:**Agreement (RAN1 #120bis)**For a cell supporting on-demand SSB SCell operation, for Case #1 (i.e., No always-on SSB on the cell)·       UE does not expect the OD-SSB transmission indicated by RRC/MAC-CE to be deactivated while the SCell is activated.**Suggestion:** we suggest to adding the following text at the end:“…. At least for the case when there is no always-on SSB on the SCell, OD-SSB transmission can’t be deactivated by RRC or MAC-CE while SCell is activated. | We usually do not list what is not supported, if we are to capture anything, I would do it in a more neutral way, e.g.:“When there is no always-on SSB on the SCell, the OD-SSB transmission is maintained while the SCell is activated. “[ER] the always on SSB is not defined so it would be better to avoid that term. Also, this may be more stage 3 and not needed here? |
| A003 | Section 15.4.2.x1**Issue:** The following RAN2 agreements on L3 RRM of OD-SSB are missed to be captured:1. In L3 measurement in OD-SSB case 1, if MAC-CE/RRC based activation / deactivation:

 • The UE starts L3 measurement towards the activated OD-SSB based on configured servingCellMO after reception of the activation. • The UE stops L3 measurements after it determines the OD-SSB is deactivated implicitly or explicitly. Spec impact can be further discussed in running CR preparation.1. The UE applies the OD-SSB specific SMTC when the OD-SSB is activated and SCell is activated. This decision does not impact RAN4 discussion whether both OD-SSB and AO-SSB can be measured.
2. When OD-SSB is activated, UE uses servingCellMO-OD to measure serving cell; when OD-SSB is deactivated, UE uses servingCellMO-AO (i.e., legacy servingCellMO) to measure serving cell.

**Suggestion:** we suggest to adding the following text as a separate paragragh at the end:“L3 measurement on OD-SSB is supported. When there is not always-on SSB (AO-SSB) in the SCell, the UE starts L3 measurement on OD-SSB after it is activated by MAC-CE/RRC and stops L3 measurement after OD-SSB is deactivated implicitly or explicitly. When AO-SSB and OD-SSB have the same centre frequency in the SCell, the UE applies the OD-SSB specific SMTC when the OD-SSB is activated and SCell is activated. When AO-SSB and OD-SSB have different centre frequency in the SCell, the UE uses a dedicated measurement object associated with the OD-SSB to perform L3 measurement on OD-SSB when OD-SSB is activated.”  | These agreements should be captured in 331 with clear UE behaviors because it looks like stage-3 text. In stage-2 it should be enough to capture a high-level description pointing to stage-3 like e.g. “L3 measurement on OD-SSB is supported as specified in TS38.331”.[ER] the always on SSB is not defined so it would be better to avoid that term. |
| A004 | Section 15.4.2.x3Adaptation of PRACH configurations in time domain is supported for 4-step RACH CBRA. Additional RACH resources are configured together with the common RACH resources in the same set of RACH resources, and the network can indicate whether the additional RACH resources are available**Issue 1:** As RAN1 agreed to support RACH adaptaiton of PDCCH-order CFRA, we need to capture the agreement:1. RAN2 confirms the newly introduced 1-bit indication in DCI 1\_0 for C-RNTI, i.e., PDCCH order, applies to both CBRA and CFRA.

**Issue 2:** the last sentence is not clear how the Network can indicate additional RACH resource is available. We suggest to add a reference to TS 38.213 or clearly add “via DCI 1-0 with RNTI or DCI 1-0 with C-RNTI” **Suggestion:** we suggest the following change:“Adaptation of PRACH configurations in time domain is supported for 4-step RACH CBRA and PDCCH-order CFRA in seving cell. Additional RACH resources are configured together with the common RACH resources in the same set of RACH resources, and the network can indicate whether the additional RACH resources are available as specified in Section 8.1 of TS 38.213 [38].” | Agree to add more cases of PRACH adaptation applicability according to the proposed TP. [ER] Another suggestion:Adaptation of PRACH configurations in time domain is supported for 4-step RACH CBRA. Furthermore, additional PRACH resource 1-bit indication in PDCCH-order applies to both CFRA and CBRA in the serving cell. Additional RACH resources are configured together with the common RACH resources in the same set of RACH resources, and the network can indicate whether the additional RACH resources are available as specified in Section 8.1 of TS 38.213 [38].”[rapp v10] Agree with this rewording.  |
| N001 | Regarding 7.3.1 first change. It seems bit wrong to state that SIB1 can be broadcast on deman upon OD-SIB1 request. NW can start broadcasting even before that if it wants. So in fact we should write sentence more from UE point of view that UE may request OD-SIB1 if the is not broadcasting OD-SIB and it has valid request configuration. And lots of text seems duplication of what we have in 15.4.2.x2 so maybe just reference to there is sufficient?Suggestion:- *SIB1* defines the scheduling of other system information blocks and contains information required for initial access. SIB1 is also referred to as Remaining Minimum SI (RMSI) and may be periodically broadcast on DL-SCH or sent in a dedicated manner on DL-SCH to UEs in RRC\_CONNECTED. NW may choose not to send SIB1 periodically and use OD-SIB1 as described in 15.4.2.x2.. | The idea here was to mimic the Other SI description, which is below. But after reading it now I realized that the option to provide SIB1 on demand should be more clearly stated, like in Other SI where the options are described after “can either be” and the same should be done here. Some rewording will be proposed to make it more similar to Other SI.  |
| N002 | The sentence on “upon receiving an OD-SIB request from UE supporting OD-SIB” seems to be missing some aspects as start of the paragraph talks about reducing transmissions but in fact sentence seems to imply we just add request transmission. Thus maybe better to highlight that instead of periodically transmitting sib1 one can use od-sib1?15.2.4.2.x2: To facilitate reducing gNB downlink transmissions, the gNB can provide SIB1 on-demand instead of always periodically transmitting SIB1. OD-SIB1 is supported for UEs in RRC\_IDLE, RRC\_INACTIVE and RRC\_CONNECTED when T311 is running. A request for SIB1 triggers a random access procedure, where MSG1 is used for indicating OD-SIB1 request and the gNB acknowledges the request in MSG2. OD-SIB1 request configurations of one or more cells which support OD-SIB1 are included in SIBxx, which can be broadcasted in any cell, including cell’s own OD-SIB1 request configuration. UE may request SIB1 based on the OD-SIB1 request configuration from SIBxx in order to determine the suitability of a cell during and after cell reselection. [OPPO] An alternative could be as follows, so that we do not lose information on UE requestTo facilitate reducing gNB downlink transmissions, instead of always periodically transmitting SIB1, the gNB can provide SIB1 on-demand, i.e., upon receiving an OD-SIB1 request from a UE supporting OD-SIB1. | I agree with Oppo that we should not lose the UE request part. The change is fine with keeping this part.  |
| v001 | 9.2.5 Paging**Paging adaptation for network energy saving** **for UEs in CM\_IDLE and RRC\_INACTIVE**: in order to increase gNB sleeping time, the value of N and Ns are extended to increase the number of POs per PF with sparser PFs. The UE supporting paging adaptation shall monitor PDCCH in POs separately signalled for paging adaptation, if configured. The UE supporting paging adaptation and PEI shall also monitor PEIs separately signalled for paging adaptation, if configured.[comment] According to legacy 38304, 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.the behavior of the UE capable of paging adaptation and PEI should be aligned with the legacy, i.e. UE ‘can’ monitor PEI, rather than ‘shall’15.4.2.x3 Common signal/channel transmissions adaptationFor adaptation of paging in time domain, the value range for parameter N is extended to make it possible to have increased interval between PFs. The value range for Ns, which is the number of paging occasions within one paging frame, is increased to compensate the decrease in the number of PFs. UEs supporting paging adaption and PEI monitor PEI according to the additional PEI configuration, if configured. [comment] Same comment as above, i.e. it should be ‘can monitor’  | Based on the following agreements I believe “should” is correct:* 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.

[vivo] No strong view on the R19 UE behavior. Just to clarify that the intention of the comment is to align the legacy and R19 UE behavior. At least the behavior of legacy other UE is not mandated to monitor PEI even when PEI-O is configured, and thus ‘can’ is used for the wording. We understand when RAN2 reached the R19 agreement above, no company has ever checked the legacy specification wording details. If other companies are all fine with ‘shall’, we follow majority.[rapp v10] After further checking we agree with the interpretation that it is not mandatory for a UE to monitor PEI, therefore this change will be implemented.  |
|   | 15.4.2.x2 On-demand SIB1To facilitate reducing gNB downlink transmissions, the gNB can provide SIB1 on-demand, i.e., upon receiving an OD-SIB1 request from a UE supporting OD-SIB1. OD-SIB1 is supported for UEs in RRC\_IDLE, RRC\_INACTIVE and RRC\_CONNECTED when T311 is running. A request for SIB1 triggers a random access procedure, where MSG1 is used for indicating OD-SIB1 request and the gNB acknowledges the request in MSG2. OD-SIB1 request configurations of one or more cells which support OD-SIB1 are included in SIBxx, which can be broadcasted in any cell, including cell’s own OD-SIB1 request configuration. UE may request SIB1 based on the OD-SIB1 request configuration from SIBxx in order to determine the suitability of a cell during and after cell reselection. [comment] The case for RRC\_CONNECTED when T311 is running is missing in the yellow high-lighted part. | The RRC state is not mentioned in this sentence, therefore I don’t see an issue with the current wording. It is clearly stated in this section that “OD-SIB1 is supported for UEs in RRC\_IDLE, RRC\_INACTIVE and RRC\_CONNECTED when T311 is running”.[ER]” During” is enough? |
| C001 | Adaptation of SSB in time domain is supported for SCells for UEs in RRC\_CONNECTED configured with carrier aggregation (CA). Multiple SMTC configurations can be configured to the UE, and the UE selects one SMTC based on the SSB adaptation indication via DCI. [Issue]: It is a bit confusion if SMTC selection is based on DCI or SSB adaptation indication is transmitted via DCI. In RAN2#129bis, it was agreed:* Not support MAC CE based signalling to indicate SSB adaptation in addition to DCI agreed in RAN1.

Hence, we propose change to:Adaptation of SSB in time domain is supported for SCells for UEs in RRC\_CONNECTED configured with carrier aggregation (CA). SSB adaptation is indicated via DCI. Multiple SMTC configurations can be configured to the UE, and the UE selects one SMTC based on the SSB adaptation indication ~~via DCI~~. | Agree to clarify what DCI is used for. |
| X001 | Section 15.4.2.x1**Issue:** The following RAN2 agreements on single OD-SSB on different frequency should be reflected. **Agreements on OD-SSB**1. RAN2 understands multiple OD-SSBs with the different frequencies for a given SCell is not supported.

**Suggestion:** the following text can be added:When AO-SSB and OD-SSB have different centre frequency in the SCell, only single OD-SSB on different centre frequency is supported.  | Agree to clarify this issue between always-on SSB and OD-SSB.[ER] Please use terminology for “AO-SSB” which does not introduce new name for existing SSB. |
| X002 | Section 15.4.2.5To align the wording in “If a cell provides SIB1 on-demand,…”Suggestion:If a cell provides on-demand SIB1, the cell can allow the access of UEs supporting OD-SIB1 but prevent the access of UEs not supporting OD-SIB1 based on no SIB1 indication in MIB as described in clause 7.3.1. | No strong view, can restructure it this way.[ER] OD-SSB is used in other specifications and this should be used here, and defined in acronyms |
| X003 | Section 15.4.2.x2In the sentence “To facilitate reducing gNB downlink transmissions, the gNB can provide SIB1 on-demand, i.e., upon receiving an OD-SIB1 request from a UE supporting OD-SIB1.”, “i.e.” seems not needed. Also better to align the wording of “on-demand SIB1”Suggestion:To facilitate reducing gNB downlink transmissions, the gNB can provide on-demand SIB1 upon receiving an OD-SIB1 request from a UE supporting OD-SIB1. | Same as above. [ER] OD-SSB is used in other specifications and this should be used here, and defined in acronyms |
| ER1 | Further comment on below. In 38.321 with the term indication is used what MAC CE sepects something among >1 options, and activation/deactivation when something is activation/deactivation. RAN1 may have used these terminology in a mixed way but it is suggested that the term indication is not used here where activation/deactivation is used: “The OD-SSB transmission **activation/deactivation** indication **~~is~~can only be** transmitted **to a UE configured with SCell** prior to or when **receiving** **~~the UE receives~~** the SCell activation command. RRC and MAC-CE can indicate the activation/deactivation state of OD-SSB transmissions.”This should read:“The OD-SSB transmission **activation/deactivation** command **~~is~~can only be** transmitted **to a UE configured with SCell** prior to or when **receiving** **~~the UE receives~~** the SCell activation command. Both RRC and MAC-CE can be used for signaling the activation/deactivation state of OD-SSB transmissions.” | [rapp v10] Agree with the change.  |
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