3GPP RAN WG2 Meeting #131bis R2-25xxxxx

Prague, Czech Republic, 13th – 17th October, 2025

Agenda Item: 8.5.1

Source: Huawei, HiSilicon

Title: Remaining stage-2 open issues for NES enh.

Document for: Discussion, Decision

# Introduction

The following document includes a list of open issues according to the following email discussion:

* [POST131][108][NES] (Huawei)

 **Scope:** Update NES 38.300 CR (including this meeting agreements also) with RAN3 CR merged.

**Intended outcome:** 38.300 CR in R2-2506219 to be agreed.

**Deadline:**

1. Initial list of open issues by rapporteur, proposed resolutions for easy open issues or resolution options for other issues: **sept. 19th**
2. Input from other companies and final set of proposals and resolutions for identified issues that don’t require contribution input: **Oct. 1st**

NOTE: no contributions from other companies expected

# Remaining open issues for specification 38.300

**Open issue 38.300-1:*****measurement gap behaviour for OD-SSB***

**Issue description:** Capturing measurement gap behaviour for OD-SSB, either in a Note, or by normative text. Clarification what is the meaning of “SSB associated to the initial DL BWP” in the measurement gap section in 9.2.4, whether it refers to AO-SSB or OD-SSB.

Possible options to resolve the issue:

1. Normative text as e.g. provided by rapp in CR v04 (Appendix TP1)
2. Note as e.g. provided by in the collection of comments in Apple001 (Appendix TP2)
3. No modification of the measurement gap paragraph

Companies are invited to provide feedback regarding the above open issue and possible proposed resolution:

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| **Company and comment ID (e.g. HW01)** | **detailed comments/suggestions** | **Rapporteur response** |
| OPPO01 | Considering R1 specWhen the first SS/PBCH blocks in a configured DL BWP can be used to obtain *SIB1* and the frequency location of the first SS/PBCH blocks corresponds to the GSCN of a synchronization raster entry, the UE expects - a frequency location of the second SS/PBCH blocks to be different from the frequency location of the first SS/PBCH blocks and not to correspond to the GSCN of a synchronization raster entry- frequency resources of the second SS/PBCH blocks not to overlap with frequency resources of the first SS/PBCH blocks - the second SS/PBCH blocks to be within the configured DL BWP as the first SS/PBCH blocks- the second SS/PBCH blocks are not used to obtain *SIB1*When the first SS/PBCH blocks in a configured DL BWP cannot be used to obtain *SIB1*, the UE expects - a same frequency location for the second SS/PBCH blocks and for the first SS/PBCH blocks- a same PBCH payload, other than the SFN index and the half frame index, for a first SS/PBCH block, from the first SS/PBCH blocks, and for a second SS/PBCH block, from the second SS/PBCH blocks, with same SS/PBCH block index as the first SS/PBCH blockThere seems no case that AO/OD-SSB are not in same BWP for SSB-based Scell. So our proposal for this issue isProposal1: R2 not pursue change on the intra-frequency measurement gap provision condition for SSB-based SCell case, considering R1 conclusion on AO/OD-SSB intra-BWP collocation restriction.Proposal2: For SSB-less SCell, R2 not pursue the case where servingCellMO-OD is separately configured, i.e., limit to the case where the ssbFrequency in the servingCellMO (within servingCellConfig) and the SSB frequency for OD-SSB is the same.Proposal3: For the intra-frequency measurement gap provision condition for SSB-less SCell, R2 not pursue further change on measurement gap provision condition. |  |
| Xiaomi01 | We agree with OPPO that RAN1 agreed AO-SSB and OD-SSB are on the same BWP, however, if AO-SSB and OD-SSB are on different frequency, it is still necessary to clarify which SSB frequency is utilized to determine the necessity of measurement gap considering the condition is “if any of the UE configured BWPs do not contain the frequency domain resources of the SSB associated to the initial DL BWP”. We prefer to adopt the note from Apple.  |  |
| Apple01 | 1. According to latest 38.213 (quoted by OPPO), it is clear that “in the same BWP” just means the active BWP to receive SIB1. It doesn’t mean all the non-active BWPs need to include both AO-SSB and OD-SSB (which is the concern of measurement gap). [OPPO] here I think there is a gap in terms of R1 conclusion. Our understanding is that (as quoted by our reply above)1. For configured BWP with CD-SSB on sync raster (i.e., “a configured DL BWP can be used to obtain *SIB1* and the frequency location of the first SS/PBCH blocks corresponds to the GSCN of a synchronization raster entry”): same BWP restriction applied (i.e., “the second SS/PBCH blocks to be within the configured DL BWP as the first SS/PBCH blocks”)
2. For configured BWP with NCD-SSB (i.e., “the first SS/PBCH blocks in a configured DL BWP cannot be used to obtain *SIB1*”): even stricter limitation, i.e., AO/OD-SSB on the same frequency (i.e., “ a same frequency location for the second SS/PBCH blocks and for the first SS/PBCH blocks”)
3. For configured BWP with CD-SSB not on sync raster: not supported

So we do not see a missing case here (meaning there is no case, for a SSB-based Scell, there is a configured BWP, which covers one SSB but not the other).2. We confirm this understranding with our RAN1 colleague. If “in the same BWP” means all BWPs (active and non-active BWPs), it will mandate NW to always configure OD-SSB for all BWPs with AO-SSB (even in non-active BWPs), which is strong NW configuraiton restriction. Meanwhile, in current spec, up to 5 BWPs (i.e. one initial BWP and 4 UE dedicated BWPs) can be configured, it has a large signlaing overhead. Our RAN1 colleague told me that RAN1 never discussed such solution. 3. We also agree with Xiaomi. No matter how to understand RAN1 agreement, a NOTE for clarification is necessary and has no harm (Appendix 2). Although nomative text (Appendix 1) is also fine to us, we feel it will be more difficulty to be agreed because it is not a new UE behaviro (but just a clarificaiton for existing specfication).   |  |
| CATT01 | We agree with Apple that there will be significant limitations on the frequency of AO-SSB and OD-SSB included in all BWP, so additional clarification is needed. Regarding TP1 and TP2, we think that when at least one SSB is covered by the BWP, measurement gap configuration should be optional. Therefore, we support Appendix TP2. |  |
| Huawei, HiSilicon | We also prefer a note as a compromise, considering companies are not interested in modifying the procedure texts directly.Capturing something clearly in RAN2 can avoid referring to RAN1 spec, it is useful for implementers to have a clear understanding when configuring measurement gaps.Also, from network perspective, ensuring all BWPs to contain OD-SSB and AO-SSB is too restrictive. Why NW has to always configure OD for each BWP, if it only needs one OD for one BWP? |  |
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**Rapporteur summary:**

5 companies provided responses to 38.300-1. From the 3 options, 4 companies support adding a Note as a compromise solution, therefore the rapporteur proposes:

**Proposal 1 (4/5): Add the following Note in 38.300 for gap determination:**

NOTE x: When the serving cell is associated with both SSB and OD-SSB in different frequency, “the SSB associated to the initial DL BWP” includes both SSB and OD-SSB.

**Open issue 38.300-2:*****Capturing that OD-SSB and AO-SSB is always configured in the same BWP***

**Issue description:** RAN1 has concluded that both AO-SSB and OD-SSB are always located in the same BWP, which is not captured in RAN2 specs. In rapporteurs view, a clarification should be added that OD-SSB and AO-SSB is always configured in the same BWP.

Companies are invited to provide feedback regarding the above open issue and possible proposed resolution (whether and where to capture the RAN1 agreement: 38.300 or 38.331):

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| **Company and comment ID (e.g. HW01)** | **detailed comments/suggestions** | **Rapporteur response** |
| OPPO01 | As above, it has been captured in R1 spec, no need to do that for R2 spec in our view. |  |
| Xiaomi01 | No strong view. Maybe better to also clarify in stage 2 for R2 people to refer to.  |  |
| Apple01 | As we comment before, 38.213 has captured it (i.e. 2nd SSB is within the same BWP to receive SIB1 as 1st SSB). So, 38.300 don’t need to capture it.  |  |
| CATT01 | No strong view. |  |
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**Rapporteur summary:**

4 companies provided responses to 38.300-2. It has been noted that the RAN1 agreement is already captured in the RAN1 specification, therefore there is no strong need to capture it in RAN2.

# Other identified open issues

Companies are invited to describe any other identified open issues not currently included within this document.

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| **Company and comment ID (e.g. HW01)** | **Other identified open issues (please describe)** | **Rapporteur response** |
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**Rapporteur summary:**

No new issues have been identified.

# Conclusions

The following proposals have been provided based on feedback to the above document:

**Proposal 1 (4/5): Add the following Note for gap determination:**

NOTE x: When the serving cell is associated with both SSB and OD-SSB in different frequency, “the SSB associated to the initial DL BWP” includes both SSB and OD-SSB.

# References

# Appendix

## TP1 for normative text

- If the serving cell is associated with SSB, other than the initial BWP, if any of the UE configured BWPs do not contain the frequency domain resources of the SSB associated to the initial DL BWP, and are not configured with NCD-SSB for serving cell measurement, or any of the UE configured BWPs do not contain the frequency domain resources of the OD-SSB associated to the serving cell;

## TP2 for Note

* If the serving cell is associated with SSB, other than the initial BWP, if any of the UE configured BWPs do not contain the frequency domain resources of the SSB associated to the initial DL BWP, and are not configured with NCD-SSB for serving cell measurement;

NOTE 4: when the serving cell is associated with both SSB and OD-SSB in different frequency, “the SSB associated to the initial DL BWP” includes both SSB and OD-SSB.