3GPP TSG-RAN WG2 Meeting #119 Electronic R2-220xxxx

Elbonia, 17 – 26 August 2022

**Agenda item: 6.2.2.1**

**Source: Nokia (Rapporteur)**

**Title: Offline 222 – MAC/PDCP corrections to DCCA**

**WID/SID: LTE\_NR\_DC\_enh2-Core - Release 17**

**Document for: Discussion and Decision**

# 1 Introduction

This document is the report of the following email discussion:

By Email [222] (3+3+2+1+1)

SCell activation/deactivation actions in MAC:

[R2-2207011](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207011.zip) MIscellaneous Corrections for SCG activation\_deactivation Samsung Electronics Co., Ltd draftCR Rel-17 38.321 17.1.0 LTE\_NR\_DC\_enh2-Core

[R2-2208465](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2208465.zip) Correction for activation/deactivation of SCells Xiaomi draftCR Rel-17 38.321 17.1.0 LTE\_NR\_DC\_enh2-Core

[R2-2208650](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2208650.zip) Correction on SCG deactivation Huawei, HiSilicon CR Rel-18 38.321 17.1.0 1396 - F NR\_mob\_enh2-Core

* Revised in R2-2208697

R2-2208697 Correction on SCG deactivation Huawei, HiSilicon CR Rel-17 38.321 17.1.0 1396 1 F LTE\_NR\_DC\_enh2-Core

Beam failure actions when in deactivated SCG:

[R2-2207966](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207966.zip) [E129] Stop/resume BFD at beam failure for deactivated SCG Ericsson discussion [R2-2205797](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2205797.zip)

[R2-2207852](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207852.zip) Correction of BFD procedure for deactivated PSCell Sharp discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2207853](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207853.zip) CR related to BFD mechanism for deactivated PSCell Sharp CR Rel-17 38.321 17.1.0 1355 - F LTE\_NR\_DC\_enh2-Core

BWP operation:

[R2-2207854](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207854.zip) Remaining issues for BWP operation in deactivated SCG Sharp discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2207855](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207855.zip) CR on 38.321 for Remaining issues for BWP handling in deactivated SCG Sharp CR Rel-17 38.321 17.1.0 1356 - F LTE\_NR\_DC\_enh2-Core

Activation of BFD/RLM in deactivated SCG:

[R2-2207541](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207541.zip) Clarification on BFD while PSCell is deactivated Nokia, Nokia Shanghai Bell CR Rel-17 38.321 17.1.0 1322 - F LTE\_NR\_DC\_enh2-Core

MAC/PDCP modelling issues:

[R2-2207393](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207393.zip) Discussion on MAC and PDCP Aspects CATT discussion Rel-17 LTE\_NR\_DC\_enh2-Core

### 6.2.4 Temporary RS for SCell activation

Including essential corrections to of temporary RS for SCell activation..

By Email [222] (2)

[R2-2207542](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_119-e/Docs/R2-2207542.zip) Corrections MAC regarding TRS activation Nokia, Nokia Shanghai Bell CR Rel-17 38.321 17.1.0 1323 - F LTE\_NR\_DC\_enh2-Core

[R2-2207788](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_119-e/Docs/R2-2207788.zip) Correction to TRS for fast SCell activation vivo CR Rel-17 38.321 17.1.0 1340 - F LTE\_NR\_DC\_enh2

Email discussions ([222])

* [AT119-e][222][DCCA] MAC/PDCP corrections to DCCA (Nokia)

      Scope: Discuss NR and LTE MAC/PDCP corrections for DCCA marked for this discussion.

 Intended outcome: Report in in [R2-2208758](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2208758.zip). Merged CR (if needed) in [R2-2208759](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2208759.zip).

 Deadline: Deadline 1 (report) / Deadline 2 (final CRs)

# 2 Contact Points

Respondents to the email discussion are kindly asked to fill in the following table.

|  |  |  |
| --- | --- | --- |
| Company | Name | Email Address |
| Nokia (Rapporteur) | Jarkko Koskela | jarkko.t.koskela@nokia.com |
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| CATT | Erlin Zeng | erlin.zeng@catt.cn |
| MediaTek | Felix Tsai | chun-fan.tsai@mediatek.com |
| DENSO | Daiki Maemoto | daiki.maemoto.j7w@jp.denso.com |
| Spreadtrum | Min Xu | Ellen.xu@unisoc.com |

# 3 Discussion

[R2-2207011](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207011.zip) MIscellaneous Corrections for SCG activation\_deactivation Samsung Electronics Co., Ltd draftCR Rel-17 38.321 17.1.0 LTE\_NR\_DC\_enh2-Core

Reason for change for the paper:

*Issue 1:*

*In section 5.9, conditions for applying SCell deactivation procedures are*

* *a) if an SCell Activation/Deactivation MAC CE or an Enhanced SCell Activation/Deactivation MAC CE is received deactivating the SCell*

* *b) if the sCellDeactivationTimer associated with the activated SCell expires*

*The condition ‘if the SCG associated with the activated SCell is deactivated’ is missing.*

*Issue 2:*

*In section 5.12, reset operation are defined only for the case reset of the MAC entity is requested by upper layers. However, MAC itself may initate MAC reset (see section 5.29).*

*Issue 3:*

*Section 5.15.1 specifies that for active BWP, UE transmit on UL-SCH on the BWP; transmit on RACH on the BWP, if PRACH occasions are configured; monitor the PDCCH on the BWP; transmit PUCCH on the BWP, if configured; report CSI for the BWP; transmit SRS on the BWP, if configured;*

*On the other hand section 5.29 specifies that when SCG is deactivated, for PSCell, UE does not transmit on UL-SCH; does not transmit on RACH; monitor the PDCCH on the BWP; does not transmit PUCCH on the BWP; does not report CSI; does not transmit SRS. This is contradictory operation for active BWP of PSCell. Note that when SCG is deactivated BWP is not deactivated.*

Changes are as following:

*For issue 1 condition ‘if the SCG associated with the activated SCell is deactivated’ is added. For issue 2, it is clarified in section 5.12 that reset operation are also applied when reset is initiated by MAC itself upon SCG deactivation. For issue 3 calrified that for activated BWP of PSCell, UL-SCH/RACH/PDCCH/PUCCH/SRS/CSI report related operation are performed only if SCG is activated.*

Issue1 and Issue2 seems to be clarirications that seems useful. Issue3 seems to be not existing as the first condition in the 5.29 states that operation is only applicable for activated serving cell. Thus adding these conditions does not seem necessary.

Please note that also this paper consider Issue1 (revision not available):

[R2-2208650](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2208650.zip) Correction on SCG deactivation Huawei, HiSilicon CR Rel-18 38.321 17.1.0 1396 - F NR\_mob\_enh2-Core

* Revised in R2-2208697

R2-2208697 Correction on SCG deactivation Huawei, HiSilicon CR Rel-17 38.321 17.1.0 1396 1 F LTE\_NR\_DC\_enh2-Core

**Question 1**: Do you agree on Issue1 and solution provided (if you prefer Huawei or Samsung one please indicate)?

|  |
| --- |
| Answers to Question 1 |
| Company | Yes/No | Technical Arguments |
| Huawei, HiSilicon | Yes but | in Samsung TP, "or" is missing at the end of the bullet before the added bullet |
| OPPO | Yes  | “or” is needed. |
| Xiaomi | Yes | Prefer Samsung TP, but “or” is needed. |
| Intel | Yes | “or” is missing |
| LGE | Yes | Prefer Samsung TP, but as Huawei mentioned, "or" is missing. |
| vivo | Yes | Prefer Samsung TP.  |
| Ericsson | Yes |  |
| Docomo | Yes | Prefer Samsung TP. As many companies comment, “or” is needed. |
| Qualcomm | Yes | The Samsung TP is fine, with the added “or” as Huawei has pointed out. |
| Futurewei | Yes |  |
| CATT | Yes | We prefer Samsung TP. |
| MediaTek | Yes |  |
| DENSO | yes | Prefer Samsung TP, but as Huawei mentioned, "or" is missing. |
| Spreadtrum | Yes | Prefer Samsung’s TP and add “or”. |

**Summary 1**: Samsung TP seems agreeable with added “or”.

**Proposal 1**: Agree to handle issue one as described in [R2-2207011](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207011.zip) with added “or” and merge it to MAC CR

**Question 2**: Do you agree on Issue2 and its solution?

|  |
| --- |
| Answers to Question 2 |
| Company | Yes/No | Technical Arguments |
| Huawei, HiSilicon | Yes but | would suggest a single bullet as follows: "If the SCell is an SCG SCell and the SCG is deactivated" (it is unclear whether "activated SCell" is a way to exclude the deactivated SCell or not). |
| OPPO | Yes  |  |
| Xiaomi | Yes |  |
| Intel | Yes | agree with Huawei’s suggestion |
| LGE | Yes but | The text can be simpler, as "If a reset of the MAC entity is requested by upper layers or by the MAC entity itself". |
| vivo | Yes |  |
| Ericsson  | Yes |  |
| Docomo | Yes |  |
| Qualcomm | Yes | The change in Section 5.12 looks fine. |
| Futurewei | Yes |  |
| CATT | Yes, and see comments | we agree this is an issue, as also proposed in our paper R2-2207393, we found it may be simpler to just change “If a reset of the MAC entity is requested by upper layers” to “If a reset of the MAC entity is requested”.  |
| MediaTek | yes |  |
| DENSO | Yes |  |
| Spreadtrum | Yes |  |

**Summary 2**: Everyone agrees to solve issue2 in R2-2207011. Some comments seems to comment on 5.15.1 change and text in R2-220711 for 5.12 seems agreeable.

**Proposal 2**: Section 5.12 change as shown in R2-220711 is agreed and merge it to MAC CR

**Question 3**: Do you agree on Issue3 and its solution?

|  |
| --- |
| Answers to Question 3 |
| Company | Yes/No | Technical Arguments |
| Huawei, HiSilicon | Yes but | - why are the next sub-bullets not included?- if 15.1 is to be applied for all serving cells, shouldn't there be the case of the PSCell while the SCG is deactivated? E.g. after "if a BWP is deactivated" add "or the Serving Cell is the PSCell and the SCG is deactivated"?Besides, the wording could be improved (missing "an" before SCell, missing "the" before PSCell and before SCG, missing "if" before "the SCG"). It could also be simplified as "if the SCG is activated or if the Serving Cell is not the PSCell" |
| OPPO | No  | There is active BWP if SCG is deactivated? |
| Xiaomi | No |  |
| Intel | No |  |
| LGE | No | We have similar view with rapporteur.  |
| vivo | No | Same question as OPPO. |
| Ericsson | Yes, but | agree with the comments from Huawei |
| Docomo | No | Agree with Rapporteur. The existing text is enough. |
| Qualcomm | Yes | Agree with Huawei. |
| Futurewei | Yes | Agree with Huawei comments. |
| CATT | Yes | Agree with Huawei comment that PCell in SCG is missing.  |
| MediaTek | Yes | And agree with comment from Huawei |
| DENSO | No |  |
| Spreadtrum | No |  |

**Summary 3**: Opinions on this are bit divided. Although 5.29 covers this somewhat it might be better to clarify to avoid issues in future. It seems also it is not clear how BWP is handled when SCG is deactivated – is the BWP deactivated or activated? If one is to agree Samsung TP (e.g. with Huawei change) but it is also likely needed that all the sub-bullets are included. This could e.g. be achieved by adding new condition on level 1 like shown below but hen likely we would need changes to 5.29 as well to handle that BWP is deactivated/activated:

1> if a BWP is activated and the active DL BWP for the Serving Cell is not the dormant BWP; and

 1> if the SCG is activated or if the Serving Cell is not the PSCell:

2> transmit on UL-SCH on the BWP;

2> transmit on RACH on the BWP, if PRACH occasions are configured;

2> monitor the PDCCH on the BWP;

2> transmit PUCCH on the BWP, if configured;

2> report CSI for the BWP;

2> transmit SRS on the BWP, if configured;

2> receive DL-SCH on the BWP;

2> (re-)initialize any suspended configured uplink grants of configured grant Type 1 on the active BWP according to the stored configuration, if any, and to start in the symbol according to rules in clause 5.8.2;

2> if *lbt-FailureRecoveryConfig* is configured:

3> stop the *lbt-FailureDetectionTimer*, if running;

3> set *LBT\_COUNTER* to 0;

3> monitor LBT failure indications from lower layers as specified in clause 5.21.2.

**Proposal 3**: Continue discussing BWP handling when SCG is deactivated.

[R2-2208465](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2208465.zip) Correction for activation/deactivation of SCells Xiaomi draftCR Rel-17 38.321 17.1.0 LTE\_NR\_DC\_enh2-Core

Reason for change:

*According to the current MAC spec, upon configuration of a SCell, the SCell is activated if the parameter sCellState is set to activated. Otherwise the SCell is deactivated. While the SCG is deactivated, all SCG SCell(s) are in deactivated. However, when the SCG state is changed from ‘deactivated’ to ‘activated’, current MAC spec has not specified how to manage SCell(s) of the SCG. So the UE behaviour for SCells of SCG is unclear upon SCG activation*

Summary of change:

*Upon SCG activation, the SCell is deactivated unless the parameter sCellState is set to activated for the SCell by upper layers*

It seems for the rapporteur that this is already clear as all the scells of SCG are deactivated when SCG is deactivated as per 5.29. But there is nothing wrong with the change either.

**Question 4**: Do you agree that upon SCG activation unless *sCellState* is set to activated SCells of SCG are deactivated and corresponding CR change?

|  |
| --- |
| Answers to Question 4 |
| Company | Yes/No | Technical Arguments |
| Huawei, HiSilicon | No | SCells were previously configured and deactivated at SCG deactivation or added as deactivated so their state is clear |
| OPPO | No  | Agree with Huawei. |
| Xiaomi | Yes | When SCG is deactivated, all the SCells of SCG is deactivated. But when SCG state is changed from ‘deactivated’ to ‘activated’ (i.e. in NR-DC, the *RRCReconfiguration* received by UE does not include the *scg-State* and the SCG was deactivated before the reception of *RRCReconfiguration*), the state of SCell(s) of SCG are unclear. So, upon SCG activation, whether to activate SCell of SCG or keep SCell in a deactivated state needs to be specified explicitly.An efficient way for the issue is to activate or deactivate SCells of SCG based on *sCellState* in the corresponding configuration of SCell when activing the SCG. When activating SCG, the SCell of SCG can be considered to be activated, if *sCellState* is set to ‘activated’ for the SCell. Otherwise the SCell is deactivated. |
| Intel | Yes | no harm to make it clear |
| LGE | No | Same view with Huawei. |
| vivo | Yes  | sCellState can be included in the HO, RRC resume and when activating the deactivated SCG including this SCell. If included, SCG SCells should be activated. If not included, in these cases, SCG SCells should be deactivated. And “configuration of an SCell” may not be able to cover these cases.  |
| Ericsson | No | Agree with Huawei. |
| Docomo | No | Agree with Huawei, and we think it is enough that the delta is specified. |
| Qualcomm | No | Agree with Huawei. |
| Futurewei |  | No strong opinion. Current spec. also covers the case that some SCell is also activated at the SCG activation. But make it clear is also fine. |
| CATT | No | Agree with Huawei’s comments.  |
| MediaTek | No |  |
| DENSO | No | Agree with Huawei’s comments.  |
| Spreadtrum | Yes | It could be clear for the SCG SCell’s state when activating SCG. |

**Summary 4**: It seems there is some division in opinions here. For rapporteur anyway most companies seem to think it is clear that SCells are deactivated whenever SCG is deactivated and stay that way unless configured/activated by NW..

**Proposal 4**: Not agree R2-2208465.

[R2-2207966](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207966.zip) [E129] Stop/resume BFD at beam failure for deactivated SCG Ericsson discussion [R2-2205797](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2205797.zip)

*However, our understanding of the RAN2#117e agreement to stop BFD at beam failure of deactivated SCG was to save UE power by stopping the beam failure indication from the physical layer, since otherwise the UE may still continuously monitor the DL beams. The text in the first yellow part (i.e., if beam failure of the PSCell has not been indicated to upper layers since the SCG was deactivated) seems to hint that the condition BFI\_COUNTER >= beamFailureInstanceMaxCount could be satisfied a couple of times during SCG deactivation, which may only happen if BFI is still received from the lower layer. This is counter-intuitive, since a smart UE implementation should stop monitoring DL beams to save energy and so beam failure instance indication from the lower layers should be stopped.*

*RAN2 can correct the error and mandate that the UE shall stop beam failure indication from the physical layer. At this late stage of Rel-17 correction, it may lead to further unnecessary discussions since companies could interpret the RAN2#117e agreement differently. A simplified approach is to add a note in section 5.17 of 38.321 to allow a smart UE implementation by stopping lower layer beam failure indication while BFI\_COUNTER >= beamFailureInstanceMaxCount for deactivated SCG. A text proposal is provided in Annex A1.*

1. *Add a note in TS 38.321 that* *the UE may stop lower layer beam failure indication while* *BFI\_COUNTER >= beamFailureInstanceMaxCount for deactivated SCG.*

[R2-2207852](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207852.zip) Correction of BFD procedure for deactivated PSCell Sharp discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2207853](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207853.zip) CR related to BFD mechanism for deactivated PSCell Sharp CR Rel-17 38.321 17.1.0 1355 - F LTE\_NR\_DC\_enh2-Core

Sharp has quite similar topic as the Ericsson papers but slightly different approach how to solve this possible issue.

***Observation 1. In current RRC spec, RRC indicates RAN2 should discuss how to capture the mechanism of BFD stop/resume.***

***Proposal 1. RAN2 should discuss whether the entity which RRC indicates to stop beam failure detection is MAC or PHY.***

***Observation 2. For stopping BFD, RAN1 spec should be changed.***

***Observation 3. if RRC does not indicate to MAC to stop BFD for PSCell, MAC will reset BFI\_COUNTER by expiration of beamFailureDetectionTimer. Then, UE may perform RACh-less activation upon receiving SCG activation command even if beam failure is declared while SCG is deactivated.***

***Proposal 2. RRC should indicate to “MAC” to stop/resume BFD for PSCell.***

***Proposal 3. If UE stops BFD as alt 1, R2-2207853 should be approved.***

***Observation 4. If UE stops BFD as alt 1, MAC should indicate to PHY to stop BFD and not stop its own BFD procedure.***

***Observation 5. Current spec is not align with RAN2 agreements.***

***Proposal 4. RRC should indicate to MAC to stop BFD when receives the indication indicating that beam failure is declared on PSCell.***

[R2-2207541](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207541.zip) Clarification on BFD while PSCell is deactivated Nokia, Nokia Shanghai Bell CR Rel-17 38.321 17.1.0 1322 - F LTE\_NR\_DC\_enh2-Core

Proposes to *Add explanation in the section 5.17 that the BFD can be performed for PSCell while the SCG is activated or while the SCG is deactivated and bfd-and-RLM with value true is configured*

From rapporteur perspective there indeed seems to be a small issue of UE possibly continuing BFD and there seems to be various ways to solve this

**Question 5**: Do you agree upon issue/unclariyt of continuing BFD even if it should not, and if you agree any preference how to solve it?

|  |
| --- |
| Answers to Question 5 |
| Company | Yes/No | Technical Arguments |
| Huawei, HiSilicon | See comment | - Strongly prefers the TP in R2-2207966 (Ericsson) rather than R2-2207852/R2-2207853 (Sharp), because it is much simpler- With respect to R2-2207541 (Nokia): adding a sentence could be useful but "can be performed while the SCG is activated" is unclear and it is a bit strange to mention only the PSCell while this is the case for all serving cells. Perhaps the sentence could be "When the SCG is deactivated, the UE performs beam failure detection on the PSCell if and only if bfd-and-RLM is configured to true". |
| Sharp | See comment | - With respect to R2-2207966 (Ericsson): If UE stops lower layer beam failure indication based on the CR, due to the lack of beam failure instance indication, MAC entity will reset *BFI\_COUNTER* by expiration of *beamFailureDetectionTimer*. In this case, UE may perform RACH-less activation upon SCG activation command without *reconfigurationWithSync*. Furthermore, this note does not capture the procedure of BFD stopping if *bfd-and-RLM* with value false is configured.- With respect to R2-2207541 (Nokia): If this CR implies that MAC procedure (beam failure detection and recovery procedure) is stopped while the SCG is deactivated, MAC does not set *BFI\_COUNTER* to 0 at the time that *beamFailureDetectionTimer* expires or any of the parameter (including BFD-RS) is reconfigured. Therefore, if BFD-RS is changed upon SCG activation, MAC may indicate beam failure of the PSCell to upper layer in resumed BFD procedure. |
| OPPO | Comments  | 1>agree the TP in R2-2207966 (Ericsson);2>agree the intension, but the wording need to improve. There is no BFR for deactivated SCG case.For the PSCell, the beam failure detection and recovery procedure can be performed while the SCG is activated and, if *bfd-and-RLM* with value *true* is configured, while the SCG is deactivated (as specified in 5.29). |
| Xiaomi | See comment | Prefer Ericsson TPWe also think the explanation in 5.17 is needed. HW’s wording may be better. |
| Intel | Yes | ok with Ericsson TP and HW rewording |
| LGE | Yes,  | Agree that there are some hole/unclarity in the current specification, and we think R2-2207966 (Ericsson) and R2-2207541 (Nokia) cam be simple way to resolve them.Regarding R2-2207853 (Sharp), RAN2 already agreed "Do not capture BFD stop/resumption in TS 38.331 for now” in RAN2#118-e, so this solution is not preferred as long as there are simple solutions. |
| vivo | Yes | ok with Ericsson TP and HW rewording. |
| Ericsson | Yes | As we mention in our paper, we think stopping the BFD should be captured in the specifications, as it enables UE to battery savings for the deactivated SCG, which the motive of deactivated SCG. We prefer to capture this with a note in 38.321 as in our CR, since it does not mandate UE to do anything. With regards to the comments from Sharp on the note in R2-2207966, the case of *bfd-and-RLM* with value *false* seems not relevant, since in that case BFD will not be indicated to higher layers, and the note does not apply. For the issue with the BFD timer, we can discuss exact formulation to avoid inconsistency. One possibility is to change to the following: “NOTE: After beam failure is indicated to upper layers, the UE may stop the *beamFailureRecoveryTimer* and lower layer beam failure indication while *BFI\_COUNTER* >= *beamFailureInstanceMaxCount* for the deactivated SCG.With regards to the Nokia CR, we think it is already clear from the field description in 38.331, but we can accept clarifying also in 38.321, with the changed wording proposed by Huawei. |
| Docomo | Yes | We support Ericsson’s TP and Huawei’s wording. |
| Qualcomm | Yes | Prefer the TP from Ericsson (R2-2207966) rather than the TP from Sharp. The Ercisson paper involves less complexities.Regarding the TP from Nokia (R2-2207541), agree with Huawei’s comment and the sentence suggested by Huawei seems better. |
| Futurewei | Yes | Agree on the change with Huawei’s rewording. |
| CATT | Yes | Prefer Ericsson TP, as well as Huawei’s suggested wording.  |
| MediaTek | Yes | Okay with Ericsson TP + Nokia CR with Huawei’s rewording |
| DENSO | Yes | ok with Ericsson TP and HW rewording. |
| Spreadtrum | Yes | Prefer Ericsson TP and Huawei’s wording. |

**Summary 5**: Ericsson TP seems preferred to solve the BFD handling (i.e. note) but like Ericsson commented in their comment to handle Sharp issue it might be better to reword the NOTE as proposed by Ericsson (but correcting the timer to *beamFailureDetectionTimer*.Also it seems OK to have Nokia proposal with changed wording to “When the SCG is deactivated, the UE performs beam failure detection on the PSCell if and only if bfd-and-RLM is configured to true”.

**Proposal 5**: Merge ericsson TP R2-2207966 with modified Note “NOTE: After beam failure is indicated to upper layers, the UE may stop the *beamFailureDetectionTimer* and lower layer beam failure indication while *BFI\_COUNTER* >= *beamFailureInstanceMaxCount* for the deactivated SCG” to MAC CR **and** and merge Nokia TP R2-2207541 with changed wording “When the SCG is deactivated, the UE performs beam failure detection on the PSCell if and only if bfd-and-RLM is configured to true” to MAC CR

BWP operation:

[R2-2207854](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207854.zip) Remaining issues for BWP operation in deactivated SCG Sharp discussion Rel-17 LTE\_NR\_DC\_enh2-Core

[R2-2207855](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207855.zip) CR on 38.321 for Remaining issues for BWP handling in deactivated SCG Sharp CR Rel-17 38.321 17.1.0 1356 - F LTE\_NR\_DC\_enh2-Core

Reason for change:

*According to the latest MAC spec, upon the reception of RRC (re-)configuration signalling with firstActiveDownlinkBWP-Id for PSCell when SCG is deactivated, UE switches the DL BWP to the firstActiveDownlinkBWP-Id. If this DL BWP is not an active BWP, the UE will not assess radio link quality according to the current PHY spec. In this case, the physical layer in the UE might not provide an indication for RLM/BFD to higher layers regardless of higher layer configuration of RLM/BFD, and the UE might not perform RLM/BFD on the DL BWP correctly.*

Change:

*Modify the definition of BWP switching “The BWP switching for a Serving Cell is used to activate an inactive BWP and deactivate an active BWP at a time.”.*

Rapporteur thinks that Sharp considers that there is some problem about BWP handling and switching BWP to correct one. Unfortunately it was not clear what is the issue

**Question 6**: Do you see issue in handling BWP switching upon SCG deactivation and BFD handling? And if you do how do you prefer to solve it?

|  |
| --- |
| Answers to Question 6 |
| Company | Yes/No | Technical Arguments |
| Huawei, HiSilicon | No | We have difficulties to understand the reasoning here.Does it rely on the understanding that the DL BWP for BFD/RLM and RRM measurements is not considered as "activated" while the SCG is deactivated?Supposing we do a correction to 15.1 as proposed by Samsung but include the case of this BWP as activated in 15.1 (but with the proper actions when the SCG is deactivated), is there any issue as raised here?(This is a question to the proponent) |
| Sharp | Yes (Proponent) | In RAN2#117-e, the followings are discussed:BWP handling*Proposal 9:* *There is an active DL BWP while the SCG is deactivated.*- Huawei clarifies this means we don't deactivate BWP. Nokia wonders what this means - will UE perform PDCCH monitoring etc. since BWP is active? Intel thinks dormant BWP could be used. Huawei thinks dormant BWP is one specific BWP but this can be used with any BWP. Nokia thinks dormant BWP is for SCells only and CSI reporting is not for deactivated PSCell. Thinks we could deactivate BWP and say BFD/RLM are performed according to agreed rules. Huawei thinks this could impact RRM requirements.* 9: Discuss in MAC CR discussion how to model the handling BWP while the SCG is deactivated.

We think it was not explicitly agreed “the PSCell DL BWP used for BFD/RLM/RRM” is active BWP.In Section 5 in TS 38.213 V17.2.0, the following are described:“The UE is not required to monitor the downlink radio link quality in DL BWPs other than the active DL BWP on the PSCell.”By considering these, if “the PSCell DL BWP used for BFD/RLM/RRM” is other than “the active DL BWP on the PSCell”, the UE might not monitor the DL radio link quality for RLM/BFD on the DL BWP on the PSCell in deactivated SCG. In order to solve this issue, if “the PSCell DL BWP used for BFD/RLM/RRM” is not a active BWP, we think the following modifications are needed:1) modify the definition of BWP switching as we proposed in [R2-2207855](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207855.zip)2) change the description of TS 38.213 to support “the PSCell DL BWP used for BFD/RLM/RRM”**Answer to the Huawei’s Questions**>> Does it rely on the understanding that the DL BWP for BFD/RLM and RRM measurements is not considered as "activated" while the SCG is deactivated?Yes. Please see our comments above.>> Supposing we do a correction to 15.1 as proposed by Samsung but include the case of this BWP as activated in 15.1 (but with the proper actions when the SCG is deactivated), is there any issue as raised here?If “the DL BWP for BFD/RLM and RRM measurements” is considered as “activated”, there are no issues if Samsung’s CR is agreed. However, we think explicit agreement to consider “the DL BWP for BFD/RLM and RRM measurements” as “activated” is needed if we select this solution. |
|  |  |  |
| OPPO | No  |  |
| Xiaomi | No |  |
| Intel | No |  |
| LGE | No | In our understanding, the BWP indicated by *firstActiveDownlinkBWP-Id* for SCG deactivation is considered as activated for BFD/RLM and RRM during SCG deactivation. We believe this is common understanding and does not need such clarification. |
| vivo | No |  |
| Ericsson | No | From the description provided in the paper, there seems no need for any change. If network reconfigured *firstActiveDownlinkBWP* while SCG is deactivated, UE switches the DL BWP. |
| Docomo | No |  |
| Qualcomm | No | Agree with Ericsson. |
| Futurewei | No |  |
| CATT | No |  |
| MediaTek | No |  |
| DENSO | No |  |
| Spreadtrum | No |  |

**Summary 6**: There is no support apparat from Proponent.

**Proposal 6**: Not agree R2-2207855 (and note R2-2207854).

# 4 Temporary RS for SCell activation

By Email [222] (2)

[R2-2207542](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_119-e/Docs/R2-2207542.zip) Corrections MAC regarding TRS activation Nokia, Nokia Shanghai Bell CR Rel-17 38.321 17.1.0 1323 - F LTE\_NR\_DC\_enh2-Core

Reason for change:

1. *Section 5.9: UE does not select TRS for the cell but the TRS is indicated in the Enhanced SCell Activation/Deactivation MAC CE.*
2. *Section 6.1.3.55: Enhanced SCell Activation/Deactivation MAC CE can have zero, one or more TRS fields, ie., not always “several”.*
3. *Section 6.1.3.55: TRS fields encoding after the Ci field is ambiguous*

And changes:

1. *Section 5.9: Clarify the TRS is indicated in the Enhanced SCell Activation/Deactivation MAC CE.*
2. *Section 6.1.3.55: replace “several” by “zero, one, or more”.*
3. *Section 6.1.3.55: Clarify the TRS fields are placed in ascending order based on the ScellIndex for SCells indicated by the Ci field(s) to be activated in the MAC CE.*

[R2-2207788](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_119-e/Docs/R2-2207788.zip) Correction to TRS for fast SCell activation vivo CR Rel-17 38.321 17.1.0 1340 - F LTE\_NR\_DC\_enh2

*Adds missing clause to RRC*

**Question 7**: Do you agree on proposed corrections/clarifications regarding temporary RS fro SCell Activation? If not please indicate which one(s).

|  |
| --- |
| Answers to Question 7 |
| Company | Yes/No | Technical Arguments |
| OPPO | comments |  Agree with Nokia CR except the change in 6.1.3.55Agree with vivo CR. |
| Intel | yes |  |
| LGE | Yes | We are OK with all suggested clarification and Editorial. |
| vivo | Yes  | We also agree with Nokia CR.  |
| Ericsson | Yes |  |
| Qualcomm  | Yes |  |
| Futurewei | Yes |  |
| CATT | Yes |  |
| MediaTek | Yes | We are fine with both Nokia CR and Vivo CR |
| DENSO | Yes |  |
| Spreadtrum | Yes |  |
|  |  |  |
|  |  |  |

**Summary 7**: R2-2207788 and R2-2207542 are agreeable.

**Proposal 7**: Agree R2-2207788 (RRC) and merge R2-2207542 to MAC CR

# 5 Conclusion

**Proposal 1**: Agree to handle issue one as described in [R2-2207011](file:///C%3A%5CUsers%5Cterhentt%5CDocuments%5CTdocs%5CRAN2%5CRAN2_119-e%5CR2-2207011.zip) with added “or” and merge it to MAC CR

**Proposal 2**: Section 5.12 change as shown in R2-220711 is agreed and merge it to MAC CR

**Proposal 3**: Continue discussing BWP handling when SCG is deactivated.

**Proposal 4**: Not agree R2-2208465.

**Proposal 5**: Merge ericsson TP R2-2207966 with modified Note “NOTE: After beam failure is indicated to upper layers, the UE may stop the *beamFailureDetectionTimer* and lower layer beam failure indication while *BFI\_COUNTER* >= *beamFailureInstanceMaxCount* for the deactivated SCG” to MAC CR **and** and merge Nokia TP R2-2207541 with changed wording “When the SCG is deactivated, the UE performs beam failure detection on the PSCell if and only if bfd-and-RLM is configured to true” to MAC CR

**Proposal 6**: Not agree R2-2207855 (and note R2-2207854 discussion paper).

**Proposal 7**: Agree R2-2207788 (RRC) and merge R2-2207542 to MAC CR