3GPP TSG-RAN WG2 #114 Tdoc R2-21xxxxx

Electronic meeting, May 19th – 27th, 2021

Agenda Item: 6.5.1

Source: Ericsson (rapporteur)

Title: [AT114-e][220][DCCA] Miscellaneous DCCA corrections

Document for: Discussion, Decision

# 1 Introduction

This document is to kick off the following email discussion:

* [AT114-e][220][DCCA] Miscellaneous DCCA corrections (Ericsson)

Scope:

* + - Discuss corrections under R16 DCCA WI marked for this discussion to see which CRs could be agreeable.

Intended outcome:

* + - Discussion summary in [R2-2106492](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_114-e/Docs/R2-2106492.zip) (by email rapporteur).
    - Agreeable CRs (if any)

Deadline for providing comments, for rapporteur inputs, conclusions and CR finalization:

* + - Initial deadline (for company feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur summary): 2nd week Mon, UTC 1000
    - Deadline for CR finalization: 2nd week Wed, UTC 1000

# 2 Discussion

To make it easier to find the correct contact delegate in each company for potential follow-up questions, the rapporteur encourages the delegates who provide input to provide their contact information in this table:

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| --- | --- |
| Company | Delegate contact |

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| --- | --- |
| Ericsson | stefan.wager@ericsson.com |
| Huawei, HiSilicon | david.lecompte@huawei.com |
| MediaTek | Chun-fan.tsai@mediatek.com |
| ZTE | liu.jing30@zte.com.cn |
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Companies are requested to add their comments for each of the treated CRs of this email discussion in the boxes below.

## 2.1 UE capability corrections

[R2-2105057](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2105057.zip) Corrections on the capability of eutra-IdleInactiveMeasurements CATT CR Rel-16 36.306 16.4.0 1810 - F LTE\_NR\_DC\_CA\_enh-Core

Rapporteur comment: The CR proposes to clarify in *eutra-IdleInactiveMeasurements-r16* that reporting eNB-configured CRS-based RRM measurements for configured carriers is supported also in RRC\_CONNECTED.

*Question 1: Do companies agree the CR?*

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| Company | Agree (yes/no) | Comments |
| Ericsson | No | This Rel-16 capability *eutra-IdleInactiveMeasurements-*r16 indicates what the UE supports in addition to the Rel-15 capability *ca-IdleModeMeasurements-r15*. This can also be seen in the description for *eutra-IdleInactiveMeasurements-r16* where it says that “A UE that indicates support of this feature shall also indicate support of *ca-IdleModeMeasurements-r15*”.  The support for RRC\_CONNECTED mode is already included in the capability *ca-IdleModeMeasurements-r15*:  ***4.3.6.31 ca-IdleModeMeasurements-r15***  *This field defines whether the UE supports performing eNB-configured CRS-based RRM measurements for configured carrier(s) in RRC\_IDLE mode, including reporting them when requested by eNB while in RRC\_CONNECTED, as specified in TS 36.331 [5].*  Thus, the CR is not needed. |
| Huawei, HiSilicon | The changes are ok but editorial | If something has no capability, it is mandatory, so without the change, the UE would be required to support the reporting procedure in RRC\_CONNECTED even though it does not support the NR measurements in RRC\_IDLE, but no network implementation will ask reporting in that case, so no problem can occur. We are ok for the changes as it is more consistent but this could be merged to another CR because no problem can occur. |
| MediaTek | No strong view | Correct but not essential. We slightly prefer to have this change as it would be consistent with previous sentence. |
| ZTE | Prefer No | Idle measurement report is useful while resuming the RRC Connection, so even if network obtains the results in RRC\_CONNECTED by sending UEInformationRequest (not RRCResume), this should be done as early as possible, e.g. right after receiving RRCResumeComplete. Otherwise, the idle measurement results will be out-of-date.  Regarding the current wording “while resuming the RRC connection from RRC\_IDLE”, we think it only refer to the scenario that early measurement results can be beneficial, it does not strictly say only *RRCConnectionResume* message is involved. So we think the original wording is also fine. |
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*Rapporteur summary: tbd.*

[R2-2105058](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2105058.zip) Corrections on the capability of direct SCG SCell activation CATT CR Rel-16 38.306 16.4.0 0576 - F LTE\_NR\_DC\_CA\_enh-Core

Rapporteur comment: Mainly editorial CR with the following changes:

1. Clarifies that directSCG-SCellActivationResume-r16 applies also to NGEN-DC.
2. Correct typo “en-dc” -> “en-DC”
3. Correct typo “nr-dc” -> “NR-DC”

*Question 2: Do companies agree the CR?*

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| Company | Agree (yes/no) | Comments |
| Ericsson | Yes with change | To align with other capability descriptions, it would be better to refer to architecture options rather capability fields.  For 1, change to “support of (NG)EN-DC”.  For 2, change to “EN-DC” |
| Huawei, HiSilicon | Yes except coversheet | The change is ok but the analysis is not correct: without the change, the network cannot use direct SCell activation if the UE supports NGEN-DC only (not EN-DC). The impact of the only non-editorial change is to NGEN-DC, there is no impact to any other architecture.  Besides, we should not use "if the UE indicates support of (NG)EN-DC" as suggested by Ericsson because it is unclear whether it means "if the UE indicates support of EN-DC and NGEN-DC" or "if the UE indicates support of EN-DC or NGEN-DC". |
| MediaTek | Yes with comment | Looks like editorial correction.  We are okay with the change from “nr-dc” to “NR-DC”.  For the change from “en-dc” to “en-DC or ng-EN-DC”, we prefer to use “(NG)EN-DC”. Using “EN-DC or NGEN-DC” is also fine if company has concern. |
| ZTE | Yes with change | For 1, we think it is more precise to say “EN-DC or NGEN-DC”. In addition, since 3 conditions are mentioned (i.e. EN-DC, NGEN-DC, resumeWithSCG-Config), and both “or” and “and” are used, to make it clear, we suggest to add a comma before the last condition, like:  “if the UE indicates support of EN-DC or NGEN-DC, and support of *resumeWithSCG-Config-r16* as specified in TS 36.331 [17].”  And, we should use EN-DC instead of en-DC. |
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*Rapporteur summary: tbd.*

## 2.2 NR-DC power control signalling (based on RAN1 feedback)

[R2-2106162](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106162.zip) Clarification on intra-FR2 NR-DC power control Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh

[R2-2106262](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106262.zip) Furthur discussion on FR2 NR-DC power control vivo discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

[R2-2106263](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106263.zip) Correction on FR2 NR-DC power control parameter vivo, MediaTek Inc CR Rel-16 38.331 16.4.1 2684 - F LTE\_NR\_DC\_CA\_enh-Core

Rapporteur comment: The above contributions all address the incoming LS:

[R2-2104708](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2104708.zip) Further Reply LS on power control for NR-DC (R1-2104018; contact: Apple, vivo) RAN1 LS in Rel-17 LTE\_NR\_DC\_CA\_enh-Core To:RAN4 Cc:RAN2

In the LS, RAN1 confirms that the RAN1 specified power control for FR2 does not work without p-NR-FR2:

*“According to the current TS38.213, if a UE is configured with both MCG and SCG using NR radio access in FR2, the maximum power for FR2 for transmissions in MCG () is given by p-NR-FR2 corresponding to MCG, and the maximum power for FR2 for transmissions in SCG () is given by p-NR-FR2 corresponding to SCG. Consequently, not introducing p-NR-FR2 is not consistent with current RAN1 specifications and would result in undefined power control for both uplink CCs of MCG in FR2 and uplink CCs of SCG in FR2.”*

Based on this input, the contributions propose changes to TS 38.331, TS 38.306 and TS 37.340. In the following, we discuss the proposed changes per specification.

### 2.2.1 TS 38.331

Both [R2-2106162](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106162.zip) and [R2-2106263](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106263.zip) propose changes to TS 38.331 that are almost identical, basically adding the sentence “This field is not used in this version of specification” to applicable fields. The only difference is that [R2-2106263](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106263.zip) covers also *nrdc-PC-mode-FR2* in *CG-ConfigInfo* and *nrdc-PCmode-FR2* in *PhysicalCellGroupConfig*. Given that [R2-2106262](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106262.zip) makes the same proposal, rapporteur suggests to take the CR in [R2-2106263](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106263.zip) as basis, with the addition that the sentence ”This field is not used in this version of specification” is added also to the fields *nrdc-PC-mode-FR2* in *CG-ConfigInfo* and *nrdc-PCmode-FR2* in *PhysicalCellGroupConfig.*

*Question 3: Do companies agree the CR in R2-2106263, with the addition that the sentence ”This field is not used in this version of specification” is added also to the fields nrdc-PC-mode-FR2 in CG-ConfigInfo and nrdc-PCmode-FR2 in PhysicalCellGroupConfig?*

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| Company | Agree (yes/no) | Comments |
| Ericsson | Yes |  |
| MediaTek | Yes |  |
| ZTE | Yes, but | The changes in CR look generally correct. However, we don’t think it is urgent to agree the CR now, because if RAN4 responds that FR2 NR-DC cannot be supported as a consequence, then spec may need update again. So we suggest to wait for the response from RAN4, and then discuss RAN2 SPEC changes. |
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*Rapporteur summary: tbd.*

### 2.2.2 TS 38.306

In [R2-2106162](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106162.zip), changes are proposed to the NR-DC power sharing capabilities to indicate that FR2 is not supported. There are two options proposed for how to do this.

In [R2-2106262](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106262.zip), it is proposed that no changes are needed for the NR-DC power sharing capabilities.

Rapporteur notes that there is an ongoing discussion on possible UE capability impact in RAN1. It relates to the LS [R2-2104708](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2104708.zip) that RAN1 sent to RAN4, so for UE capability impact RAN2 should await the outcome in RAN1.

*Question 4: Do companies agree to wait for RAN1 for the required updates to UE capabilities?*

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| Company | Agree (yes/no) | Comments |
| Ericsson | Yes |  |
| MediaTek | Yes |  |
| ZTE | Yes |  |
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*Rapporteur summary: tbd.*

### 2.2.3 TS 37.340

In [R2-2106162](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106162.zip), there is a proposal to update the description in 37.340 to highlight that NR-DC power sharing within FR2 is not supported in Rel-16.

Rapporteur notes that the current description in 37.340 is on a high level and agnostic to FR1/FR2. From this perspective it is sufficient to cover the FR2 limitation in stage-3, and stage-2 update is not needed.

*Question 5: Do companies agree to update the description in 37.340 to cover the FR2 limitation in Rel-16?*

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| Company | Agree (yes/no) | Comments |
| Ericsson | No | As mentioned above there is not need to mention this in the high level description in stage-2 as the FR2 limitation will be covered in stage-3. |
| MediaTek | No strong view | Not critical to clarify this in stage 2 but fine to have it if majority prefers. |
| ZTE | Yes, but | If we conclude FR2 power coordination is not needed, then TS 37.340 can be updated. But we prefer to make update after receiving the final conclusion from RAN4. |
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*Rapporteur summary: tbd.*

## 2.3 Miscellaneous corrections

[R2-2105322](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2105322.zip) Correction on pdsch-HARQ-ACK-Codebook-secondaryPUCCHgroup 38 331 CATT CR Rel-16 38.331 16.4.1 2613 - F LTE\_NR\_DC\_CA\_enh-Core

Rapporteur comment: The CR clarifies for *pdsch-HARQ-ACK-Codebook-secondaryPUCCHgroup* that it applies only for CA, since secondary PUCCH group cannot be configured for UE in non-CA case.

*Question 6: Do companies agree the CR?*

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| Company | Agree (yes/no) | Comments |
| Ericsson | Yes, but | this non-functional change shall be added to rapporteur CR. It is apparently a copy-paste error from text in *pdsch-HARQ-ACK-Codebook*. |
| Huawei, HiSilicon | Yes, but | same view like Ericsson, there is no functional issue |
| MediaTek | Yes | Agree to add this editorial change to rapporteur CR. |
| ZTE | Yes | Same view as Ericsson. |
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*Rapporteur summary: tbd.*

[R2-2106065](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106065.zip) Clarification on coordination of UE measurement capabilities for CHO and MDT in MRDC Samsung Telecommunications CR Rel-16 38.331 16.4.1 2665 - F LTE\_NR\_DC\_CA\_enh-Core

Rapporteur comment: The CR proposes to add a note in *CG-ConfigInfo* field descriptions that restrictions in *maxInterFreqMeasIdentitiesSCG*, *maxIntraFreqMeasIdentitiesSCG* and *maxMeasFreqsSCG*, also cover measurements for immediate MDT and conditional reconfiguration.

*Question 7: Do companies agree the CR?*

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| Company | Agree (yes/no) | Comments |
| Ericsson | No | It seems rather clear already that these measurements should be covered by the parameters as it says “…maximum number of allowed measurement identities…” and “…maximum number of NR inter-frequency carriers…”. MeasId is included also in conditional reconfiguration. There is no need for the note to list explicitly what is covered and what not, and it introduces a risk that something is missed. |
| Huawei, HiSilicon | Maybe no | We tend to agree with Ericsson but a note could be ok. |
| ZTE | No | We have same view as Ericsson, no matter of MDT, CHO or normal measurements, they are configured by MeasConfig, and share the same MeasId space.  MeasId ::= INTEGER (1..maxNrofMeasId)  So the current wording can cover all the cases.  We don’t prefer to add note, as Ericsson pointed out, it may introduce a risk that something is missed. |
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*Rapporteur summary: tbd.*

[R2-2104957](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2104957.zip) Clarification reconfigurationWithSync IE reception due to fast MCG recovery OPPO CR Rel-16 38.331 16.4.1 2595 - F LTE\_NR\_DC\_CA\_enh-Core

Rapporteur comment: The CR proposes to remove the limitation of ”not suspended” for SRB2 and at least one DRBs when including *reconfigurationWithSync* is included in *masterCellGroup*:

“- the *reconfigurationWithSync* is included in *masterCellGroup* only when AS security has been activated, and SRB2 with at least one DRB or, for IAB, SRB2, are setup;”

*Question 8: Do companies agree the CR?*

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| Company | Agree (yes/no) | Comments |
| Ericsson | No | Suspension here refers to suspension of SRB2 and DRBs, e.g. during RRC re-establishment. In case of MCG failure, SRBs and DRBs are not suspended, only MCG transmission is suspended for SRBs and DRBs. Transmission via SCG is still possible for SRBs and DRBs that are configured with SCG RLC bearer. Thus, bearers are not suspended, and there is nothing wrong with the current text. |
| Huawei, HiSilicon | No | Agree with Ericsson, moreover, the text proposed to be removed is to exclude reconfigurationWithSync in the first reconfiguration after reestablishment, removing that text would then introduce new UE requirements to support this |
| MediaTek | No | Same comment as Ericsson and Huawei. |
| ZTE | No | We think the CR is not needed, because when all DRBs are configured in MCG, it means network does not configure SCG *CellGroupConfig* to UE. According to the requirements defined in TS 38.331 section 5.1.3, in this case, UE will NOT regard itself as configured with MR-DC. So UE will not trigger MCG failure recovery in this scenario. |
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*Rapporteur summary: tbd.*

[R2-2106022](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106022.zip) Correction on field condition for MCG recovery Ericsson CR Rel-16 38.331 16.4.1 2663 - F LTE\_NR\_DC\_CA\_enh-Core

Rapporteur comment: The CR proposes to clarify in field condition SCG that the field is mandatory in case of *RRCReconfiguration* message contained in an *RRCConnectionReconfiguration* message, which is received in response to *MCGFailureInformation*. The change is closely related to the IPA CR in [R2-2106333](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106333.zip). Since both contain changes for the same field condition, if agreed, this CR could be merged with IPA CR in [R2-2106333](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_114-e/Docs//R2-2106333.zip) to avoid collision when merging CRs into the spec.

*Question 8: Do companies agree the CR?*

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| Company | Agree (yes/no) | Comments |
| Ericsson | Yes | For similar reasons as in IPA CR R2-2106333, *secondaryCellGroup* is needed also for the recovery from MCG failure in (NG)EN-DC, which requires LTE handover. Since LTE handover always involves master key change, *secondaryCellGroup* is needed either to provide *reconfigurationWithSync* (in case of SN terminated DRBs), or to release SCG RLC bearers (in case of MN terminated DRBs). |
| Huawei, HiSilicon | No | The fact that secondaryCellGroup must be included in EN-DC in case of handover is already true in Rel-15 but this is not captured in this field description because it is covered by descriptions of handover/key change procedures.  These descriptions are written in such a way that they can apply to handover inside inside DLInformationTransferMRDC without the need for any change.  So no problem can occur without this CR.  The situation in IPA CR R2-2106333 is totally different: without the CR, nothing prevents the network from restoring the SCG without including secondaryCellGroupConfig, so the UE could have to restore the SCG without RACH, which is was never discussed. |
| MediaTek | Yes | We are okay with this CR and could merge it with IPA CR R2-2106333. On the other hand, if there is strong concern, we are also fine not having it and rely on the general description as commented by Huawei. It is actually difficult to capture all possibility in field description and conditional code, but we could try to make SPEC as clear as possible. |
| ZTE | Yes with changes | Regarding the comment from Huawei, if we don’t have this CR, then based on the yellow sentence, network is allowed to not provide *secondaryCellGroup* in case of EN-DC handover triggered upon MCG failure recovery. That is incorrect.  The field is optional present, Need M, in:  - an *RRCReconfiguration* message contained in another *RRCReconfiguration* message (or in an *RRCConnectionReconfiguration* message, see TS 36.331 [10]) which is contained in *DLInformationTransferMRDC*  So we think the modification in CR is correct.  But if MN decides to release SCG (releasing all SCG RLC bearers means releasing SCG CellGroup configuration) upon MCG failure recovery, then the *RRCConnectionReconfiguration* will include endc-ReleaseAndAdd **without** including RRCReconfiguration container. So the cover page can be updated to remove the case of “releasing all existing SCG RLC bearers”. |
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*Rapporteur summary: tbd.*

# Conclusion

Tbd