3GPP TSG-RAN WG2 #112-e R2-20xxxxx

Electronic Meeting, 2nd – 13th November 2020

Agenda Item: 6.8.4

Source: Ericsson (rapporteur)

Title: [AT112-e][222][DCCA] Miscellaneous DCCA corrections and capabilities

Document for: Discussion, Decision

# 1 Introduction

This document is to kick off the following email discussion:

* [AT112-e][222][DCCA] Miscellaneous DCCA corrections and capabilities (Ericsson)

Scope:

* + - Discuss DCCA corrections under 6.8.4 marked for this discussion to see which CRs could be agreeable

Intended outcome:

* + - Discussion summary in [R2-2010732](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010732.zip) (by email rapporteur).

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

* + - Initial deadline (for companies' feedback): 1st week Fri, UTC 0900
    - Initial deadline (for rapporteur's summary in [R2-2010732](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010732.zip)): 2nd week Mon, UTC 13:00

# 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:

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

|  |  |
| --- | --- |
| Ericsson | stefan.wager@ericsson.com |
| Qualcomm | [chengp@qti.qualcomm.com](mailto:chengp@qti.qualcomm.com) (Peng Cheng) |
| Samsung | himke.vandervelde@samsung.com |
| MediaTek | [Chun-Fan.Tsai@mediatek.com](mailto:Chun-Fan.Tsai@mediatek.com) |
| Sharp | ningjuan.chang@cn.sharp-world.com |
| OPPO | wangshukun@oppo.com |
| Google | frankwu@google.com |

Companies are requested to add their comments for each of the treated CRs of this email discussion in the boxes below.

## 2.1 Other DCCA corrections

### 2.1.1 Resume with SCG

[R2-2010116](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010116.zip) Correction on SCG-related fields in RRCConnection Resume Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4495 - F LTE\_NR\_DC\_CA\_enh-Core

*Rapporteur comment: Corrections on tdm-Pattern & p-Max handling during RRC Resume.*

|  |  |  |
| --- | --- | --- |
| Company | Agree CR? (Yes or No) | Comments |
| Ericsson | Yes, partly | Comments for each change:   1. Disagree. This is strictly not needed as identical field descriptions for tdm-PatternConfig and tdm-PatternConfig2 are both included in RRCConnectionReconfiguration, so strictly not needed to repeat here. 2. Agree, the need code for tdm-PatternConfig should indeed be OR, but is there a need to mention it twice in the field condition? 3. Not clear this change is needed as the need code is still correct and network can ensure this is added correctly. 4. Same comment as 3) 5. Disagree the change as EarlySec is not limited to the SCG case.   Other than this, the cover sheet impact analysis seems wrong. The problem is on UE side that it may keep the tdm-Pattern & p-Max, where it should release it. Maybe the simplest is to add the changes to the rapporteur misc corrections on 36.331. |
| Qualcomm | Partly | * 1st change: no strong view. It is acceptable if we copy the same field descriptions of them in RRC Reconfiguration. * 2nd change: We agree with the intention but we also don’t think it can resolve the issue Huawei raised (i.e. a Rel-16 UE in a Rel-15 network will keep this parameter while the network thinks it was deleted and if the network configures an SCG with tdm-PatternConfig2, the UE could trigger RRC reestablishment). **Please note that tdm-PatternConfig and tdm-PatternConfig2 are “need ON” in RRCConnectionReconfiguration**. Then even if we change their need code to “Need OR” in RRCConnectionResume, it is still possible that gNB configures a Rel-16 UE with tdm-PatternConfig via RRCConnectionReconfiguration and then the Rel-16 UE moves to Rel-15 gNB with tdm-PatternConfig stored. In this case, the Rel-16 UE may still trigger reestablishment if Rel-15 gNB configures tdm-PatternConfig2.   To resolve this issue, we think there are two approaches:   1. Alt-1: gNB release tdm-PatternConfig or tdm-PatternConfig2 before sending Rel-16 UE to INACTIVE. 2. Alt-2: Rel-16 UE will always release tdm-PatternConfig or tdm-PatternConfig2 upon initialization of LTE resume procedure.  * 3rd change: no strong view. It is acceptable to use * 4th change: Agree. Our understanding on the intention is that “has been configured” is not applied to SCG resume which is being configured.. * 5th change: we are confused the change on “*EarlySec”* is not list in cover sheet. Anyway, clarification from proponent is required |
| Samsung | No/ partly | We have concerns regarding the following main changes:  Change 3/ 4: The condition implies that power control fields cannot be modified without signalling the SCG configuration (we assume intention is to allow it whenever SCG is **configured**)  Change 5: We assume this concerns change of EarlySec. Proposed change concerning that condition implies that SCG cells/ cell groups cannot be configured upon resume which seems not the intention |
| MediaTek | partly | Change 1 – OK to add the field description  Change 2 (change need code) – No. Is it NBC compared to R15? We believe that the NW could explicit release it via IE *TDM-PatternConfig-r15*.  Change 3 and 4 (use conditional code for p-MaxEUTRA and p-MaxUE-FR1) – basically ok. The conditional code should replace “if nr-*SecondaryCellGroupConfig* is present” with “if SCG is configured”.  Change 5 – Not really necessary in our view |
| OPPO | partly | 1) Add the missing field descriptions🡺yes  2) Change "Need ON" to Need "OR" for tdm-PatternConfig🡺no,same concern as MTK  3) Change the need code of p-MaxEUTRA to a condition  4) Change the need code of p-MaxUE-FR1 to a condition and remove the misleading text in the field description  🡺no need to change to conditdon and the delelted text is enough to keep.    5) Add "nr-SecondaryCellGroupConfig is present" in the presence information of restoreSCG🡺no |
| Google | partly | Change 1 – OK.  Change 2: share the same view as QC  Changes 3 and 4: OK  Change 5: not needed. |

[R2-2010121](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010121.zip) Corrections for resume with SCG Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2179 - F LTE\_NR\_DC\_CA\_enh-Core

*Rapporteur comment: Corrections to the procedural text for Resume with SCG 5.3.5.3.*

|  |  |  |
| --- | --- | --- |
| Company | Agree CR? (Yes or No) | Comments |
| Ericsson | Yes, partly | Comments for each change:   1. Agree for a), disagree for b) and c). The new level 2> if statement added is erroneous (includes RRCReconfiguration message within E-UTRA RRC message RRCConnectionReconfiguration within E-UTRA RRCConnectionResume, which is wrong) and it is anyway not needed as the case of RRCReconfiguration message within E-UTRA RRCConnectionResume is already covered within the first level 1> if statement covering E-UTRA SRB1. Thus, the only thing that is needed is to add another level 3> else statement to cover the E-UTRA RRCResumeComplete case. 2. Agree.   There are typos in the cover sheet, e.g. what is the SCG RRCReconfigurationReconfigurationComplete message? Since the CR requires changes to be acceptable, maybe as for the previous CR, it is easiest to include the remaining minor clarifications to the rapporteur misc corrections CR. |
| Qualcomm | Partly | * 1st change (1-a): Agree. * 2nd change (1-b and 1-c): Disagree. Same understanding as Ericsson. And we think the following wording of correction 1-b is not correct:   “2> if the *RRCReconfiguration* message was received via E-UTRA RRC message *RRCConnectionReconfiguration* within E-UTRA *RRCConnectionResume*;”   * 3rd change (2): Agree |
| Samsung | Partly | We agree with Ericsson that current CR is not correct and needs quite some updating. Regarding the changes to 5.3.5.3: we agree that we just need to add inclusion in LTE RRCResumeComplete i.e. as bullet 3 |
| MediaTek | Partly | Similar comment as previous companies. Change 1-a and change 2 is ok. Change 1-b and 1-c may need further discussion. |
| OPPO | Partly | Agree with rapporteur. |
| Google | Partly | Agree to changes 1-a) and 2).  Regarding change 1-b) and 1-c): we only need to the change like below:  1> if the UE is configured with E-UTRA *nr-SecondaryCellGroupConfig* (UE in (NG)EN-DC):  2> if the *RRCReconfiguration* message was received via E-UTRA SRB1 as specified in TS 36.331 [10]; or  2> if the *RRCReconfiguration* message was received via E-UTRA RRC message *RRCConnectionReconfiguration* within *MobilityFromNRCommand*;  3> if the *RRCReconfiguration* is applied due to a conditional reconfiguration execution:  4> submit the *RRCReconfigurationComplete* message via the E-UTRA MCG embedded in E-UTRA RRC message *ULInformationTransferMRDC* as specified in TS 36.331 [10], clause 5.6.2a.  3> else if the *RRCReconfiguration* message was received via E-UTRA RRC message *RRCConnectionReconfiguration*:  4> submit the *RRCReconfigurationComplete* via E-UTRA embedded in E-UTRA RRC message *RRCConnectionReconfigurationComplete* as specified in TS 36.331 [10], clause 5.3.5.3/5.3.5.4/5.4.2.3;  3> else if the *RRCReconfiguration* message was received via E-UTRA RRC message *RRCConnectionResume*;  4> include the *RRCReconfigurationComplete* in the E-UTRA RRC message *RRCConnectionResumeComplete* as specified in TS 36.331 [10], clause 5.3.3.4a; |

### 2.1.2 Fast MCG recovery

[R2-2010117](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010117.zip) Correction for fast MCG link recovery via SRB3 in NR-DC Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2177 - F LTE\_NR\_DC\_CA\_enh-Core

*Rapporteur comment: CR updating the RRC general description in 5.3.5.1 to cover also fast MCG link recovery.*

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| --- | --- | --- |
| Company | Agree CR? (Yes or No) | Comments |
| Ericsson | Yes, with changes | Agree that fast MCG link recovery is not covered by current text, but the proposed text “for the SCG” is not suitable to cover the limitations applying to the case with *RRCReconfiguration* received via SRB3, since *radioBearerConfig* may not only be related to the SCG. Therefore, instead of the “for the SCG” we prefer to add “, except when *RRCReconfiguration* is received within *DLInformationTransferMRDC*” to make it clear that the limitations do not apply for the fast MCG link recovery case. |
| Qualcomm | Yes with Ericsson’s change | Ericsson’s re-wording looks good to reduce ambiguity. |
| Samsung | Yes | We also agree to the suggestion from Ericsson |
| MediaTek | Yes |  |
| Sharp | Yes | Wording can be improved as suggested by Ericsson. |
| OPPO | Yes |  |
| Google | Yes |  |

[R2-2010566](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010566.zip) Clarification on ULInformationTransferMRDC Google Inc. CR Rel-16 38.331 16.2.0 2247 - F NR\_Mob\_enh-Core, LTE\_NR\_DC\_CA\_enh-Core

*Rapporteur comment: Changes to align the procedural text for transmitting ULInformationTransferMRDC with existing field descriptions.*

|  |  |  |
| --- | --- | --- |
| Company | Agree CR? (Yes or No) | Comments |
| Ericsson | No | As the mapping is already clear from the field descriptions in *ULInformationTransferMRDC*, we see no need to add this also to the procedural text. There are no errors in the current procedural text. |
| Qualcomm | No | The field description is clear to use SRB1 or SRB3. And it is not necessary to list all cases to use whether SRB1 or SRB3 in procedure text. |
| Samsung | No | We also think no clarification is needed i.e. field description is clear regarding use of SRB1 and SRB3. |
| MediaTek | No | We have the following text in 5.7.3b.4, and it is clear enough how which SRB to use. Therefore, we also think the CR is not needed.  1> if SRB1 is configured as split SRB:  2> submit the *MCGFailureInformation* message to lower layers for transmission via SRB1, upon which the procedure ends;  1> else (i.e. SRB3 configured):  2> submit the *MCGFailureInformation* message to lower layers for transmission embedded in NR RRC message *ULInformationTransferMRDC* via SRB3 as specified in 5.7.2a.3. |
| Sharp | No | Current text is clear enough for us, so no need for this. |
| OPPO | No |  |
| Google | Yes | It is strange that the details are described in the field description rather than in the current procedure text. Engineers outside 3GPP may not look at the field description. In general, the procedure text should contain more details than the field description for the UE implementation. |

[R2-2010650](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010650.zip) Corrections on messages encapsulated in ULInformationTransferMRDC Samsung R&D Institute UK CR Rel-16 36.331 16.2.1 4527 - F LTE\_NR\_DC\_CA\_enh-Core

*Rapporteur comment: Changes to align the procedural text and field descriptions for UL information transfer for MR-DC + editorial corrections.*

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| --- | --- | --- |
| Company | Agree CR? (Yes or No) | Comments |
| Ericsson | Yes | *FailureInformation* was present in field description but not in procedure description. *RRCReconfiguration* was present in procedural text, but not in field description respectively. As there is no functional change this could be merged to rapporteur misc corrections CR. |
| Qualcomm | Yes |  |
| Samsung | Yes | Proponent |
| MediaTek | Yes |  |
| Sharp | Yes |  |
| OPPO | Yes |  |
| Google | Yes |  |

[R2-2010122](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010122.zip) Correction for fast MCG link recovery in (NG)EN-DC Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2180 - F LTE\_NR\_DC\_CA\_enh-Core

*Rapporteur comment: Correction to call re-establishment in 36.331 in case of T304 expiry (Reconfiguration with sync Failure) for (NG)EN-DC if MCG is already suspended.*

|  |  |  |
| --- | --- | --- |
| Company | Agree CR? (Yes or No) | Comments |
| Ericsson | Yes | Agree, this was an error in the procedural text. Indeed, in (NG)EN-DC case the RRC re-establishment in 36.331 shall be called. |
| Qualcomm | Yes |  |
| Samsung | Yes |  |
| MediaTek | Yes |  |
| Sharp | Yes |  |
| OPPO | Yes |  |
| Google | Yes |  |

[R2-2010255](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010255.zip) UE information transmission in LTE fast MCG recovery case SHARP Corporation discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

[R2-2010256](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_112-e\R2-2010256.zip) Clarification on UE information transmission in fast MCG recovery case(36.331) SHARP Corporation CR Rel-16 36.331 16.2.1 4504 - F LTE\_NR\_DC\_CA\_enh-Core

*Rapporteur comment: Discussion paper and corresponding CR on the need to extend the guard period for sending MBMSInterestIndication/SidelinkUEInformation message before fast MCG link recovery.*

|  |  |  |
| --- | --- | --- |
| Company | Agree CR? (Yes or No) | Comments |
| Ericsson | No | We are not sure the proposed changes are needed. It is an optimization for a corner case. We think the current 1s guard time should be sufficient. Fast MCG link recovery can only be configured in case the UE has the possibility for signalling also via the SCG, e.g. by using split SRB. In this case, the UE will be able to communicate with the network and transmit the *MBMSInterestIndication* and *SidelinkUEInformation* via the SCG, even if there may be radio link problem in MCG. Then the network will be aware of the information and can forward it to the target as part of the handover procedure triggered to resolve the MCG failure. The 1s guard time for the handover case is to cover the case where the source node triggers the HO towards target node before receiving MBMSInterestIndication/SidelinkUEInformation from the UE. |
| Qualcomm | No | The intention is correct, but our understanding is that it has been covered by the 2 cases of current spec (i.e. RLF and HO command) because fast MCG recovery is recovered via inter-MN HO (i.e. the concerned scenario is NW perform inter-MN HO upon reception of MCG failure report, which is already covered by current spec although it is not dedicated to HO during MCG recovery). |
| Samsung | No | We also assume that the repetition for transfer during the last 1second before RLF/ HO can cover the issue in typical cases.  We are not sure UE can transfer the assistance via SN, as suggested by Ericsson i.e. ULInformationTransferMRDC is so far not used to carry concerned messages |
| MediaTek | No | We don’t really see the issue here. |
| Sharp | Yes | Firstly we want to clarify why current spec (RLF and HO case) is not enough. The current spec in RLF case can only be performed during a reestablishment procedure, but in fast MCG recovery, there is no reestablishment. And current spec in HO case relies on a guard period of 1s, this is enough for normal handover, but for fast MCG recovery case, this may not be enough. Given t316 can be configured up to 2000ms, there are cases the *MBMSInterestIndication* and *SidelinkUEInformation* transmitted before RLF declared is beyond 1s when the UE receives the responded HO command. This is the point. In this case, UE will not re-initiate the said UE information transmission which results in the information lost in target cell.  Regarding Ericsson’s comment that UE can transmit the messages via split SRB to SCG, our understanding is, even if the primary path is changed from MCG to SCG in fast MCG recovery procedure, as UE does not re-initiate the transmission of the said messages (both in RRC and PDCP layer), so it is not able to submit the messages via SCG. This is our intention to let the UE re-initiate the message during the handover following RLF. |
| OPPO | No | Cannot see the necessary. |
| Google | No | We understand the problem might occur for the SRB3 case. We also think a similar problem might happen in the RRC re-establishment case. However, the problems are corner cases so we are fine without any change. |

### 2.1.3 Missing RRC processing delay requirements:

[R2-2010028](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010028.zip) Processing delay requirements for DLInformationTransferMRDC Ericsson CR Rel-16 38.331 16.2.0 2166 - F LTE\_NR\_DC\_CA\_enh-Core

*Rapporteur comment: Processing delay requirements for DLInformationTransferMRDC is missing.*

|  |  |  |
| --- | --- | --- |
| Company | Agree CR? (Yes or No) | Comments |
| Ericsson | Yes (proponent) | The processing time of the RRC message contained within the *DLInformationTransferMRDC* should apply. |
| Qualcomm | Yes |  |
| Samsung | Yes |  |
| MediaTek | Yes |  |
| OPPO | No | There is no response message followed, why we need the specify the RRC procedure delay? |
| Google | Yes |  |

[R2-2010118](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010118.zip) Processing delay requirements for RRC resume Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2178 - C LTE\_NR\_DC\_CA\_enh-Core

*Rapporteur comment: Processing delay requirements for RRCResume including SCG are missing.*

|  |  |  |
| --- | --- | --- |
| Company | Agree CR? (Yes or No) | Comments |
| Ericsson | Yes, with changes | We agree the SCG addition case is missing and should be added. But this could be added to the already existing SCell addition case, since they have anyway the same value. Then for the case of SCell restore/release, our understanding is that these cases were so far covered in the RRC resume line (10ms case), since restore and release should be faster for UE to process than addition. This is why the 16ms case covers only Scell addition in current spec. Then the same should apply also for the SCG addition case. |
| Qualcomm | Yes | We prefer Huawei’s original wording |
| Samsung | Yes | We have same view as QC i.e. no need for special requirement for restore or release as suggested by Ericsson (noting that far release in Reconfiguration also 16ms applies) |
| MediaTek | Yes | We also prefer the original version from Huawei. Please note that the processing time for SCG add/modify/release is already 16ms in current specification. We don’t think it should change to 10ms while come with Resume. |
| OPPO | Yes, but | Whether we need a new RRC procedure delay for RRC resume with both SCells….and SCG….? Agree with the value 20ms. |
| Google | Yes | We are fine with the changes. |

[R2-2010119](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010119.zip) Processing delay requirements for RRC resume Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4496 - C LTE\_NR\_DC\_CA\_enh-Core

*Rapporteur comment: Processing delay requirements for RRCResume including SCG are missing.*

|  |  |  |
| --- | --- | --- |
| Company | Agree CR? (Yes or No) | Comments |
| Ericsson | Yes, with changes | Same as in the 38.331 case, we agree the SCG addition case is missing and should be added. However, also here we think the 20ms processing time should apply only for the cases of SCG/SCell addition. For the resume with SCG/SCell restoration/release 15ms could apply. |
| Qualcomm | Yes | We prefer Huawei’s original wording |
| Samsung | Yes | See previous |
| MediaTek | Yes | We also prefer the original version from Huawei. |
| OPPO | Yes, but | Whether we need a new RRC procedure delay for RRC resume with both SCells….and SCG….? Agree with the value 20ms. |
| Google | Yes | We are fine with the changes. |

## 2.2 UE capabilities

### 2.2.1 Capability naming for EMR

[R2-2010031](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010031.zip) Correction on early measurement capabilities Ericsson CR Rel-16 36.306 16.2.0 1795 - F LTE\_NR\_DC\_CA\_enh-Core

[R2-2010032](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010032.zip) Correction on early measurement capabilities Ericsson CR Rel-16 36.331 16.2.1 4493 - F LTE\_NR\_DC\_CA\_enh-Core

*Rapporteur comment: The above two CRs are discussed together. They propose a change in capability naming for early measurements, since the current naming erroneously suggests that the early measurements are only used for a certain architecture (CA or EN-DC), which is not the case.*

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| --- | --- | --- |
| Company | Agree CR? (Yes or No) | Comments |
| Ericsson | Yes (proponent) | The capability naming is aligned with 36.331, in which idle/inactive measurement capabilities refer to the measured RAT, i.e. NR or E-UTRA. |
| Qualcomm | Yes | We don’t have strong view. This change is acceptable to us. |
| Samsung | Yes |  |
| MediaTek | Yes | We are ok to rename. |
| OPPO | Yes |  |
| Google | Yes |  |

### 2.2.2 Other

[R2-2009666](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2009666.zip) Adding missing field descriptions of Multi-RAT DC and CA enhancements capabilities Lenovo, Motorola Mobility CR Rel-16 36.331 16.2.1 4474 - F LTE\_NR\_DC\_CA\_enh-Core

*Rapporteur comment: CR adding field descriptions for eDCCA UE capabilities in 36.331.*

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| --- | --- | --- |
| Company | Agree CR? (Yes or No) | Comments |
| Ericsson | No | The descriptions are already included in 36.306 and there is no need to duplicate these in 36.331. Currently there is already a lot of duplication, but maybe the intention is to not further pursue this duplication? |
| Qualcomm | No | Same view as Ericsson |
| Samsung | Yes | We think that for LTE the general principle is to still have field descriptions in RRC (noting these may be needed to clarify XDD differentiation). If there is an interest to align with the NR general principle, we think this requires some separate general discussion |
| MediaTek | Yes | Although it is kind of duplication. But as Samsung’s comment, it is how we do in LTE and also the XDD difference field is needed. |
| OPPO | Yes | No strong opinion. |
| Google | Yes | We prefer to follow LTE conventions. |

[R2-2010030](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010030.zip) Clarification on cross-carrier A-CSI triggering capability Ericsson CR Rel-16 38.306 16.2.0 0437 - F LTE\_NR\_DC\_CA\_enh-Core

*Rapporteur comment: The current description of the cross-carrier A-CSI triggering erroneously mentions cross-carrier scheduling.*

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| --- | --- | --- |
| Company | Agree CR? (Yes or No) | Comments |
| Ericsson | Yes (proponent) | The description is clarified that it concerns cross-carrier A-CSI triggering. There is no relation to cross-carrier scheduling. |
| Qualcomm | Yes | The change is reasonable as cross-carrier A-CSI triggering does not necessarily require the UE to first support cross-carrier scheduling. |
| Samsung | Yes |  |
| MediaTek | Yes |  |
| OPPO | Yes |  |
| Google | Yes |  |

[R2-2010343](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010343.zip) Clarification on UE capability of cross-carrier scheduling with different numerologies Huawei, HiSilicon discussion Rel-16 LTE\_NR\_DC\_CA\_enh-Core

*(moved from 6.1.2)*

*Rapporteur comment: Discussion paper proposing to clarify the relation between the Rel-15 capability crossCarrierScheduling-OtherSCS and the new Rel-16 capability bits crossCarrierSchedulingDL-DiffSCS-r16 and crossCarrierSchedulingUL-DiffSCS-r16. Two options are mentioned:*

*Option 1: Clarify Rel-16 UE capability definition while keeping the Rel-15 UE capability bit. In details,*

*- For UL, if a UE reports the support of crossCarrierSchedulingUL-DiffSCS-r16, it should report the support of crossCarrierScheduling-OtherSCS in all the FeatureSetUplink under one same BC;*

*- For DL if a UE reports the support of crossCarrierSchedulingDL-DiffSCS-r16, it should report the support of crossCarrierScheduling-OtherSCS in all the FeatureSetDownlink under one same BC.*

*Option 2: Dummy the Rel-15 UE capability bit. If a UE supports the feature of cross-carrier scheduling, it only needs to set Rel-16 UE capability bits properly. In this case, the ASN.1 needs to be changed in TS 38.331 as well.*

*Proponent company suggests to go with option 1, since it does not involve ASN.1 change. Companies are requested to state their preference, whether option 1 or 2 or something else below.*

|  |  |  |
| --- | --- | --- |
| Company | Option 1 or 2 or other | Comments |
| Ericsson | Option 2 | We have a preference for option 2, as it would simplify specification and also reduce the amount of capability ignaling sent per BC. The UE would not need to indicate in each FSU/FSD that it supports *crossCarrierScheduling-OtherSCS*, which is totally redundant since it is already indicated by the new Rel-16 capability bits per BC. Since the old Rel-15 bit was and will never be used, we think it is better to dummify it. |
| Qualcomm | Option 2 | Our understanding is the Rel-15 capability is deprecated given   * Rel-15 does not support cross carrier scheduling with different SCSs * Rel-16 defined new FGs for cross carrier scheduling with different SCSs   Meanwhile, please note that the two Rel-16 FGs (i.e. 18-5 and 18-5b in R1-2007326.zip) uses 6-5 and 6-6 (i.e. basic DL/UL NR-NR CA operation) as pre-requisite, but did not use 6-10 and 6-10a (i.e. Rel-15 Cross carrier scheduling capability) as pre-requisite. Therefore Rel-15 and Rel-16 FGs are not coupled for UL and DL cross-carrier scheduling different SCS. Thus, option 1 is not acceptable to us because it introduces coupling between them which is not aligned with TS 38.822.  Hence, we think the easiest way is to just invalidate the release-15 UE capability, starting from release-15 (i.e. option 2). |
| Samsung | Option 2 | Similar views as expressed by Ericsson and Qualcomm |
| MediaTek | Option 2 | We understand this one is completed not used in Rel-15. So, dummify the Rel-15 capability seems easier. |
| OPPO | Option 2 |  |
| Google | Option 2 | Given that Rel-15 does not support cross-carrier scheduling with different SCSs, we prefer to dummify the Rel-15 capability bit. |

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# Conclusion

# References

[1]