**3GPP TSG-RAN WG2 Meeting #111 electronic Draft R2-2008133**

**Elbonia, Aug 17th – 28th 2020**

**Agenda item:** 6.7.2

**Source:** Intel Corporation

**Title:** Summary of discussion [203] [MOB] CHO and CPC corrections (Intel)

**Document for:**  Discussion and decision

# Introduction

This is the summary of below offline discussion:

* **[AT111-e][203][MOB] CHO and CPC corrections (Intel)**

Scope:

* Collect companies’ feedback for the contributions under 6.7.2 and 6.7.3 marked for this email discussion
* Proponents may provide updated versions (if needed) under this email discussion (Tdoc numbers can be requested for this purpose from the session chair or the RAN2 secretary)

        Intended outcome:

* Discussion summary in [R2-2008133](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2008133.zip) (by email rapporteur).
* Email discussion report treated during the 2nd online session, but session chair may propose intermediate conclusions after summary is available

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

* Deadline for companies' feedback:  Thursday 2020-08-20 09:00 UTC
* Deadline for rapporteur's summary (in [R2-2008133](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2008133.zip)):  Friday 2020-08-21 09:00 UTC
* Deadline for CR finalization (for agreed CRs): Thursday 2020-08-27 07:00 UTC

# 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 |
| COMPANY\_NAME | NAME (email@address.com) |
| Intel | yi.guo@intel.com |
| MediaTek | Li-Chuan TSENG (li-chuan.tseng@mediatek.com) |
| NEC | Hisashi Futaki (hisashi.futaki[at]nec.com) |
| Huawei, HiSilicon | Jun Chen (jun.chen@huawei.com) |
| Ericsson | Cecilia Eklöf (cecilia.eklof@ericsson.com) |
| Nokia | jedrzej.stanczak[at]nokia.com |
| ZTE | Mengjie Zhang (zhang.mengjie@zte.com) |
| Google | Frank Wu (frankwu@google.com) |
| CATT | Chandrika Worrall (chandrika@catt.cn) |
| Samsung | fasil.lathf@samsung.com |
| Futurewei | Jialin Zou (Jialinzou88@yahoo.com) |
| Sharp | Ningjuan Chang(ningjuan.chang@cn.sharp-world.com) |

## CRs under 6.7.2 for CHO

As indicated by chairman, following CRs are handled in this offline discussion for CHO;

R2-2006869 Correction to conditional configurations Google Inc. CR Rel-16 36.331 16.1.1 4359 - F LTE\_NR\_DC\_CA\_enh-Core

**Reason for change:**

It has been agreed that the UE stops evaluating conditions for CHO and CPC upon detecting MCG RLF. The agreement is missing.

**The real change:**

**5.6.26.2**

1> stop conditional reconfiguration evaluation for CHO, if configured;

1> stop conditional reconfiguration evaluation for CPC, if configured;

**[Rapp comments] The changes in the content are to align with NR, and should be correct. But some changes are needed on the coverpage;**

* **Affected clause shall be 5.6.26.2 instead of 5.6.26.1;**
* **WI code shall be “**LTE\_feMob-Core**” instead of** LTE\_NR\_DC\_CA\_enh-Core;

**Question 2.1-1: Do companies agree Rapporteur comments on R2-2006869? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes | Fully agree with Rapporteur. |
| NEC | Yes |  |
| Huawei, HiSilicon | Yes |  |
| LG | No | There are same statement in the Initiation of MCG failure information procedure. Thus this CR is not needed. Other cases are not required to specify this. |
| Ericsson | Yes |  |
| Nokia |  | Not essential, but it aligns the procedure with 38.331 (where such excerpts are present already). |
| ZTE | Yes |  |
| Google | Yes |  |
| CATT | Not sure |  |
| Samsung | Yes | Agree to Rapp suggested changes. We are fine with the CR and the changes are aligned to agreement/ changes in NR |
| Futurewei | Yes. | Fine with the change and the Rapporteur comments. |
| Sharp | Yes  |  |

R2-2007765 Correction on TS 36.331 for CHO Huawei, HiSilicon CR Rel-16 36.331 16.1.1 4409 - F LTE\_feMob-Core

**[Rapp comments] Some changes are needed;**

**Below editorial changes are correct:**

* Editorial changes in 5.3.5.9.3; First part of change is partially overlapping with changes in R2-2007663. Would be good to handle it in R2-2007663.
* Editorial changes in 5.3.5.9.4;

**The intention for Changes in 6.3.5 is ok. But not aligned with LTE 331’s principle, i.e. we cannot add “CondReconfigurationTriggerEUTRA field descriptions”. The corresponding changes have to be added for each fields under “ReportConfigEUTRA field descriptions”;**

**Changes in 7.3.1:**

* **Changes on T304 is to align with NR; Ok**
* **Changes on T310 and T312 are not needed since CHO can be covered by “upon triggering the handover procedure”.**

**Question 2.1-2: Do companies agree Rapporteur comments on R2-2007765? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes | Regarding changes for T310/T312, we agree that CHO is covered by “handover procedure”. If clarifications are needed, we can say “upon triggering the handover (including conditional handover) procedure”. |
| NEC | Yes but | For changes on T310 & T312, they are acceptable to us if many companies want. We understand they are intending to align with NR CR below (7764), although “upon triggering the HO” can already cover in 36.331 as Rapporteur indicated. |
| Huawei, HiSilicon | Yes | Basically we agree with Rapp’s comments. Regaridng clarifications on T310/T312, we do not have strong opinions. |
| LG | Yes |  |
| Ericsson | Yes |  |
| Nokia | Yes | Agree with the Rapporteur. |
| ZTE | Yes |  |
| Google | Yes |  |
| CATT | yes |  |
| Samsung | Yes | We think ‘upon triggering the handover procedure’ in T310/T312 is inclusive of CHO execution.  |
| Futurewei | Yes | Agree with the Rapporteur. |
| Sharp | Yes  |  |

R2-2007764 Correction on TS 38.331 for CHO Huawei, HiSilicon CR Rel-16 38.331 16.1.0 1898 - F NR\_Mob\_enh-Core

**[Rapp comments] All changes look correct;**

**Below editorial changes are correct:**

* Editorial changes in 5.3.5.13.1;
* Editorial changes in 6.3.2 on CondReconfigToAddModList and ReportConfigNR;

**Changes in 7.1.1 on T310 and T312 to add stop condition “upon conditional reconfiguration execution i.e. when applying a stored RRCReconfiguration message including reconfigurationWithSync for that cell group”; Looks correct.**

**Question 2.1-3: Do companies agree Rapporteur comments on R2-2007764? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes |  |
| NEC | Yes |  |
| Huawei, HiSilicon | Yes |  |
| LG | Yes |  |
| Ericsson | No | The editorial changes should be included in the rapporteur CR instead. The last changes on the stop conditions are not needed.  |
| Nokia | Partially yes | Some changes OK and needed (e.g. description of the timers or missing ‘To’), some not needed or proposed in a chaotic way (e.g. change 2 and 3, ‘cond event’?). |
| ZTE | Yes |  |
| Google | Yes |  |
| CATT | yes |  |
| Samsung | Yes | We are fine with the changes |
| Futurewei | Yes |  |
| Sharp | Yes |  |

R2-2007663 Correction to update of CHO configuration Samsung CR Rel-16 36.331 16.1.1 4396 - F LTE\_feMob-Core

**[Rapp comments] Changes are correct.**

**First change in 5.3.5.9.3 is overlapping with the changes in R2-2007765. Would be good to handle it in R2-2007663 since anyway R2-2007765 needs to be updated.**

**Question 2.1-4: Do companies agree Rapporteur comments on R2-2007763? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes |  |
| NEC | Yes | Additional editorial corrections:3> if the entry **~~entry~~** in *condReconfigurationToAddModList* includes a *triggerCondition*;< … >3> if the entry **~~entry~~** in *condReconfigurationToAddModList* includes an *condReconfigurationToApply*; |
| Huawei, HiSilicon | Yes |  |
| LG | Yes | Agree with rapp’s comment but we also need to discuss with R2-2007593 handling the same issue. |
| Ericsson | No | We don’t think the current text is wrong, i.e. no change is needed. We think the UE actions need to be specified as it is not delta signalling, but replacement. |
| Nokia | Yes |  |
| ZTE | Yes |  |
| Google | Yes |  |
| CATT | yes |  |
| Samsung | Yes | Agree to the changes indicated by NEC |
| Futurewei | Yes |  |
| Sharp | Yes |  |

R2-2007664 Corrections to Mobility Enahncements Samsung CR Rel-16 38.331 16.1.0 1874 - F NR\_Mob\_enh-Core

**[Rapp comments] All changes are correct.**

**Question 2.1-5: Do companies agree Rapporteur comments on R2-2007764? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes | Author may want to fix the typo in the CR title. |
| NEC | Yes |  |
| Huawei, HiSilicon | Yes |  |
| LG | Yes |  |
| Ericsson | No | The change is not correct, it is the need code that is wrong, see R2-2007593. RAN2 agreed to have Need S as it is replacement, not delta signaling. The need code was correct at first, but was incorrectly changed as part of the ASN.1 review. |
| Nokia | No strong view | Regarding 1st change: maybe it is fine to have such description in the procedure, not everything needs to be inferred from the Need codes of the parameters. |
| ZTE | Yes |  |
| Google | Yes |  |
| CATT | yes |  |
| Samsung | Yes |  |
| Futurewei | Yes |  |
| Sharp | Yes |  |

R2-2007705 Timer handling upon initiation of RRC re-establishment ZTE Corporation, Sanechips CR Rel-16 38.331 16.1.0 1886 - F NR\_Mob\_enh-Core

**[Rapp comments] The changes are correct and align with LTE specification.**

**Question 2.1-6: Do companies agree Rapporteur comments on R2-2007705? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes |  |
| NEC | Yes |  |
| Huawei, HiSilicon | Yes |  |
| LG | Yes |  |
| Ericsson | Yes |  |
| Nokia | Yes |  |
| ZTE | Yes |  |
| Google | Yes |  |
| CATT | yes |  |
| Samsung | Yes | Only the inclusion of release btNameList/ wlanNameList/ sensorNameList in 5.7.5.3 seems essential and we agree to this change. The other changes are only to align to LTE spec and there are no functional changes, but we are fine to have these changes.  |
| Futurewei | Yes |  |
| Sharp | Yes |  |

R2-2007706 Timer handling upon initiation of RRC re-establishment ZTE Corporation, Sanechips CR Rel-16 36.331 16.1.0 4404 - F LTE\_feMob-Core

**[Rapp comments] The changes are correct and aligned with the procedure parts. But the some changes are needed for the coverpage:**

* **Specifciation version shall be 16.1.1;**

**Question 2.1-7: Do companies agree Rapporteur comments on R2-2007706? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes |  |
| NEC | Yes |  |
| Huawei, HiSilicon | Yes |  |
| LG | Yes |  |
| Ericsson | Yes |  |
| Nokia | Yes |  |
| ZTE | Yes |  |
| Google | Yes |  |
| CATT | yes |  |
| Samsung | Yes |  |
| Futurewei | Yes |  |
| Sharp | Yes |  |

R2-2007859 Correction on NR CHO OPPO CR Rel-16 38.331 16.1.0 1936 - F NR\_Mob\_enh-Core

**[Rapp comments] Correct editorial change;**

**Question 2.1-8: Do companies agree Rapporteur comments on R2-2007859? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes |  |
| NEC | Yes |  |
| Huawei, HiSilicon | Yes | We wonder how to handle editorial changes (if agreeable), e.g. we are to have a big editorial CR for Mob topics, or merged into 36/38.331 rapp’s editorial CR. |
| LG | Yes |  |
| Ericsson | Yes | This is a purely editorial change, should be included in the rapporteur CR instead. |
| Nokia | Yes | With the same question/concern as expressed by Huawei. |
| ZTE | Yes | Share the same view as Huawei. |
| Google | Yes |  |
| CATT | yes |  |
| Samsung | Yes |  |
| Futurewei | Yes | Agree with Ericssion. |
| Sharp | Yes | Agree with Huawei |

R2-2007594 Correction of description of CHO events for Mobility Enhancements Ericsson CR Rel-16 38.331 16.1.0 1868 - F NR\_Mob\_enh-Core

**[Rapp comments] Changes are correct to clarify NOTE The definition of Event A3/5 also applies to CondEvent A3/5.;**

**Question 2.1-9: Do companies agree Rapporteur comments on R2-2007594? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes |  |
| NEC | Yes |  |
| Huawei, HiSilicon | Yes |  |
| LG | No | We don’t think it is necessary. If we go this way, this will increase redundancy and potential inconsistency. This is because the similar NOTE may need to be added whenever new event for conditional mobility is required.  |
| Ericsson | Yes | We think something needs to be specified for the conditional events, the current spec says nothing about what the UE should measure for these events. We are open to doing it in a different way also, if companies have other proposals. One way would be to specify them in detail like the current events, but that means much bigger changes than the proposed NOTE. |
| Nokia | No | It is true there is no standalone description for CHO events A3 and A5. But we do not think a NOTE is needed. Either we do nothing (as this is not a critical correction) or we cover that via procedural text, not a NOTE. |
| ZTE | Yes | It’s fine to have a NOTE to clarify the definition of CondEvent A3/5 for simplicity. |
| Google | Yes |  |
| CATT | yes |  |
| Samsung | Yes |  |
| Futurewei | No | Adopt the same events A3, A5 means the same metrics and criteria associated with A3, A5 are adopted. Therefore, a note to explain the details is not really needed. Suggest not making any change for this. |
| Sharp | No strong view | A note is simple way. |

R2-2007018 Minor Correction for Mobility Further Enhancement CATT CR Rel-16 38.331 16.1.0 1771 - F NR\_Mob\_enh-Core

**[Rapp comments] Changes are correct;**

**Question 2.1-10: Do companies agree Rapporteur comments on R2-2007018? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes |  |
| NEC | Yes |  |
| Huawei, HiSilicon | Yes |  |
| LG | Yes |  |
| Ericsson | Yes |  |
| Nokia | Partially yes | We do not think 1st change is needed (no need to massage the wording of the NOTE). |
| ZTE | Yes |  |
| Google | Yes |  |
| CATT | yes |  |
| Samsung | Yes |  |
| Futurewei | Yes |  |

R2-2007361 Corrections to Conditional Reconfiguration triggering Nokia, Nokia Shanghai Bell CR Rel-16 38.331 16.1.0 1836 - F NR\_Mob\_enh-Core

**[Rapp comments] To clarify the procedure text; Nice to have.**

**Question 2.1-11: Do companies agree the changes in R2-2007361? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes |  |
| NEC | Yes but | agree with Rapporteur that they seem nice to have. |
| Huawei, HiSilicon | Yes | In the cover page, there are two small issues: impact analysis is incomplete, Other specs affected are missing the Test&O&M specs (should put X to N). |
| LG | Yes |  |
| Ericsson | No | We don’t think the changes are needed, the current text is clear enough. If companies want the changes, they could perhaps be included in the rapporteur CR as they are editorial in our view. |
| Nokia | Yes | Fine to fix the issues underlined by Huawei.  |
| ZTE | Yes |  |
| Google | Yes |  |
| CATT | yes |  |
| Samsung | Yes | Not essential changes, but adds more clarity and therefore nice to have. |
| Futurewei |  | No strong opinion. Can have them but not essential. |
| Sharp | Yes  | Not essential but are fine to have these changes. |

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R2-2007593 Correction of Need Code for Mobility Enhancements Ericsson CR Rel-16 38.331 16.1.0 1867 - F NR\_Mob\_enh-Core

**[Rapp comments] Do not see the need for the change (The Need Code for condReconfigAdd is changed to S.)**

**It is related to the first change in R2-2007664. I assume the precondition for the first change in R2-2007664 is the configuration is based on delta ignaling since the condition is Need M. And then we do not need to mention when to keep the configuration.**

**Question 2.1-13: Do companies agree the changes in R2-2007593? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes | We do not think the proposed change is needed. The “Need M” is applicable to fields with “Cond condReconfigAdd” when no *condReconfigId* is being added. That is, UE maintains the value. We believe that it is correct to use “Need M” here. |
| NEC | No | Similar view as Rapporteur. |
| Huawei, HiSilicon | No |  |
| LG | No | We agree with Rapp’s comments |
| Ericsson | Yes | The UE behaviour is not to apply delta signalling, but to do a replacement. Therefore the Need Code needs to be changed to S to achieve the correct behaviour.  |
| Nokia | No | We do not follow why this need code shall be changed from M to S.  |
| ZTE | No |  |
| Google | No |  |
| CATT | No  | Similar view as Rapporteur. |
| Samsung | No  | We think the need code should be Need M and prefer to have the changes in R2-2007664. |
| Futurewei | No | Agree with Rapporteur. |
| Sharp | No | Agree with Rapporteur. |

## CRs under 6.7.3 for CPC

As indicated by chairman, following CRs are handled in this offline discussion for CHO;

By Email [203]

Stage-3 corrections:

R2-2007592 Correction of field description for Mobility Enhancements Ericsson CR Rel-16 38.331 16.1.0 1866 - F NR\_Mob\_enh-Core

**Reason for change:**

For CPC, conditional reconfiguration can also be part of the secondary cell group configuration, but that is currently not supported in the specification.

**The real change:**

***mrdc-SecondaryCellGroup***

Includes an RRC message for SCG configuration in NR-DC or NE-DC.
For NR-DC (nr-SCG), *mrdc-SecondaryCellGroup* contains the *RRCReconfiguration* message as generated (entirely) by SN gNB. In this version of the specification, the RRC message can only include fields *secondaryCellGroup, otherConfig, conditionalReconfiguration* and *measConfig*.

For NE-DC (eutra-SCG), *mrdc-SecondaryCellGroup* includes the E-UTRA *RRCConnectionReconfiguration* message as specified in TS 36.331 [10]. In this version of the specification, the E-UTRA RRC message can only include the field *scg-Configuration*.

**[Rapp comments] Looks correct.**

**Question 2.2-1: Do companies agree Rapporteur comments on R2-2007592? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes |  |
| NEC | Yes |  |
| Huawei, HiSilicon | Yes |  |
| LG | Yes |  |
| Ericsson | Yes |  |
| Nokia | Yes |  |
| ZTE | Yes |  |
| Google | Yes |  |
| CATT | yes |  |
| Samsung | Yes |  |
| Futurewei | Yes |  |
| Sharp | Yes |  |

R2-2007766 Correction on TS 38.331 for CPC Huawei, HiSilicon CR Rel-16 38.331 16.1.0 1899 - F NR\_Mob\_enh-Core

To capture below agreements:

**S1\_4. Upon RLF on PCell during the execution of Conditional PSCell change for intra-SN change without MN involvement, the UE supports the Rel-16 MR-DC procedures, i.e. performs connection re-establishment procedure without any fast MCG link recovery.**

**The real change:**

1. Change to 5.3.7.2: If radio link failure of MCG is detected when CPC execution is ongoing, then the UE should initiate RRC reestablishment procedure.
2. Change to 5.3.10.3: Fast MCG recovery can only be started when CPC execution is not going

**[Rapp comments] Not needed since upon CPC execution, the UE will also start T304, i.e. same as PSCell change. Therefore the S1\_4 should have been covered by PSCell change.**

**5.3.7.2**

1> upon detecting radio link failure of the MCG while PSCell change is ongoing, in accordance with 5.3.10; or

1> upon detecting radio link failure of the MCG while CPC execution is ongoing, in accordance with 5.3.10; or

**5.3.10.3**

5> if PSCell change is not ongoing (i.e. timer T304 for the NR PSCell is not running in case of NR-DC or timer T307 of the E-UTRA PSCell is not running as specified in TS 36.331 [10], clause 5.3.10.10, in NE-DC) and CPC execution is not ongoing:

**Question 2.2-2: Do companies agree Rapporteur comments onR2-2007766? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes |  |
| NEC | Yes | Our understanding is same as Rapporteur that PSCell change covers the case of CPC execution. |
| Huawei, HiSilicon |  | Ok that the S1\_4 has been covered by the current spec. |
| LG | Yes | CPC execution doesn’t have different meaning with PSCell change. When CPC condition is met, the UE initiates PSCell change so the changed statement, ‘CPC execution is/ is not ongoing’ is not needed. |
| Ericsson | Yes |  |
| Nokia | Yes | Agree with Rapporteur’s assessment. |
| ZTE | Yes |  |
| Google | Yes |  |
| CATT | Yes |  |
| Samsung | Yes | We have the same view as Rapp that PSCell change is inclusive of CPC.  |
| Futurewei | Yes |  |
| Sharp | Yes  |  |

R2-2007767 Correction on TS 36.331 for CPC Huawei, HiSilicon CR Rel-16 36.331 16.1.1 4410 - F NR\_Mob\_enh-Core

**Reason for change:**

Same as R2-2007766.

**[Rapp comments] Not needed. Same comments as above, i.e. Upon CPC execution, the UE will also start T304, i.e. same as PSCell change. Therefore S1\_4 should have been covered by PSCell change.**

**In addition, if CR is agreebale, the coverpage shall be updated:**

* **WI code shall be “**LTE\_feMob-Core**” instead of** NR\_Mob\_enh-Core;

**Question 2.2-3: Do companies agree Rapporteur comments on R2-2007767? And if any additional correction is needed for this CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Remark**  |
| MediaTek | Yes |  |
| NEC | Yes |  |
| Huawei, HiSilicon |  | Ok that the S1\_4 has been covered by the current spec. |
| LG | Yes | Same as our response at Question 2.2-2 |
| Ericsson | Yes |  |
| Nokia | yes | Same as above. |
| ZTE | Yes |  |
| Google | Yes |  |
| CATT | yes |  |
| Samsung | Yes | Same comment as 2.2-2 i.e. we think PSCell change is inclusive of CPC. |
| Futurewei | Yes |  |
| Sharp | Yes |  |

# Summary

To be added: