3GPP TSG-RAN2 Meeting #113bis-e R2-2104310

eMeeting, 12th – 20th April, 2021

Agenda Item: 4.5 Other LTE corrections Rel-15 and earlier, 7.4 LTE Other WIs

Source: Ericsson

Title: AT113bis-e][201][LTE] LTE Miscellaneous R15/16 corrections

Document for: Discussion and Decision

# Introduction

This report gives a summary of this offline email discussion.

* [AT113bis-e][201][LTE] LTE Miscellaneous R15/16 corrections (Ericsson)

Scope:

* + - Discuss which CRs under AI 4.5 and 7.4 marked for this email discussion are agreeable
    - Provide final CRs

Intended outcome:

* + - Discussion summary in [R2-2104310](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_113bis-e/Docs/R2-2104310.zip) (by email rapporteur)
    - Agreeable CRs by proponents (if revised versions are required, proponents should obtain Tdoc numbers from session chair or RAN2 secretary to provide those)

Deadline for providing comments and for rapporteur inputs:

* + - Initial deadline (for companies' feedback): 1st week Thu, UTC 0900
    - Initial deadline (for rapporteur's summary): 1st week Fri, UTC 0900
    - Deadline for CR finalization: 2nd week Tue, UTC 1000

The deadline for the first round is **Thu, UTC 0900**.

# Contact information

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| --- | --- |
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# Discussion

## MDT logging for any cell selection

[R2-2103816](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_113bis-e\R2-2103816.zip) On the lack of PLMN identity check in case of anyCellSelected state related logging Ericsson discussion

[R2-2103813](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_113bis-e\R2-2103813.zip) On the lack of PLMN identity check in case of anyCellSelected state related logging Ericsson CR Rel-15 36.331 15.13.0 4624 - F TEI15

[R2-2103814](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_113bis-e\R2-2103814.zip) On the lack of PLMN identity check in case of anyCellSelected state related logging Ericsson CR Rel-16 36.331 16.4.0 4625 - A TEI15

During RAN2#113 meeting, companies discussed the issue of the lack of checking the PLMN identity in the case of logged MDT reporting associated to anyCellSelected state. As a result of the email discussion, companies agreed on the principle that UE shouldn’t collect ‘cross-PLMN’ information but the CRs were postponed.

In [R2-2103816](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_113bis-e\R2-2103816.zip), On the lack of PLMN identity check in case of anyCellSelected state related logging, the following was observed and proposed

[Observation 1 The procedural text for logged MDT violates the principle of not collecting different PLMN (not configured in MDT configurations) specific information despite the MDT configuration restricting the UE to collect measurements only in certain specified PLMNs.](#_Toc65677344)

[Proposal 1 The UE does not log the previous cell related information while being in any cell selection state if the previous cell belongs to a PLMN that is not part of the list of PLMNs configured in the logged MDT configuration](#_Toc65678421)

**Question 3.1.1  
Does companies agree on Observation 1 and Proposal 1?**

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| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| Qualcomm | - | Agree with the principle that UE shouldn’t collect ‘cross-PLMN’ information. |
| Huawei, HiSilicon | - | At RAN2#113-e meeting, companies agreed on the principle “UE shouldn't collect "cross-PLMN" information”, and we think proposal 1 follows the principle.  In the current TS 36.331, the following UE behaviours are defined:  2> else if:  3> if the UE is in *any cell selection* state (as specified in TS 36.304 [4]):  4> perform the logging at regular time intervals, as defined by the *loggingInterval* in *VarLogMeasConfig*;  3> else if the UE is camping normally on an E-UTRA cell and if the RPLMN is included in *plmn-IdentityList* stored in *VarLogMeasReport* and, if the cell is part of the area indicated by *areaConfiguration* if configured in *VarLogMeasConfig*:  4> perform the logging at regular time intervals, as defined by the *loggingInterval* in *VarLogMeasConfig*;  4> if the UE is in *any cell selection* state (as specified in TS 36.304 [4]):  5> set *anyCellSelectionDetected* to indicate the detection of no suitable or no acceptable cell found;  5> set the *servCellIdentity* to indicate global cell identity of the last logged cell that the UE was camping on;  5> set the *measResultServCell* to include the quantities of the last logged cell the UE was camping on;  We think the current UE behaviours are sufficiently, i.e. setting of *anyCellSelectionDetected*, *servCellIdentity*, *measResultServCell* and the reasons are as below:  (1) the yellow part is for normal logging and the UE needs to check PLMN/cell validity, and it is the same as the above principle  (2) the green part is for any cell selection logging and then the detailed UE behaivours can be found in the grey part. It can be seen that the UE refers to PLMN “prior” entering the any cell cell selection state. We understand that if “prior PLMN” is not valid MDT PLMN, the UE should not collect such data for anyCellSelection purpose, and it should be clear based on the current TS 36.331. |
| Ericsson | Yes (proponent) | The grey highlighted part of the text provided by Huawei does not restrict the UE from logging the measurements associated to the previous serving cell independent of to which PLMN this cell belongs to. So, we are not sure how Huawei concluded ‘and it should be clear based on the current TS 36.331.’ |
| Samsung | - | Shared with Huawei’s view, i.e. since the cell not belonging to MDT PLMN list have not been logged, it cannot be the last logged cell.  4> if the UE is in *any cell selection* state (as specified in TS 36.304 [4]):  5> set *anyCellSelectionDetected* to indicate the detection of no suitable or no acceptable cell found;  5> set the *servCellIdentity* to indicate global cell identity of the last logged cell that the UE was camping on;  5> set the *measResultServCell* to include the quantities of the last logged cell the UE was camping on;  Thus, we need not clarify it further. |
| LGE |  | Same understanding with Samsung and Huawei |
| Apple |  | We share Samsung and Huawei’s view. |
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The corresponding CRs where provided in [R2-2103813](file:///C:\\Users\\terhentt\\Documents\\Tdocs\\RAN2\\RAN2_113bis-e\\R2-2103813.zip) and [R2-2103814](file:///C:\Users\terhentt\Documents\Tdocs\RAN2\RAN2_113bis-e\R2-2103814.zip).

**Question 3.1.2  
Are the CRs agreeable? Please provide detailed comments on the CRs.**

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| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| Qualcomm | Not in current form | We think the CR is not needed for LTE as it should be sufficiently clear that UE shouldn’t collect ‘cross-PLMN’ information. However, if other companies feel a need for clarification, we can just remove the last two lines and network will still have sufficient information. The additional measurement logging in LTE seems duplicate logging as shown in the illustrative figure below.    So, the CR can be simplified to:    (PS: in NR, the situation is different. NR defines event triggered measurements and periodic measurements. Both of them cannot be configured for the UE together. Event-triggered for OutofService only logged when UE is in any cell selection state. Therefore, if event-triggered is configured with OutofService, then UE has not logged the measurement when it was previously camped normally.) |
| Huawei, HiSilicon | No | See our comments for Question 3.1.1. |
| Ericsson | Yes (proponent) | The proposal from Qualcomm is removing of a functionality. The last serving cell identity was included so that the OAM can identify the cells that are candidates for optimizing the coverage as the last serving cell for the UE is the best candidate to extend the coverage. Therefore, the inclusion of the last serving cell is important for the operators. |
| Samsung | No | See our comments for Question 3.1.1. |
| LGE | No | No further clarification is needed. |
| Apple | No |  |
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**Summary first phase**

Based on companies input above and in mail thread, the CR is not pursued.

**Proposal 1: Draft CRs “On the lack of PLMN identity check in case of anyCellSelected state related logging” (R2-2103813 and R2-2103814) are not pursued.**

## Correction on category dependency for DL Category 13

[R2-2104014](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_113bis-e/Docs/R2-2104014.zip) Correction on category dependency for DL Category 13 Huawei, HiSilicon CR Rel-12 36.306 12.13.0 1806 - F TEI12

Summary of change:

For DL Cat 13+UL Cat 3, and DL Cat 13+UL Cat 5, change the wording:

* From “Category 6, 4, 9 (if supported)” to
* “Category 6, 4

Category 9 (if supported)”

For DL Cat 13+UL Cat 7, and DL Cat 13+UL Cat 13, change the wording:

* From “Category 6, 4, 10 (if supported)” to
* “Category 6, 4

Category 10 (if supported)”

**Question 3.2.1  
Do companies agree with the intent of the CR? Please provide detailed comments on the CR.**

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| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| Qualcomm | Agree with intent | We agree with intent. No strong view on the need of CR. This could as well be merged with Rapp CR if there one this or next meeting. |
| Huawei, HiSilicon | Yes | We are the proponent companies so we support the summary of change.  In addition, we did sent an email to TS 36.306 rapporteur Ravi Kuchibhotla ([Ravi.Kuchibhotla@motorola.com](mailto:Ravi.Kuchibhotla@motorola.com)), and we copied the email below the table. However, we have not received any feedbacks so far. |
| Ericsson | Agree with intent | Similar to QC we think the CR is correct, but there is not a very strong need. But we are OK with merging it to rapp CR.  We think the inter-operability-section of the CR suggests that the current spec is broken in some way, but the CR is very much editorial and we think there are no interoperability issues. |
| Samsung | Agree | We are fine to clarify this if companies think it has ambiguity. Merge it to Rap CR also fine to us. |
| LGE | Yes | Agree with the intent, and ok with the CR for clarification. |
| Apple | Yes | Same view as QC. |
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**From:** Chenjun(Jun)   
**Sent:** Wednesday, March 31, 2021 2:21 PM  
**To:** 'Ravi.Kuchibhotla@motorola.com' <Ravi.Kuchibhotla@motorola.com>  
**Subject:** [TS 36.306] About category dependency for DL Category 13  
**Importance:** High

Hi Ravi,

I am Jun from Huawei. Recently we found an issue for DL Category 13 in TS 36.306, and I would like to double check with you.

Table 4.1A-6: supported DL/UL Categories combinations set by the fields *ue-CategoryDL* and *ue-CategoryUL* and UE categories to be indicated

|  |  |  |
| --- | --- | --- |
| DL Category 13 | UL Category 3 | Category 6, 4, 9 (if supported) |
| DL Category 13 | UL Category 5 | Category 6, 4, 9 (if supported) |
| DL Category 13 | UL Category 7 | Category 6, 4, 9 (if supported) |
| DL Category 13 | UL Category 13 | Category 6, 4, 9 (if supported) |

Currently, in Table 4.1A-6, the category dependency for DL categories is defined. For DL Category 13, it is required that the UE shall also support some categoryies, e.g.

* For DL Cat 13+UL Cat 3: Category 6, 4, 9 (if supported)
* For DL Cat 13+UL Cat 5: Category 6, 4, 9 (if supported)
* For DL Cat 13+UL Cat 7: Category 7, 4, 10 (if supported)
* For DL Cat 13+UL Cat 13: Category 7, 4, 10 (if supported)

Here the wording (if supported) can be interpreted in two ways:

* The wroding covers all the categories before it
* The wording only covers the category just before it

In the past, the CR R2-165855 CR 1337 introduced the relevant changs, and the summary of change is as below:

*It is clarifed that the UE can indicate both ue-Category-v1170 (= CAT 9/10) and ue-CategoryDL-r12 (= CAT 13) simultaneously.*

Based on the CR, the wording “(if supported)” should only cover the category just before it. However, the current text is not exactly following the intention of the CR or it is not very clear on the category dependency.

If the first interpretation is followed, it will change the meaning of legacy behaviours. It is noted that Cat 4 is mandatory for UE, but other categories are optional. For example, for DL Cat 13+UL Cat 3:

* Before the CR, the UE shall support Cat 6 and Cat 4
* After the CR, the UE will optionally support Cat 6

From network point of view, it may lead to wrong configuration as it may send configuration for Cat 6 but the UE is actually not supporting Cat 6.

We find that the issue happens from Rel-12 TS 36.306, and I think the text may need to be updated in order to avoid any ambiguities. One clarification can be as below:

|  |  |  |
| --- | --- | --- |
| DL Category 13 | UL Category 3 | Category 6, 4  Category 9 (if supported) |
| DL Category 13 | UL Category 5 | Category 6, 4  Category 9 (if supported) |
| DL Category 13 | UL Category 7 | Category 6, 4  Category 9 (if supported) |
| DL Category 13 | UL Category 13 | Category 6, 4  Category 9 (if supported) |

Since you are the Rapporteur of TS 36.306, what do you think?

BR, Jun

Huawei

[jun.chen@huawei.com](mailto:jun.chen@huawei.com)

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**Question 3.2.2:**

**If CR is agreeable, from which release should CR be agreed?**

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| --- | --- |
| **Company** | **Comments** |
| Qualcomm | No strong view |
| Huawei, HiSilicon | We think there may be two options:  Option 1: introduce CRs from Rel-12, F/A/A…  Option 2: introduce CR only from Rel-16 with a magic sentence, e.g. Implementation of this CR by a Release 15 or earlier UE will not cause compatibility issues.  We think the clarifications are needed and we do not have strong opinion on which option is preferred. |
| Ericsson | From Rel-16 is sufficient. We do not think a magic sentence is suitable for these types of CRs since this is just an editorial polishing (adding a line break) to make the text clearer. |
| Samsung | Rel-16 is sufficient. Agree with Ericsson. |
| LGE | Agree with Ericsson |
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**Summary first phase**

Based on companies input on Questions 3.2.1 and 3.2.2 above, the following is proposed:

**Proposal 2: Draft CR “Correction on category dependency for DL Category 13 (R2-2104014) can be revised according to received comments, with the aim to get agreeable Rel-16 CR (no magic sentence).**

## T325 (frequency deprioritization timer) handling at inter-RAT HO

[R2-2104248](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_113bis-e/Docs/R2-2104248.zip) Correction on T325 Google Inc. CR Rel-15 36.331 15.13.0 4640 - F LTE-L23, TEI11

[R2-2104253](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_113bis-e/Docs/R2-2104253.zip) Correction on T325 Google Inc. CR Rel-16 36.331 16.4.0 4641 - F LTE-L23, TEI11

Summary of change:

The UE does not stop T325 after successful completion of the mobility from E-UTRA to NR.

Note similar CRs for NR TS 38331 in [R2-2104254](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_113bis-e\Docs\R2-2104254.zip) and [R2-2104255](file:///D:\Documents\3GPP\tsg_ran\WG2\TSGR2_113bis-e\Docs\R2-2104255.zip).

**Question 3.3.1  
Do companies agree with the intent of the CRs. Please provide detailed comments on the CR.**

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| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| Qualcomm | Yes, with comments | Agree with intent of R2-2104248/4253.  Comments on cover-page:   * WI codes seem wrong in both Rel-15 and Rel-16 CRs. * Rel-16 CR should be Cat. A. Although the changes are not *exactly identical*, the intent is indeed for Rel-16 CR to mirror the Rel-15 change. |
| Huawei, HiSilicon | Yes | Agree with the intention. |
| Ericsson | Yes | If we anyway will polish the cover page, we suggest to add this word:  2. If the UE is implemented according to the CR but the NW is not, there is no inter-operability issue. |
| Samsung | No | We think nothing is broken i.e. deprioritisation will be only applied while T325 is running.  In addition, we don’t see the use case UE receives the *MobilityFromEUTRACommand* while running T325. |
| LGE | Yes | Agree with the intent. We think T325 should keep running even after mobility from different RAT. |
| Apple | Yes | Agree with the intention. |
| Lenovo | No | Intention of T325 is that it shall not be stopped and instead, let expire. Therefore, no stop conditions were specified in table 7.3.1 and proposed clarification does not make sense. In 5.3.3.8 the following note has been specified:  NOTE: The UE stores the deprioritisation request irrespective of any cell reselection absolute priority assignments (by dedicated or common signalling) and regardless of RRC connections in E-UTRAN or other RATs unless specified otherwise.  Regarding the corresponding NR CRs R2-2104254/55 which are discussed in the offline discussion “[AT113bis-e][006][NR15] Connection Control II (Huawei)” we should strive for common conclusion of the CRs for LTE and NR. |
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Based on companies’ comments, the Rapporteur’s recommendation is to invite further comments on the draft CRs with the aim to get agreeable CRs.

It was identified that corresponding CRs for 38.331 (NR) (R2-2104254, R2-2104255) are discussed in the offline discussion [AT113bis-e][006][NR15].

As recommended by session chair to join the discussions on the CRs, it is proposed that further discussion on the 36.331 (LTE) CRs is moved to that email discussion. So further discussions on LTE CRs are closed here.

**Proposal 3: Further discussion on Draft 36.331 CRs “Correction on T325” (R2-2104248 and R2-2104253) are transferred to [AT113bis-e][006][NR15] to be discussed jointly with corresponding 38.331 CRs**

## RLC SDU retransmissions

[R2-2102944](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_113bis-e/Docs/R2-2102944.zip) RETX\_COUNT upon expiry of t-PollRetransmit Nokia, Nokia Shanghai Bell CR Rel-16 36.322 16.0.0 0146 - F LTE-L23, TEI16

Summary of change:

In 5.2.1, new text is added such that RETX\_COUNT is incremented only if the RLC SDU is not being considered for retransmission due to expiry of t-PollRetransmit.

*Implementation of this CR by a previous release UE will not cause compatibility issues*

**Question 3.4.1  
Do companies agree with the intent of the CRs. Please provide detailed comments on the CR.**

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| **Company** | **Yes/No** | **Comments** |
| Qualcomm | No | CR is suggesting NOT to count the retransmission due to PollRetx expiry in maxRetx. This is counter-productive since sometimes that is the only way to reach RLF when UL is stalled. |
| Huawei, HiSilicon | No | We don’t think the change is needed. This part is inherited from LTE and no issue is foreseen in LTE framework. |
| Ericsson | No | We think this CR is not needed. |
| Samsung | No | We think that retransmission COUNT value should be incremented if retransmission is considered by the expiry of t-PollRetransmit timer.  There would be a case that UE should reach maximum retransmission number if the timer continues to expire. This case will not be covered if we have this CR. |
| LGE | No | We don’t think that this is a problem since normal implementation can avoid their concerns. And also, given that LTE has no problem in this part until now, this optimization is not needed. |
| Apple | No | The change is the NBC change. |
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**Summary first phase**

Based on companies input above and in mail thread, the CR is not pursued.

**Proposal 4: Draft CR “RETX\_COUNT upon expiry of t-PollRetransmit” (R2-2102944) is not pursued**

# Summary of email discussion, first phase

Based on companies’ comments during the first phase of this email discussion, the following is proposed:

**Proposal 1: Draft CRs “On the lack of PLMN identity check in case of anyCellSelected state related logging” (R2-2103813 and R2-2103814) are not pursued.**

**Proposal 2: Draft CR “Correction on category dependency for DL Category 13 (R2-2104014) can be revised according to received comments, with the aim to get agreeable Rel-16 CR (no magic sentence).**

**Proposal 3: Further discussion on Draft 36.331 CRs “Correction on T325” (R2-2104248 and R2-2104253) are transferred to [AT113bis-e][006][NR15] to be discussed jointly with corresponding 38.331 CRs**

**Proposal 4: Draft CR “RETX\_COUNT upon expiry of t-PollRetransmit” (R2-2102944) is not pursued**

Based on companies’ comments during the first phase of this email discussion, the following is proposed:

**Proposal 5: CR “Correction on category dependency for DL Category 13 (R2-2104341) is agreed in principle**

**Proposal 6: The changes in CRs “Correction on T325” (R2-2104248 and R2-2104253) are agreed (handled jointly with corresponding CRs for NR in email thread [006]), and the coversheet should be revised according to comments, e.g. to simply clarify that T325 should not be stopped in case of inter-RAT mobility from NR. Updated CRs can be provided to next meeting.**

# Conclusions

The following is proposed as outcome of this email discussion.

**Proposal 1: Draft CRs “On the lack of PLMN identity check in case of anyCellSelected state related logging” (R2-2103813 and R2-2103814) are not pursued.**

**Proposal 4: Draft CR “RETX\_COUNT upon expiry of t-PollRetransmit” (R2-2102944) is not pursued**

**Proposal 5: CR “Correction on category dependency for DL Category 13” (R2-2104341) is agreed in principle**

**Proposal 6: The changes in CRs “Correction on T325” (R2-2104248 and R2-2104253) are agreed (handled jointly with corresponding CRs for NR in email thread [006]), and the coversheet should be revised according to comments, e.g. to simply clarify that T325 should not be stopped in case of inter-RAT mobility from NR. Updated CRs can be provided to next meeting.**