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

Electronic Meeting, 2 – 13 Nov 2020

Agenda Item:

Source: Ericsson

Title: [AT112-e][213][MOB] DAPS RRC corrections

Document for: Discussion, Decision

# 1 Introduction

This document is to collect companies comment in the following email discussion:

* [AT112-e][213][MOB] DAPS RRC corrections (Ericsson)

Scope:

* + - Discuss which DAPS RRC corrections to LTE and NR are seen necessary and provide merged CRs with agreeable corrections (if any)

Intended outcome:

* + - Discussion summary in [R2-2010727](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010727.zip) (by email rapporteur).
    - Merged CRs to 36.331 ([R2-2010728](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010728.zip)) and 38.331 ([R2-2010729](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_112-e/Docs/R2-2010729.zip)) (if any)

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 [R2-2010727](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010727.zip)): 2nd week Mon, UTC 13:00
    - Deadline for CR finalization: 2nd week Thu, UTC 1000

**Please fill in your contact information in the end of this document.**

# 2 Discussion

Companies are requested to add their comments in the boxes below.

## 2.1 Minor corrections

[R2-2009665](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2009665.zip) Minor corrections to NR mobility enhancements Lenovo, Motorola Mobility CR Rel-16 38.331 16.2.0 2102 - F NR\_Mob\_enh-Core

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| --- | --- | --- |
| Company | Agree?  (Yes or No) | Comments |
| Ericsson | Yes | Miscellaneous and non-controversial in our view. Can be merged to the rapporteurs CR. |
| Intel | Yes | Same view as Ericsson. |
| Google | Yes | Same view as Ericsson |
| Nokia | Yes | Agree with Ericsson and Intel. |
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[R2-2010415](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010415.zip) Correction on DAPS power configuration Google Inc. CR Rel-16 38.331 16.2.0 2218 - F NR\_Mob\_enh-Core

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| --- | --- | --- |
| Company | Agree?  (Yes or No) | Comments |
| Ericsson | No | Unclear to us if this change is really needed. Other procedural text is perhaps already sufficiently covering handling of this particular field.  There are some errors in the CR which would have to be fixed in case the content should be adopted:   * A space is used rather than a tab in the first change. * A typo in the first change: "configutre" * The first change suggests that an IE is to be released, but it should have been the field. * "-r16" suffixes are used in the procedural text. |
| Intel | No | First changes, should not it be covered by  2> release source SpCell configuration;  Second change has been covered by  2> configure lower layers for the target SpCell in accordance with any additional fields, not covered in the previous, if included in the received *reconfigurationWithSync.* |
| Google |  | We think the current procedure text does not cover the *DAPS-UplinkPowerConfig* handling as explained below.  Responses on Intel’s commnets:   * Regarding the "2> release source SpCell configuration;":   + Since the p-DAPS-Target-r16 is a configuration for the target SpCell, the bullet “*release source SpCell configuration*" does not cover this target SpCell configuration. * The bullet "*configure lower layers for the target SpCell...*" only covers the p-DAPS-Target-r16. However, it does not cover the p-DAPS-Source-r16. |
| Nokia | No | Agree with Intel’s opinion. |
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[R2-2009276](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2009276.zip) Miscellaneous corrections for Mobility Enhancements Intel Corporation (Rapporteur), Ericsson CR Rel-16 38.331 16.2.0 2050 - F NR\_Mob\_enh-Core

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| Company | Agree?  (Yes or No) | Comments |
| Ericsson | Yes | May be revised though. |
| Intel | Yes |  |
| Google | Yes |  |
| Nokia | Partially yes | Changes look correct (although the one for suspending SRBs is not needed, the outcome is the same?). Should be a part of editorial CR, led by the rapporteur. |
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[R2-2010504](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010504.zip) Miscellaneous mobility-related corrections Ericsson, ETRI CR Rel-16 36.331 16.2.1 4518 - F LTE\_feMob-Core

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| --- | --- | --- |
| Company | Agree?  (Yes or No) | Comments |
| Ericsson | Yes | May be revised though. |
| Intel | Yes |  |
| Google | Yes |  |
| Nokia | Partially yes | Same as for 9276, the outcome of change for ‘’suspending SRBs’’ is the same as before such change. |
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## 2.2 Terminology, etc.

[R2-2009535](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2009535.zip) Corrections on DAPS in 36.331 CATT,Ericsson CR Rel-16 36.331 16.2.1 4467 - F LTE\_feMob-Core

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| --- | --- | --- |
| Company | Agree?  (Yes or No) | Comments |
| Ericsson | Yes | There are three changes:  1)  The main argument provided against this change was that by writing "cell group" it is implied that there are SCells. But that is not valid as the definition of the (secondary) cell group states that a cell group can have zero or more SCells:  **Secondary Cell Group**: For a UE configured with DC, the subset of serving cells not part of the MCG, i.e. comprising of the PSCell and zero or more other secondary cells.  2)  Clarifying whether it is source's or target's T310/T312 timers which are addressed during DAPS. Since the UE has seperate T310 and T312 timers for DAPS, we need to be clear on which timers are addressed.  3)  If the RA towards the target takes too long (T304 expires) the UE shall revert to the source and release the target's PHY config. But that release is missing. |
| Intel | No | See comment on R2-2009534. |
| Google | No | The current text is sufficiently clear for the first and second changes. OK for the third change to align with NR. |
| Nokia | No | Agree with Intel, such changes are not essential, and the current specs is correct, at least in light of R16 DAPS. The terminology alignment is always desired, but could be localised (i.e. within a section, as suggested by Intel) and does not have to be done withing the whole TS. |
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[R2-2009534](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2009534.zip) Correction on Source Cell Group and Source SpCell on DAPS CATT,Ericsson CR Rel-16 38.331 16.2.0 2087 - F NR\_Mob\_enh-Core

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| --- | --- | --- |
| Company | Agree?  (Yes or No) | Comments |
| Ericsson | Yes | There are two changes:  1)  The main argument provided against this change was that by writing "cell group" it is implied that there are SCells. But that is not valid as the definition of the (secondary) cell group states that a cell group can have zero or more SCells:  **Secondary Cell Group**: For a UE configured with DC, the subset of serving cells not part of the MCG, i.e. comprising of the PSCell and zero or more other secondary cells.  2)  When T304 expires there are two actions which are the same thing, but written with different wording, the first one should be removed:  ~~3> release target PCell configuration;~~  3> release the physical channel configuration for the target PCell; |
| Intel | No | First change in 5.3.5.1, what’s the problem if we do not have this change? We used target PCell as “without security key refresh, involving RA to the target PCell,”, that involve both PDCP and MAC.  For T304 expiry, PCell is used in Rel-15 version. That’s why PCell is used in Rel-16 when DAPS was introduced.  To my understanding, the principle we used when introduce DAPS is, to align the terminology in the same section instead of the whole spec since different terminologies were used in Rel15 in different sections.  DO not see the need to spend efforts on this again considering nothing is broken.  Then the only valid point in this paper is to remove the duplication of target PCell release upon T304 expiry.  But would be fine if RRC specification Rapporteur would like to clean up the specification. |
| Google | No | No for the first change because the current text is clear sufficiently. OK to capture the second change to remove “3> release target PCell configuration” in the rapporteur’s CR. |
| Nokia | No | Same as for 9535. |
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[R2-2010505](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010505.zip) Release source cell configuration at DAPS handover Ericsson CR Rel-16 38.331 16.2.0 2231 - F NR\_Mob\_enh-Core

Rapporteur: There is overlap (same type of change) in this CR as the second change in the CR above ([R2-2009534](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2009534.zip)). Hence, the rapporteur suggests that this CR is not agreed and instead if the content of this CR is to be merged to a revised version of [R2-2009534](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2009534.zip), if this type of change is agreed in the above paper.

[R2-2010435](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010435.zip) Correction on DAPS OPPO CR Rel-16 38.331 16.2.0 2222 - F NR\_Mob\_enh-Core

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| Company | Agree?  (Yes or No) | Comments |
| Ericsson | No | It seems that the intention of this change is to make it clear that the "UE does not support CA or DC during DAPS HO". To do this it is proposed to change from "SpCell" to "PCell". It seems the proponents thinks that "SpCell" implies an PSCell (i.e. implies Dual Connectivity).  We do not think so though. We think it is perfectly fine to use the "SpCell" term even if the UE does not have DC configured.  Also, we dont think that this change excludes CA in any way.  We believe that other parts of the specification makes it clear that CA and DC is not used during DAPS.  Hence, we do not think this change is needed. |
| Intel | No | Do not see the problem. |
| Google | No | The current specification is sufficiently clear so there is no need for the changes. |
| Nokia | No | Agree with Ericsson. SpCell covers also the PCell while it does not imply a DC/CA is used. |
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## 2.3 RLC reestablishment

[R2-2010297](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010297.zip) Correction on reestablishRLC for DAPS Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2203 - F NR\_Mob\_enh-Core

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| Company | Agree?  (Yes or No) | Comments |
| Ericsson | No | There are many many of ways in which the network could create unwanted situations. We do not think RAN2 should, or even **can**, specify against these.  In our view, this CR is another example of this.  We do not think this CR is needed. |
| Intel | No | DO not see the problem.  The configuration in DAPS HO will not impact the source configuration. |
| Google | No | We don’t see |
| Nokia | No | In case of DAPS, this is meant for target side. So the change of description for this field is not needed. |
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## 2.4 LTE connected to 5GC

[R2-2010506](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010506.zip) DAPS handover for bearers configured with NR PDCP Ericsson CR Rel-16 36.331 16.2.1 4519 - F LTE\_feMob-Core

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| Company | Agree?  (Yes or No) | Comments |
| Ericsson | Yes | In case of LTE connected to 5GC procedural text needed for handling of NR PDCP and SDAP are missing, which this CR aims to add. |
| Intel | Yes |  |
| Google | Yes |  |
| Nokia | Could be agreed | Clarifications, but could be agreed. |
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## 2.5 DataInactivityTimer

The following two papers discusses how the DataInactivityTimer is handled during DAPS.

[R2-2009654](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2009654.zip) Handling of expiry of dataInacticityTimer for DAPS NEC discussion Rel-16 LTE\_feMob-Core

Proposes:

**Proposal 1. Before DAPS handover completion, upon receiving indication of expiry of dataInactivityTimer from MAC of the source, adopt the same handling as source RLF.**

**Proposal 2. The trigging condition for the start/restart of dataInactivityTimer of the target should be limited to target MAC entity**

[R2-2010501](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010501.zip) Handling of dataInactivityTimer for DAPS Ericsson discussion

Proposes:

**Proposal 1 During a DAPS handover, the UE shall not take any action if the data inactivity expires for the source.**

**Proposal 2 Adopt the text proposals above.**

There seem to be two main discussion points:

1. **Expiry**: What should happen if the DataInactivityTimer associated with the source expires?
   1. RLF
   2. Nothing
   3. No change (i.e. UE goes to IDLE witl release cause 'RRC connection failure'

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| --- | --- | --- |
| Company | a/b/c | Comments |
| Ericsson | b or c | The DataInactivityTimer is there to protect against RRC state mismatch due to the release-message getting lost. In our view, we only need to consider DataInactivityTimer expiry for the target since only the target can release the UE during a DAPS handover. We think b hence is preferred, but option c is also fine. |
| Intel | B or c |  |
| Google | B or c |  |
| Nokia | b | Nothing shall happen if that is after DAPS HO command was received. Also we wonder if this is a realistic scenario and inactivity timer will be shorter than T304… |
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1. **Starting**: DataInactivityTimers for which MAC entities should be started upon reception/transmission of MAC SDUs?
   1. Only target
   2. No change (i.e. both source and target

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| --- | --- | --- |
| Company | a/b | Comments |
| Ericsson | b | The DataInactivityTimer is comparably long (at least 1 second), a RA procedure should take less than 1 second. Hence, the problem suggested in the NEC-paper seem not to be a real problem. We can leave the spec unchanged. |
| Intel | B | Agree with Ericsson. |
| Google | b | Agree with Ericssion |
| Nokia | b | Agree with Ericsson, we have commented the same in the preceding question. |
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## 2.6 Storing source configurating

[R2-2010294](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010294.zip) Correction on RLF handling in DAPS Huawei, HiSilicon CR Rel-16 38.331 16.2.0 2202 - F NR\_Mob\_enh-Core

[R2-2010295](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010295.zip) Correction on RLF handling in DAPS Huawei, HiSilicon CR Rel-16 36.331 16.2.1 4506 - F LTE\_feMob-Core

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| Company | Agree?  (Yes or No) | Comments |
| Ericsson | No | Upon handover failure (5.3.5.8.3) and when RLF has been detected in source, it is stated that  *3> revert back to the UE configuration used in the source PCell;*  In order to "revert", how the UE achieves this (if it stores it, asks a friend, or something else) doesn't matter as it would be enough to verify the UE has "reverted". |
| Intel | No | DO not see the problem. We did not specify the release of source configuration, and only say to release the connection, therefore the configuration should be still there.  But agree Ericsson, anyway it is UE implementation on how to get the configuration back. |
| Google | No | The current text is clear. |
| Nokia | No | We agree with Intel. There is no release of source cell config specified. Hence, we consider Huawei’s change redundant and not needed. |
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## 2.7 "release the source connection"

[R2-2010499](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2//TSGR2_112-e/Docs//R2-2010499.zip) RLF in source during DAPS Ericsson discussion

It is proposed:

1. Change "release the source connection" to "release the physical channel configuration for the source SpCell/PCell".
2. Delete the line "suspend the transmission of all DRBs in the source MCG".

There are text proposals in the Annex.

1. Adopt the text proposals below.

Regarding proposal 1:

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| Company | Agree?  (Yes or No) | Comments |
| Ericsson | Yes |  |
| Intel | Yes |  |
| Google | Yes |  |
| Nokia | No strong view | Could be changed as proposed, but then what about other occurrences of ‘release source connection’ in RRC specs (assuming there are such)? Will you bring another CR, aligning the terminology next meeting?;) |
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Regarding proposal 2:

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| Company | Agree?  (Yes or No) | Comments |
| Ericsson | Yes |  |
| Intel | Yes |  |
| Google | Yes |  |
| Nokia | OK | Seems clear enough without it. |
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Regarding proposal 3:

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| Company | Agree?  (Yes or No) | Comments |
| Ericsson | Yes |  |
| Intel | Yes |  |
| Google | Yes |  |
| Nokia |  | OK for P2 related part. Not convinced for P1. |
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# 3 Conclusion

In the previous sections we made the following observations:

Based on the discussion in the previous sections we propose the following:

# Annex

# In order to ease possible offline discussions, all delegates having provided input in this document are requested to fill the following table.

|  |  |  |
| --- | --- | --- |
| Company | Name | Email Address |
| Ericsson | Mattias Bergström | mattias.a.bergstrom@ericsson.com |
| Intel | Yi Guo | Yi.guo@Intel.com |
| Google | Eric Chen | Ericdmchen@google.com |
| Nokia | Jedrzej Stanczak | jedrzej.stanczak@nokia.com |
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