3GPP TSG-RAN WG2 Meeting #111 R2-200xxxx

Elbonia, Online, 17 – 28 August 2020

**Agenda item: 6.7.1**

**Source: Nokia, Nokia Shanghai Bell**

**Title: Report from [AT111-e][202][MOB] LTE and NR mobility Stage-2 corrections (Nokia)**

**WID/SID: LTE\_feMob-Core/NR\_Mob\_enh-Core - Release 16**

**Document for: Discussion and Decision**

# 1 Brief scope of the paper

This document aims at collecting companies’ views regarding the Stage-2 corrections related to Rel-16 Mobility enhancements:

**[AT111-e][202][MOB] LTE and NR mobility Stage-2 corrections (Nokia)**

Scope:

* Collect companies’ feedback for the Stage-2 contributions under 6.7.1, 6.7.3 and 7.4.1 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 [R2-2008132](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2008132.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 [R2-2008132](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2008132.zip)):  Friday 2020-08-21 09:00 UTC
* Deadline for CR finalization (for agreed CRs): Wednesday 2020-08-26 07:00 UTC

# 2 Corrections to TS 37.340

## 2.1 Figures and description for CPC

[1], [2] and [3] suggest TS 37.30 changes to the figures and corresponding description for Conditional PSCell Change (CPC). There are various approaches presented: in [1] the names of the messages in section 10.3.1 of TS 37.340 are changed (to match the correct RAT nomenclature). In addition, ‘’if the SR3 is configured’’ is removed. The authors of [2] propose a new figure wherein RRCReconfigurationComplete (forwarded to the SN, embedded in RRC Transfer) is additionally shown. The authors of [3] introduce two new figures in section 10.3.2 of TS 37.340, to separately depict and describe CPC cases and remove the confusion in the existing figures (e.g. step 3a, not shown in the figures).

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| **Question 1: Do you agree sections 10.3.1 and 10.3.2 of TS 37.340 require changes? If so, please indicate which CRs ([1], [2], [3]) are relevant and which other potential changes do you find necessary?** | | |
| **Company** | **CR or CRs** | **Comments** |
| Futurewei | Agree on [1],[2], partially [3] | We are fine with the changes proposed in [1]. In principle we support the Ericsson proposed change on diagram 10.3.2-4 [2]. We are fine to specify CPC separately as suggested in [3]. However, for without SRB3 case in [3], the changes including diagram 10.3.2-6 still does not precisely reflect the RAN2 agreement: “the UE needs to provide the CPC complete message to the SN via the MN upon CPC execution” and “the UE sends RRCReconfigurationComplete to the MN at execution of CPC”. Our understanding is “upon/at execution of CPC” means sending CPC complete message is at the same time CPC execution is triggered – sending the complete message is in parallel with CPC execution rather than after CPC execution is completed. Even if there is ambiguity on RAN2 agreement, based on the technical merit of lower latency without losing anything, sending completion message while execution starting should be a better choice. Therefore, we suggest: adopt the diagram 10.3.2-4 proposed in [2] as CPC specific diagram 10.3.2-6. Modify the procedure steps suggested in [3] as follows:  1. The SN initiates the procedure by sending the *SN Modification Required* to the MN including the SN RRC reconfiguration message.  2. The MN forwards the SN RRC reconfiguration message to the UE including it in the *RRC reconfiguration* message.  3. The UE replies with the *RRC reconfiguration complete* message by including the SN RRC reconfiguration complete message. The UE maintains connection with source PSCell after receiving CPC configuration, and starts evaluating the CPC execution conditions for the candidate PSCell(s).  4. If at least one CPC candidate PSCell satisfies the corresponding CPC execution condition, the UE detaches from the source PSCell, applies the stored corresponding configuration and sends an *ULInformationTransferMRDC* message to the MN which includes an embedded *RRCReconfigurationComplete* message to the new PSCell..  5. The MN forwards the SN RRC response message, if received from the UE, to the SN by including it in the *SN Modification Confirm* message.  6. The UE synchronises and performs random access procedure to the selected candidate PSCell. |
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## 2.2 SCG handling in DAPS handover

The authors of [4] claim it is unclear how MR-DC configurations are handled in case of DAPS HO. It is proposed to add a subclause informing MR-DC is not supported together with DAPS. Thus, SCG configuration should be released before DAPS HO command is sent to the UE.

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| **Question 2: Do you agree with what is proposed in [4] and the need of such TS 37.340 CR?** | | |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | No | There reason MR-DC is not supported during DSPS is that tri-connectivity is not supported. Therefore, as long as MR-DC is suspended during DAPS, it should be fine. It should be the network deciding when to release the SCG – either before DAPS is started or after DAPS is completed. We don’t think the UE should autonomously release the SCG upon DAPS is conducted. The network should be able to act properly when to release SCG. |
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## 2.3 Editorial change of CPC subsection

In [5] a minor correction fixing wrong indentation is proposed. Please share your view below only if you think this is not needed or shall be addressed in a different manner (i.e. not via a separate CR, covering just such tiny change).

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| **Question 3: Shall the editorial issue in [5] be addressed? Do we need a separate CR for such changes?** | | |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | Yes. | Notify the editor of 37.340. |
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# 3 Corrections to TS 38.300 and 36.300

## 3.1 DAPS with MR-DC

[6] and [7] comprise corresponding changes to what has been described in [4]. [6] and [7] modify just the NOTEs, not the procedural text. [8] suggests a similar NOTE change to LTE Stage-2 specification. Do you think the CRs in [6], [7] and [8] are needed?

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| **Question 4: Do you support changes in [6] and [7] or [8], modifying the NOTEs regarding DAPS and MR-DC coexistence?** | | |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | No | The network should be able to act properly when to release SCG. It is not really needed to add more notes. |
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## 3.2 Various corrections

CR in [9] suggests various corrections to MobEnh related description in TS 38.300. Please comment in the table below whether you are fine with these.

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| **Question 5: Do you support changes in [9]? Please indicate which changes are possibly OK/NOK, if the entire CR is not acceptable.** | | |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | Yes on change items: 1, 2, 3. | For change item 4, current note numbering seems not have impact on reading spec. OK not making the change.  For change item 5, it in general is ok. But adding the sentence “For DRBs configured with DAPS Handover” seems redundant. Consider the following changes:  For DRBs configured with DAPS Handover,  data forwarding after the source gNB receives the HANDOVER SUCCESS message from the target gNB follows the same behaviors as described above,  before the source gNB receives the HANDOVER SUCCESS message:  …. |
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## 3.3 UL data switching for DAPS

The authors of [10][11] suggest the description of DAPS operation should be updated, to reflect entirely the agreement made in the past: ‘’ the UE continues the downlink user data reception from the source eNB until releasing the source cell and continues the uplink user data transmission to the source eNB until successful random access procedure to the target eNB’’. Please share in the table below your view whether such changes are needed:

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| **Question 6: Do you support changes in [10] and [11]?** | | |
| **Company** | **Yes/No** | **Comments** |
| Futurewei |  | Understand the motivation. But the change cannot be in the current form:  The proposed change “…and the uplink user data transmission to the source gNB until releasing the source cell” will be conflict with the agreed UL date TX behaviour in the following sentence. |
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## 3.4 ‘Not released’ versus ‘still available’

The authors of [12] propose to change the description in TS 38.300 by replacing ‘not released’ with ‘still available’. While the rapporteur finds this CR awkward, it is fair to ask the companies if they are willing to pursue such change.

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| **Question 7: Do you support a change in [12]?** | | |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | Yes | “still available” is more precise since it means not only the source link is not released but also the link condition is still good enough. Therefore, we should use the wording from the RAN2 agreement. |
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## 3.5 NOTEs for DAPS with CHO and release of DAPS

The authors of [13] and [14] propose the NOTEs to Stage-2 LTE and NR specifications, saying CHO cannot be configured with DAPS and another one, saying when DAPS is completed and what cannot be configured prior to completing DAPS. Please respond whether we need such NOTEs in LTE and NR Stage-2 specifications:

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| **Question 8: Do you think NOTEs in [13] and [14] are needed and should be agreed?** | | |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | No | Network implementation should follow the principle that during an on-going DAPS execution, no other operations should be initiated. |
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## 3.6 CHO Stage-2 corrections

In [15] various corrections to CHO are proposed (e.g. change the reference to CHO A3 and A5 events, etc.) Do you support the entire CR, only a subset of changes do not support it at all?

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| **Question 9: Do you support the changes proposed in [15]?** | | |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | Yes 1, 2, 3.  No 4. | Fine with the proposed change items 1, 2, 3. For item 4 we should not remove the sentence. I would even suggest make it clear, keeping the sentence and only remove “i.e.”:  After source eNB sends CHO command to UE, the network is allowed to change source eNB configuration and network can add, modify or release a configured CHO configuration using RRC message until UE starts executing CHO. |
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And finally, in [16] there is a proposal to clarify that CHO does not apply to LTE-5GC case. Do companies think such clarification is useful and shall be agreed?

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| **Question 10: Do you support the change proposed in [16]?** | | |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | Yes | It should be clarified. |
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# 4 Conclusions

Based on the views expressed in the previous sections, we propose the following:

# 5 List of referenced documents

[1] R2-2007016 Minor Correction for CPC Configuration Related Procedure, 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[2] R2-2007595 Correction of signalling flow for CPC, 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[3] R2-2007360 Corrections to CPC with and without SRB3 involved 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[4] R2-2007266 37.340\_CR0219(Rel-16) R2-2007266- SCG handling at DAPS HO 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[5] R2-2007542 Correction for editorial structure of CPC section 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[6] R2-2007698 Clarification on SCells and SCG release at DAPS HO 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[7] R2-2007699 Clarification on SCells and SCG release at DAPS HO 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[8] R2-2007358 Clarification on no DAPS HO in MR-DC 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[9] R2-2007359 Various corrections to NR Mobility enhancements description 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[10] R2-2008074 Correction on TS36.300 for uplink data switching in DAPS 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[11] R2-2008076 Correction on TS38.300 for uplink data switching in DAPS 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[12] R2-2008075 Correction on TS38.300 for source fallback in DAPS 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[13] R2-2007496 DAPS handover corrections 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[14] R2-2007497 DAPS handover corrections 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[15] R2-2007763 Correction on TS36.300 for CHO 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

[16] R2-2007762 Correction on CHO for LTE-5GC 3GPP TSG-RAN WG2 Meeting #111 electronic Online, August 17th - 28th, 2020

# Contact information

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