**3GPP TSG-RAN3 Meeting #107-e R3-20xxxx**

**24 February - 6 March 2020 E-Meeting**

Source: ZTE

Title: Email Summary of

 CB # 87\_Email087 MobEnh\_CHO\_common\_condPSCellchg

Agenda Item: 15.3.1.1

Document for: Discussion and Decision

# Introduction

In RAN3#107-e, the following email discussion was allocated for the topic “conditional PScell change”:

15.3.1.1:

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| **CB: # 87\_Email087-MobEnh\_CHO\_common\_condPSCellchg****- Each UE associated X2AP/XnAP signaling connection is only associated to single candidate target PScell/SCG, and different candidate target PScell/SCG in the same target/serving SN is associated to different UE X2AP/XnAP signaling connection; existing SGNB RELEASE REQUEST (ACK) messages can be reused by MN to perform per PScell/SCG level cancel; SGNB RELEASE REQUEST (ACK) messages should be sent via the associated UE X2AP/XnAP signaling connection, i.e. different signaling connection is associated to different candidate target PScell/SCG; The existing SGNB RELEASE REQUIRED (CONFIRM) messages can be reused by SN to perform per PScell/SCG level cancel; SGNB RELEASE REQUIRED (CONFIRM) messages should be sent via the associated UE X2AP/XnAP signaling connection, i.e. different signaling connection is associated to different candidate target PScell/SCG; In MR-DC operation, “HANDOVER CANCEL” or “CONDITIONAL HANDOVER CANCEL” or alike new messages are not needed for candidate target PScell/SCG canceling, and the existing MN/SN initiated SN Release procedure suffices? (ZTE, CATT, NTT)?****- Enhance SN initiated SN modification procedure for SN initiated intra-SN conditional PSCell change, adding CPAC indication and multiple RRC container (CG-Config) in SgNB Modification Required message; Define new X2AP message SgNB Modification Complete to indicate the UE selected PSCell to MN; liaise RAN2 with above; Both DRB level and UE level DAPS HO are supported; Support UE level DAPS HO indicator in XnAP/X2AP and DRB level DAPS HO indicator in RRC container? (QC)****- other aspects? (Gg)****- if agreeable, merge/revise as needed; go for agreement**(ZTE)Summary of offline disc |

In this contribution, we shall further discuss those aspects and try to converge on a set of CRs if agreeable.

# Discussion

The following Tdocs are related:

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| [R3](docs%5C%5CR3-200084.zip)[-200084](docs%5C%5CR3-200084.zip) | LS on Conditional PSCell addition/change (3GPP RAN2) | LS inRAN2 sees no RAN3 impact for intra-SN change without MN involvement |

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| [R3-20](docs%5C%5CR3-200320.zip)[0320](docs%5C%5CR3-200320.zip) | Further Discussion on Candidate Target PScell&SCG Cancel without MN&SN Change (ZTE) | discussion |
| [R3-200321](docs%5C%5CR3-200321.zip) | TS37.340 Stage2 Introduction of Rel-16 Mobility Enhancement in MR-DC (ZTE, CATT, NTT DOCOMO, INC.) | draftCRr, TS 37.340 v16.0.0, Rel-16, Cat. B |
| [R3-200528](docs%5C%5CR3-200528.zip) | (TP for [NR\_Mob\_enh] BL CR for TS 38.473)CPAC-F1 impact (CATT) | other |
| [R3-200765](docs%5C%5CR3-200765.zip) | (TP for NR\_Mob\_enh BL CR for TS 38.473) Introducing Intra-SN change (Google Inc.) | other |
| [R3-200410](docs%5C%5CR3-200410.zip) | SN initiated SN change (Qualcomm Incorporated) | discussionMove to 15.3.1.1 |

Based on “[R3-200410](docs%5C%5CR3-200410.zip)”(QC), there are RAN3 impacts due to SN initiated conditional intra-SN PScell change, such as UE capability coordination, resource coordination for single UL operation, security key change, QoS re-negotiation. In general, we agree to above observations, but we assume that there are also a subset of cases within “SN initiated conditional intra-SN PScell change” scenario, which does not require MN involvement, i.e. not trigger MN Modification Request/Ack. To reduce the Rel-16 scope further and guarantee timely WID closure, we suggest focusing on those subset of cases without MN involvement.

**Issue1: In Rel-16 WID, shall we focus on the subset of cases** **within “SN initiated conditional intra-SN PScell change”, which does not require MN involvement. The other MN involved cases within “SN initiated conditional intra-SN PScell change” scenarios together with other more scenarios can be done in Rel-17.**

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| **Company name** | **Comments** |
| ZTE | To reduce the Rel-16 scope further and guarantee timely WID closure, yes!  |
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Based on “[R3-200320](docs%5C%5CR3-200320.zip)”(ZTE), “[R3-200321](docs%5C%5CR3-200321.zip)”(ZTE/CATT/DCM), some stage2 level issues&descriptions were discussed and proposed. In general, for Rel-16, even though there might be no X2/Xn stage3 signaling impact due to SN initiated conditional intra-SN PScell change (we try to achieve this!), it is still justified to describe its system behaviors in stage2 level as usual, such as:

The SN initiated Modification procedure can be used for candidate PScell preparation, e.g. via SRB1;

The SN Release procedure can be used for candidate PScell cancel/release.

In addition, some basic concepts related to Rel-16 mobility enhancement are also proposed in future-proof way.

To avoid X2/Xn stage3 signaling impacts, ZTE proposes “Each UE associated X2AP/XnAP signaling connection is only associated to single candidate target PScell/SCG, and different candidate target PScell/SCG in the same target/serving SN is associated to different UE X2AP/XnAP signaling connection.”

**Issue2: For Rel-16 WID, shall we introduce TS37.340 stage2 CR, to capture the identified mobility enhancement specific conclusions? What level of details to be captured?**

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| **Company name** | **Comments** |
| ZTE | yes! otherwise, the support of “SN initiated conditional intra-SN PScell change” (a subset of cases) is missing in MR-DC stage2, people may get lost about RAN2/3 status. Take “[R3-200321](docs%5C%5CR3-200321.zip)”(ZTE/CATT/DCM) as baseline CR reference. |
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**Issue3: For Rel-16 WID, is X2/Xn stage3 signaling zero-impact solution possible to support “SN initiated conditional intra-SN PScell change” (a subset of cases)? Could SN release procedure be used for candidate PScell cancel purpose?**

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| **Company name** | **Comments** |
| ZTE | yes! After UE is in MR-DC operation, whenever the serving SN prepares candidate PScell(s), it shall create new UE associated X2/Xn signaling connection with different SN APID + same MN APID. Hence MN and SN can always know which candidate PScell(s) is associated to which X2/Xn signaling connection, and can perform candidate modify and cancel/release if necessary later.  |
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Based on “[R3-200528](docs%5C%5CR3-200528.zip)”(CATT) and “[R3-200765](docs%5C%5CR3-200765.zip)” (Google), some stage3 level F1 specific issues&descriptions were discussed and proposed. Both papers identify similar points that F1 procedure should also cover “conditional intra-SN PScell change” case, but provide different texts. Technically, they are correct and are supposed to be merged.

**Issue4: “[R3-200528](docs%5C%5CR3-200528.zip)”(CATT) and “[R3-200765](docs%5C%5CR3-200765.zip)”(Google) seem both technically correct, and how to merge the two TPs?**

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| **Company name** | **Comments** |
| ZTE | We tend to start from minimum, taking [R3-200528](docs%5C%5CR3-200528.zip)”(CATT) as starting point. ZTE would like to co-sign the final merged TP. |
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Based on RAN3 conclusions above, we propose to reply LS to RAN2 as below:

“RAN3 thanks RAN2 for decision about SN initiated conditional intra-SN PScell change.

RAN3 has agreed to support SN initiated conditional intra-SN PScell change without MN involvement in Rel-16, and continue working on conditional intra-SN PScell change with MN involvement in Rel-17.

For intra-SN PScell change without MN involvement, there is no impact on X2/Xn signaling but some impacts on F1 signaling. RAN3 also agreed to introduce TS37.340 DraftCR for stage2 purpose.”

**Issue5: To reply RAN2 LS about RAN3 conclusions on this topic?**

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| **Company name** | **Comments** |
| ZTE | Yes. ZTE would like to draft the reply LS to RAN2 as above. |
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# Conclusion

In this contribution, we further discussed the topic “conditional PScell change”, and provided the following proposals:

**Proposal 1:**

# Reference

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