**3GPP TSG-RAN WG2 Meeting #126 R2-2405944**

**Fukuoka, Japan May 20th – 24th, 2024**

Agenda item: 7.4.3.2

Source: OPPO (Rapporteur)

Title: Report of [AT126][504][R18MobE] Conditional Mobility

Document for: Discussion and Agreement

# Introduction

This document captures discussions and proposals from the following offline discussion:

* [AT126][504][R18MobE] Conditional Mobility (OPPO)

Scope: Cover and Converge on MCG reset to the extent reasonable, at least pave the way for decision at online CB. Can include some remaining part of other untreated tdocs if needed. Progress indicated parts and TP aspects.

Intended outcome: Report w TP

Deadline: CB, see schedule

# Discussion

## 2.1 MCG MAC reset

Regarding whether MCG MAC reset can be performed upon SCPAC execution, a RIL [C147] on this was raised as follows:

|  |
| --- |
| **[RIL]**: C147 **[Delegate]**: CATT (Rui) **[WI]**: Mob **[Class]**:1 **[Status]**: ToDo **[TDoc]**: R2-24xxxxx **[Proposed Conclusion]**: v7  **[Description]**: MCG MAC reset should not be performed upon S-CPAC execution. If the MCG MAC is reset upon S-CPAC execution, the network does not know the MAC reset is performed by UE, so it will not perform MAC reset, this may cause the misalign for MAC states between UE side and network side, which may cause the RRCReconfigurationComplete message cannot be received successfully by network  **[Proposed Change]**: Remove the “2> reset MCG MAC”  **[Comments]**: Huawei: is it possible to apply default MAC cell group configuration but not reset MCG MAC? The MN will only know upon receiving the complete message, but perhaps it can work this way? |

In last meeting, the RIL [C147] was discussed but there was no consensus on whether it is an issue yet.

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| --- |
| **No consensus for now that there is an issue to resolve, can CB next meeting if needed.** |

In this meeting, companies further provide their considerations on how to handle the MCG MAC at SCPAC execution as follows:

[R2-2405217](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2405217.zip) [C147] MAC behaviours in SCPAC Huawei, HiSilicon discussion Rel-18 NR\_Mob\_enh2-Core

**Proposal 1: Discuss whether:**

**a) MCG MAC is always reset at SCPAC execution (which can cause some short-term failures in MAC)**

**b) MCG MAC is not reset at SCPAC execution and the MN needs to use different LCID values for the MCG RLC bearer serving a radio bearer when the radio bearer is terminated in the MN and in the SN**

[R2-2405386](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2405386.zip) [C147] MCG MAC reset upon SCPAC execution CATT discussion NR\_Mob\_enh2-Core

**Proposal 1: To address RIL [C147], MAC reset is not performed at MCG side upon SCPAC execution. TP in Annex 1 is adopted.**

[R2-2405190](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2405190.zip) On MCG Reset handling for SCPAC in MN-Format Nokia discussion

**Proposal 1: Introduce additional parameter “Configuration-Format” as common parameter across all candidate configuration that can be used to decide on whether to replace the MCG configuration and associated actions. TP for this proposal is provided in Annexure.**

**Proposal 2: RAN2 to discuss introduction of Group-ID for common-MCG configuration to enable UE to decide on MCG configuration change and MCG reset based on the Group-ID.**

*Conclusion:*

**a) MCG MAC is always reset at SCPAC execution (which can cause some short-term failures in MAC)**

**b) MCG MAC is not reset at SCPAC execution and the MN needs to use different LCID values for the MCG RLC bearer serving a radio bearer when the radio bearer is terminated in the MN and in the SN**

**c) Introduce additional parameter “Configuration-Format” as common parameter across all candidate configuration that can be used to decide on whether to replace the MCG configuration and associated actions. TP for this proposal is provided in Annexure.**

*CATT and vivo are OK with option b, ZTE and LG prefer option a.*

🡺 **MCG MAC is not reset at SCPAC execution and the MN needs to use different LCID values for the MCG RLC bearer serving a radio bearer when the radio bearer is terminated in the MN and in the SN. Remove “reset MCG MAC” in section 5.3.5.13.8 for Subsequent CPAC execution.**

## 2.2 [E220]

During the ASN.1 review period, [E220] is proposed, and this issue is descripted as follow.

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| --- |
| **[RIL]**: E220 **[Delegate]**: Ericsson (Cecilia) **[WI]**: Mob **[Class]**: 2 **[Status]**: ToDo **[TDoc]**: None **[Proposed Conclusion]**:  **[Description]**: It is unclear whether sk-Counter can be sent even if the sk-CounterList is configured. That is necessary as legacy PSCell change can happen also when the UE is configured with subsequent CPAC.  **[Proposed Change]**: Check with SA3 whether the use of sk-Counter is supported even if sk-CounterList is configured.  **[Comments]**: |

The RIL is discussed in R2-2404605.

[R2-2404605](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2404605.zip) [E220] Issue on the presence of sk-counter in SCPAC CATT discussion Rel-18 NR\_Mob\_enh2-Core

**Proposal 1: The sk-Counter can be configured for legacy inter-SN PSCell change/addition if subsequent CPAC configuration is configured or included in the same RRC message. No spec change is needed.**

**Proposal 2: The sk-Counter can be configured legacy CPAC if subsequent CPAC configuration is configured or included in the same RRC message. No spec change is needed.**

**Proposal 3: The sk-Counter is absent in the RRCReconfiguration message contained in condRRCReconfig which is for a SCPAC candidate. TP in Annex 1 is adopted.**

*Conclusion:*

**🡺The sk-Counter can be configured for legacy inter-SN PSCell change/addition if subsequent CPAC configuration is configured or included in the same RRC message. No spec change is needed.**

**🡺The sk-Counter can be configured legacy CPAC if subsequent CPAC configuration is configured or included in the same RRC message. No spec change is needed.**

**🡺The sk-Counter is absent in the RRCReconfiguration message contained in condRRCReconfig which is for a SCPAC candidate. Add”** **This field is absent if the RRCReconfiguration message is contained in condRRCReconfig for subsequent CPAC” in the field description of *sk-Counter* and remove the restriction in the field description of *sk-counterConfiguration.***

## 2.3 L2 reset handling at SCPAC execution

In last RAN2 meeting, there was a proposal in R2-2402967 to discuss how to perform L2 reset for MN-terminated SCG bearer and the conclusion was made as follows.

|  |
| --- |
| [R2-2402967](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2402967.zip) Discussion on remaining issues of L2 reset for SCPAC NEC discussion Rel-18 NR\_Mob\_enh2-Core  NEC explains that P1 and P2 should be addressed  - Nokia think that reestablishment is only for anchor point change.  - HW think that for P2, the network can send the reestablish indication directly, no need to have this in the procedure.  - OPPO think for P2, indeed the network can indicate, agree with P1.  - ZTE think p1 is ok, but think this is covered in the current TS,  - Intel think we can just discuss if the explicit flag is sufficient also for P1 ..  **P1, determine what change is needed, if any, in post meeting disc.** |

In this meeting, how to perform L2 reset at SCPAC execution is further discussed in the following paper.

[R2-2404412](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2404412.zip) Discussion on L2 reset for SCPAC execution OPPO, NEC discussion Rel-18 NR\_Mob\_enh2-Core

1. In current RRC specification, the UE always performs RLC re-establishment for a radio bearer with termination point change/security key update, even for the case that the RLC entity is to be released.
2. **For a radio bearer with termination point change/security key update, the UE performs RLC re-establishment for the RLC entity if it is configured in both source configuration and target cell configuration.**

**Proposal 2 L2 reset handling for radio bearers without termination point change or security key update include:**

* 1. **Perform RLC re-establishment for SCG RLC entity if it is configured in both source configuration and target cell configuration.**
  2. **Perform PDCP data recovery for AM DRB if the associated RLC entity is released/re-established.**

*Conclusion:*

**🡺 SCG RLC entity for radio bearers without termination point change or security key update is always re-established and the PDCP data recovery is performed for AM DRB if the associated RLC entity is released/re-established. Adopt the updated TP(Annex 4.3).**

## 2.4 Issue on the presence of *servingSecurityCellSetID*

After RAN2#125bis meeting, based on post email discussion [Post125bis][510], the condition “*condInitialSCPAC*” of *servingSecurityCellSetId* is changed as follow.

|  |  |
| --- | --- |
| *condInitialSCPAC* | The field is mandatory present at the initial configuration of subsequent CPAC for inter-SN CPC or CPA, generated by the MN, which includes at least one inter-SN candidate PSCell supporting subsequent CPAC. The field is absent for any conditional reconfiguration generated by the SN. Otherwise, the field is optional, need M. |

However, the *servingSecurityCellSetID* should be absent for CPA case where there is no serving PSCell and the issue is discussed in both R2-2404606 and R2-2404425.

[R2-2404606](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2404606.zip) Remaining SCPAC issues CATT discussion Rel-18 NR\_Mob\_enh2-Core

**Proposal 3: *servingSecurityCellSetId* is mandatory present at the initial configuration of subsequent CPAC for inter-SN CPC, but should not be present for at the initial configuration of subsequent CPAC for CPA. TP in Annex 3 is adopted.**

[R2-2404415](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2404415.zip) Discussion on remaining issues for SCPAC execution OPPO discussion Rel-18 NR\_Mob\_enh2-Core

**Proposal 5 The servingSecurityCellSetId is not present in the initial configuration of SCPAC for CPA.**

**Proposal 6 Add a NOTE to reflect the agreement that rely on NW to guarantee the validity of servingSecurityCellSetID after normal PSCell change, i.e. NW update the sourceSecurityCellSetID if the SecurityCellSetID of target PScell is different.**

NOTE 1: It is up to network to provide a valid *servingSecurityCellSetId* if the *RRCReconfiguration* message including *reconfigurationWithSync* in *spCellConfig* of an SCG is not applied due to the conditional reconfiguration execution for subsequent CPAC.

*Conclusion:*

**🡺 The servingSecurityCellSetId is not present in the initial configuration of SCPAC for CPA. Adopt the updated TP(Annex 4.4).**

## 2.5 Pending issues of online

[R2-2404439](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2404439.zip) [V138] Discussion on simultaneous evaluation for both condExecutionCond and condExecutionCondSCG vivo, CATT, OPPO, LG Electronics discussion Rel-18 NR\_Mob\_enh2-Core

- Ericsson think the term applicable measID is not defined. Vivo explain that other wordings can be possible.

- Huawei think indeed there is an unclarity.

- Nokia think the NR-DC check is not needed. vivo think this is C147.

* Intention agreeable but TP need updates

**Updated TP: Adopt the updated TP(Annex 4.1) for P1 of R2-2404439.**

*Conclusion:*

**🡺Adopt the updated TP(Annex 4.1) for RIL [V138].**

[R2-2405060](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2405060.zip) [Z062][Z063][Z064] Remaining issues for subsequent CPAC ZTE Corporation discussion Rel-18 NR\_Mob\_enh2-Core

DISCUSSION

- Huawei think both TPs are ok.

- OPPO think no change is needed, think for P1 the legacy text is applicable. ZTE think there is a mismatch between stage-2 and stage-3.

- NEC also agree with intention, think TP for P1 is ok, for P2 need some modification.

- Ericsson agrees with intentions of P1 P2 think TP can be simplified. Think P4 is not needed

- vivo support.

* Direction of P1P2 is agreeable, offline disc TP and whether clarification discussed for P4 is needed/desired.

**Updated P1P2: Adopt the updated TP(Annex4.2) for RIL [Z062][Z063].**

**Proposal 4: RAN2 clarifies that the candidateCellInfoListSubsequentCPC is only included in the CG-Config message contained in the CG-CandidateList message, to imply the association between the candidate cell and the list of execution conditions for the following execution of subsequent CPAC.**

*Conclusion:*

**🡺Adopt the updated TP(Annex4.2) for RIL [Z062][Z063].**

**🡺RAN2 clarifies that the candidateCellInfoListSubsequentCPC is only included in the CG-Config message contained in the CG-CandidateList message, to imply the association between the candidate cell and the list of execution conditions for the following execution of subsequent CPAC.**

[R2-2404483](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2404483.zip) Open issues for subsequent CPAC Ericsson discussion Rel-18 NR\_Mob\_enh2-Core

DISCUSSION

P4

- OPPO agrees, but think it need to be complemented.

- Nokia think this is already covered

P6

- hw think this could be raised directly in SA3. HW think that the UE TS is crystal clear.

- QC agrees that UE beh is clear, not sure why we need to send LS to SA3.

- Ericsson think R2 stage-3 is inconsistent with SA3 stage-2.

- Session chair: no support right now to send LS, (and no willingness to change in R2), can allow to check.

P7

- Nokia wonder why we need exec conditions after measurement config has been released. HW also think the current CR text is ok, and removing this is strange.

- Ericsson think this is SCG config and will anyway be released, HW think this is MCG variable and will not be auto-released by SCG release if not explicit .

- Session Chair: can check offline

* Check offline whether clarifications related to P4 are needed
* On P6, allow companies to check, CB to decide whether to send LS or not, or whether to capture in session notes that there seems to be an inconsistency between SA3 and R2.

**Proposal 4 The check whether the other conditional reconfiguration (with condReconfigId) is a legacy CPC/CPA configuration should be included in the procedure for evaluation of CPA/CPC/CPAC configurations in 5.3.5.13.4.**

**Proposal 6 Send an LS to SA3 to ask** **whether it is acceptable to send a separate sk-counter/security key to the UE and SN when the UE is configured with an sk-CounterList for that SN.**

**Proposal 7 Remove the changes for UE autonomous release of execution conditions at SCG release. Include the corresponding Text Proposal in Annex A4 to 38.331.**

*Conclusion:*

**🡺The check whether the other conditional reconfiguration (with condReconfigId) is a legacy CPC/CPA configuration should be included in the procedure for evaluation of CPA/CPC/CPAC configurations in 5.3.5.13.4.**

**🡺 RAN2 to clarify in session notes that it is acceptable to send a separate sk-counter/security key to the UE and SN when the UE is configured with an sk-CounterList for that SN.**

## 2.6 Other corrections

[R2-2404606](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2404606.zip) Remaining SCPAC issues CATT discussion Rel-18 NR\_Mob\_enh2-Core

Issue on SCPAC configuration updating upon normal PSCell change

**Proposal 1: configurations/fields specific to SCPAC can be configured to UE upon normal PSCell change or normal PCell change. SCPAC configuration nested in legacy CPAC configuration or CHO configuration is not allowed. TP in Annex 1 is adopted.**

Issue on the configuration of *securityCellSetId*

**Proposal 2: For subsequent CPAC for CPA (i.e., *servingSecurityCellSetId* is absent), if at least one of the candidate configuration of subsequent CPAC is configured with *securityCellSetId*, *securityCellSetId* are configured for all the candidate configuration of subsequent CPAC. TP in Annex 2 is adopted.**

*Conclusion:*

[R2-2404415](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2404415.zip) Discussion on remaining issues for SCPAC execution OPPO discussion Rel-18 NR\_Mob\_enh2-Core

Issue on handling of RLC entities at the start of SCPAC execution

**Proposal 1 For each SRB/DRB in current UE configuration, the UE keeps the associated RLC entities, their state variables, buffers and timers at the start of SCPAC execution.**

Issue on release of invalid configuration

**Proposal 2 The UE releases the configurations that were part of the UE configuration before of this subsequent CPAC execution procedure but not part of the selected subsequent CPAC candidate configuration/ subsequent CPAC reference configuration.**

**Proposal 3 The RLC bearer(s) are released if they were part of the UE configuration before of this subsequent CPAC execution procedure but not part of the selected subsequent CPAC candidate configuration/ subsequent CPAC reference configuration.**

Issue on presence of *discardOnPDCP* and *reestablishRLC*

**Proposal 4 Remove the restriction that the NW can not include discardOnPDCP and reestablishRLC for SRB3 in case of SCPAC in SN format.**

*Conclusion:*

**🡺P1P2 in R2-2404606 and P1-P4 in** [**R2-2404415**](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2404415.zip) **are discussed during post email discussion for RRC CR implementation.**

# 3 Conclusion

Based on the offline discussion, we hereby propose that:

**Proposal 1: MCG MAC is not reset at SCPAC execution and the MN needs to use different LCID values for the MCG RLC bearer serving a radio bearer when the radio bearer is terminated in the MN and in the SN. Remove “reset MCG MAC” in section 5.3.5.13.8 for Subsequent CPAC execution.**

**Proposal 2: The sk-Counter can be configured for legacy inter-SN PSCell change/addition if subsequent CPAC configuration is configured or included in the same RRC message. No spec change is needed.**

**Proposal 3: The sk-Counter can be configured legacy CPAC if subsequent CPAC configuration is configured or included in the same RRC message. No spec change is needed.**

**Proposal 4: The sk-Counter is absent in the RRCReconfiguration message contained in condRRCReconfig which is for a SCPAC candidate. Add”** **This field is absent if the RRCReconfiguration message is contained in condRRCReconfig for subsequent CPAC” in the field description of *sk-Counter* and remove the restriction in the field description of *sk-counterConfiguration.***

**Proposal 5: SCG RLC entity for radio bearers without termination point change or security key update is always re-established and the PDCP data recovery is performed for AM DRB if the associated RLC entity is released/re-established. Adopt the updated TP(Annex 4.3).**

**Proposal 6: The servingSecurityCellSetId is not present in the initial configuration of SCPAC for CPA. Adopt the updated TP(Annex 4.4).**

**Proposal 7: Adopt the updated TP(Annex 4.1) for RIL [V138].**

**Proposal 8: Adopt the updated TP(Annex4.2) for RIL [Z062][Z063].**

**Proposal 9: RAN2 clarifies that the candidateCellInfoListSubsequentCPC is only included in the CG-Config message contained in the CG-CandidateList message, to imply the association between the candidate cell and the list of execution conditions for the following execution of subsequent CPAC.**

**Proposal 10: The check whether the other conditional reconfiguration (with condReconfigId) is a legacy CPC/CPA configuration should be included in the procedure for evaluation of CPA/CPC/CPAC configurations in 5.3.5.13.4.**

**Proposal 11: RAN2 to clarify in session notes that it is acceptable to send a separate sk-counter/security key to the UE and SN when the UE is configured with an sk-CounterList for that SN.**

**Proposal 12: P1P2 in R2-2404606 and P1-P4 in** [**R2-2404415**](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2404415.zip) **are discussed during post email discussion for RRC CR implementation.**

# 4 Annex

### 4.1 Updated TP for[V138]

##### 5.3.5.13.4 Conditional reconfiguration evaluation

The UE shall:

1> for each *condReconfigId* within the *VarConditionalReconfig*:

<omitted…>

2> if *condExecutionCondSCG* is configured:

3> in the remainder of the procedure, consider each *measId* indicated in the *condExecutionCondSCG* as a *measId* in the *VarMeasConfig* associated with the SCG *measConfig*;

2> if the *condExecutionCondPSCell* is configured:

3> in the remainder of the procedure, consider each *measId* indicated in the *condExecutionCondPSCell* as a *measId* in the *VarMeasConfig* associated with the MCG *measConfig*;

2> if *condExecutionCond* is configured:

3> if it is configured via SRB3 or configured within *nr-SCG* or within *nr-SecondaryCellGroupConfig* (specified in TS 36.331[10]) via SRB1:

4> in the remainder of the procedure, consider each *measId* indicated in the *condExecutionCond* as a *measId* in the *VarMeasConfig* associated with the SCG *measConfig*;

3> else:

4> in the remainder of the procedure, consider each *measId* indicated in the *condExecutionCond* as a *measId* in the *VarMeasConfig* associated with the MCG *measConfig*;

2> for each *measId* included in the *measIdList* within *VarMeasConfig* indicated in the *condExecutionCond,* *condExecutionCondSCG,* or *condExecutionCondPSCell* associated to *condReconfigId:*

3> if both *condExecutionCond and condExecutionCondSCG* are associated to *condReconfigId* and *subsequentCondReconfig* is included in the entry in MCG *VarConditionalReconfig* associated to this *condReconfigId:*

4> ignore ~~consider~~ the *measId* in *condExecutionCond~~SCG~~* associated to this *condReconfigId* ~~to be applicable~~ *~~measId~~*;

### 4.2 Updated TP for [Z062][Z063]

| ***CondReconfigToAddMod* field descriptions** |
| --- |
| ***condExecutionCond***  The execution condition that needs to be fulfilled in order to trigger the execution of a conditional reconfiguration for CHO, CPA, intra-SN CPC without MN involvement, MN initiated inter-SN CPC, MN initiated subsequent CPAC or SN initiated intra-SN subsequent CPAC without MN involvement. When configuring 2 triggering events (Meas Ids) for a candidate cell, the network ensures that both refer to the same *measObject.* The network configures at most one from *condEventD1, condEventD2* or *condEventT1* for the same candidate cell. For CPA and for MN-initiated inter-SN CPC and for MN initiated subsequent CPAC, the network only indicates *MeasId*(s) associated with *condEventA4*. For intra-SN CPC and for SN initiated intra-SN subsequent CPAC without MN involvement, the network only indicates *MeasId*(s) associated with *condEventA3* or *condEventA5*. |
| ***condExecutionCondSCG***  Contains execution condition that needs to be fulfilled in order to trigger the execution of a conditional reconfiguration for SN initiated inter-SN CPC, SN initiated inter-SN subsequent CPAC, or SN initiated intra-SN subsequent CPAC with MN involvement. The Meas Ids refer to the *measConfig* associated with the SCG. When configuring 2 triggering events (Meas Ids) for a candidate cell, network ensures that both refer to the same *measObject*. For each *condReconfigId*, the network always configures either *condExecutionCond* or *condExecutionCondSCG* (not both). The network only indicates *MeasId*(s) associated with *condEventA3* or *condEventA5*. |

|  |
| --- |
| ***CondExecutionCondToAddMod* field descriptions** |
| ***subsequentCondExecutionCond***  The execution condition that needs to be fulfilled in order to trigger the following execution of a conditional reconfiguration for SN initiated intra-SN subsequent CPAC without MN involvement. When configuring 2 triggering events (Meas Ids) for a candidate cell, the network ensures that both refer to the same *measObject*. The network only indicates *MeasId*(s) associated with *condEventA3* or *condEventA5*. |
| ***subsequentCondExecutionCondSCG***  Contains execution condition that needs to be fulfilled in order to trigger the following execution of a conditional reconfiguration for SN initiated inter-SN subsequent CPAC, SN initiated intra-SN subsequent CPAC with MN involvement, or MN initiated inter-SN subsequent CPAC. The Meas Ids refer to the *measConfig* associated with the SCG. When configuring 2 triggering events (Meas Ids) for a candidate cell, network ensures that both refer to the same *measObject*. The network only indicates *MeasId*(s) associated with *condEventA3* or *condEventA5*. |

### 4.3 Updated TP for L2 reset(P2 in [R2-2404412](file:///C:\Users\mtk65284\Documents\3GPP\tsg_ran\WG2_RL2\RAN2\Docs\R2-2404412.zip))

2> for each *drb-Identity* value included in each *RadioBearerConfig* in the selected subsequent CPAC candidate configuration that is part of the current UE configuration, the UE shall perform the following actions after the end of this procedure:

3> if the *keyToUse* in the *RadioBearerConfig* is different from the *keyToUse* in the current UE configuration;or

3> if the bearer is associated with the secondary key (S-KgNB) as indicated by *keyToUse* in the current UE configuration and a new *sk-Counter* value has been selected due to the conditional reconfiguration execution for subsequent CPAC:

4> if the PDCP entity of this DRB is not configured with *cipheringDisabled*:

5> configure the PDCP entity with the ciphering algorithm and KUPenc key associated with the master key (KgNB) or the secondary key (S-KgNB), as indicated in *keyToUse*, i.e., the ciphering configuration shall be applied to all subsequent PDCP PDUs received and sent by the UE;

4> if the PDCP entity of this DRB is configured with *integrityProtection*:

5> configure the PDCP entity with the integrity protection algorithms according to *securityConfig* and apply the KUPint key associated with the master key (KgNB) or the secondary key (S-KgNB) as indicated in *keyToUse*;

4> if *drb-ContinueROHC* is included in *pdcp-Config*:

5> indicate to lower layer that *drb-ContinueROHC* is configured;

4> if *drb-ContinueEHC-DL* is included in *pdcp-Config*:

5> indicate to lower layer that *drb-ContinueEHC-DL* is configured;

4> if *drb-ContinueEHC-UL* is included in *pdcp-Config*:

5> indicate to lower layer that *drb-ContinueEHC-UL* is configured;

4> if *drb-ContinueUDC* is included in *pdcp-Config*:

5> indicate to lower layer that *drb-ContinueUDC* is configured;

4> trigger the PDCP entity of the bearer to perform PDCP re-establishment as specified in TS 38.323 [5];

4> re-establish the corresponding RLC entity as specified in TS 38.322 [4];

3> else:

4> if there is an associated SCG RLC bearer in the selected subsequent CPAC candidate configuration that is part of the current UE configuration:

5> re-establish the SCG RLC entity as specified in TS 38.322 [4];

4> if the RLC entity of the associated RLC bearer(s) is re-established; or

4> if an associated RLC bearer is released in the selected subsequent CPAC candidate configuration:

5> if the bearer is an AM DRB:

6> trigger the PDCP entity of the bearer to perform PDCP data recovery as specified in TS 38.323 [5];

### 4.4 Updated TP for P5 in R2-2404415

*– ConditionalReconfiguration*

The IE *ConditionalReconfiguration* is used to add, modify and release the configuration of conditional reconfiguration.

***ConditionalReconfiguration* information element**

-- ASN1START

-- TAG-CONDITIONALRECONFIGURATION-START

ConditionalReconfiguration-r16 ::= SEQUENCE {

attemptCondReconfig-r16 ENUMERATED {true} OPTIONAL, -- Cond CHO

condReconfigToRemoveList-r16 CondReconfigToRemoveList-r16 OPTIONAL, -- Need N

condReconfigToAddModList-r16 CondReconfigToAddModList-r16 OPTIONAL, -- Need N

...,

[[

scpac-ReferenceConfiguration-r18 SetupRelease {ReferenceConfiguration-r18} OPTIONAL, -- Need M

servingSecurityCellSetId-r18 SecurityCellSetId-r18 OPTIONAL, -- Need N

sk-CounterConfiguration-r18 SK-CounterConfiguration-r18 OPTIONAL -- Need M

]]

}

CondReconfigToRemoveList-r16 ::= SEQUENCE (SIZE (1.. maxNrofCondCells-r16)) OF CondReconfigId-r16

SK-CounterConfiguration-r18 ::= SEQUENCE {

sk-CounterConfigToReleaseList-r18 SEQUENCE (SIZE (1..maxSecurityCellSet-r18)) OF SecurityCellSetId-r18 OPTIONAL, -- Need N

sk-CounterConfigToAddModList-r18 SEQUENCE (SIZE (1..maxSecurityCellSet-r18)) OF SK-CounterConfig-r18 OPTIONAL -- Need N

}

SK-CounterConfig-r18 ::= SEQUENCE {

securityCellSetId-r18 SecurityCellSetId-r18,

sk-CounterList-r18 SEQUENCE (SIZE (1..maxSK-Counter-r18)) OF SK-Counter

}

SecurityCellSetId-r18 ::= INTEGER (1.. maxSecurityCellSet-r18)

-- TAG-CONDITIONALRECONFIGURATION-STOP

-- ASN1STOP

| ***ConditionalReconfiguration* field descriptions** |
| --- |
| ***attemptCondReconfig***  If present, the UE shall perform conditional reconfiguration if selected cell is a target candidate cell and it is the first cell selection after failure as described in clause 5.3.7.3. |
| ***condReconfigToAddModList***  List of the configuration of candidate SpCells to be added or modified for CHO, CPA or CPC. |
| ***condReconfigToRemoveList***  List of the configuration of candidate SpCells to be removed. |
| ***scpac-ReferenceConfiguration***  Includes the reference configuration for the candidate supporting subsequent CPAC. |
| ***securityCellSetId***  This field is used to determine whether UE should perform security update when conditional reconfiguration containing *subsequentCondReconfig* is executed. If the field *servingSecurityCellSetId* is present, this field is present for all the candidate configuration of subsequent CPAC. |
| ***servingSecurityCellSetId***  This field identifies the security cell set for serving PSCell. The network always provides this field at the initial configuration of subsequent CPAC for inter-SN CPC. The network does not provide this field for any conditional reconfiguration generated by the SN. |
| ***sk-counterConfiguration***  Includes a list of *sk-Counter* from which the UE should select the *sk-counter* used to derive S-KgNB for inter-SN subsequent CPAC. If this field is configured, the network shall not configure the field *sk-Counter* within the *RRCReconfiguration* message for conditional reconfiguration execution for subsequent CPAC. The network always provides this field at the initial configuration of subsequent CPAC for inter-SN CPC or CPA. The network does not provide this field for any conditional reconfiguration generated by the SN. |

|  |  |
| --- | --- |
| **Conditional Presence** | **Explanation** |
| *CHO* | The field is optional present, Need R, if the UE is configured with at least a candidate SpCell for CHO. Otherwise the field is not present. |