

Agenda Item: 10.4.1.3.1

Source: Ericsson

Title: OFFLINE#22 LTE re-establishment and resume while using NR PDCP
(Ericsson)

Document for: Discussion, Decision

1 Introduction

The issue of LTE re-establishment in case NR PDCP was configured for some bearers (either in EN-DC or standalone LTE) was discussed, and the outcome was:

- [R2-1713388](#) LTE re-establishment when using NR PDCP (TP to 36.331 and 38.331) Ericsson discussion Rel-15 NR_newRAT-Core
- Lenovo think this reduces the chances to successfully re-establishment. Ericsson think in this case it would result in extra reconfiguration when the cell does support NR PDCP.
 - IDC think the common case is reestablishment to a cell that does support NR PDCP.
 - Intel wonder why reject is needed and full configuration is not used.
 - HTC think that full configuration is not possible in the re-establishment , it can only be done in the first reconfiguration.
 - OPPO think this proposal has some benefit when the cell supports EN-DC.
- ⇒ Offline discussion to progress the SRB1 issue to ensure that the mechanism works when the UE attempts to re-establish on an eNB that supports EN-DC, and when the UE attempts to re-establish on a legacy eNB that has the context but can not understand the full context. (Offline discussion #22, Ericsson)

Agreements

- 1 For re-establishment in LTE, UE releases the lower layer SCG configuration (i.e. nr-secondaryCellGroupConfig) at RRC re-establishment while the DRB configuration (incl. the NR PDCP configuration received in radioBearerConfig) is kept.

The issue of NR PDCP version preservation during LTE suspend/resume was also discussed:

- [R2-1713399](#) Discussion and TP on preserving NR PDCP version Ericsson discussion Rel-15 NR_newRAT-Core
- OPPO think this should be discussed together with re-establishment. Samsung have the same view.
 - Ericsson think this case is different as an additional reconfiguration is not always needed but if we change to LTE PDCP then an extra reconfiguration step will be needed
 - Intel think this case has the same issue with legacy eNBs as the re-establishment.
 - LG think this requires that all cells in the resume area will have to support NE-DC and NR PDCP.
- ⇒ Can be discussed within the scope of offline discussion #22

The purpose of this offline is:

- discuss the different ways of performing re-establishment in cases where NR PDCP was used for SRB1, and to agree on a solution that works for both re-establishment in EN-DC capable as well legacy eNBs.
- discuss the different ways of performing the resume operation in cases where NR PDCP was used for SRB1 and/or any other radio bearers

2 Problem description

2.1 LTE re-establishment procedure

The purpose of the LTE re-establishment procedure is to re-establish the RRC connection upon detecting radio link failure, handover failure, mobility from E-UTRA failure, integrity check failure on SRBs or RRC connection reconfiguration failure. Re-establishment involves the resumption of SRB1, the re-activation of security and the configuration of only the PCell (i.e. CA or DC operations are not re-established)

When the target eNB get a re-establishment request, it identifies the source eNB/cell from the *ReestabUE-Identity* included in the request, and can send an *RLF Indication* X2 message to the source eNB. The source eNB may respond with a Handover Request message that includes the UE context (RRC context and S1 context). If the target eNB is able to understand the UE context, re-establishment succeeds and the target sends an *RRCCConnectionReestablishment* message to the UE. If the target does not receive the UE context or it doesn't understand the context, it may reject the re-establishment and the UE has to go to RRC_IDLE to re-connect. If the target doesn't understand the RRC context but can understand the S1 context, it doesn't necessarily should reject the re-establishment and can use still respond with *RRCCConnectionReestablishment* and later use full reconfiguration to reconfigure the bearers based on the S1 context.

In case of re-establishment success, SRB1 operation resumes while the operation of other radio bearers (SRB2 and DRBs) remains suspended. If AS security has not been activated, the UE does not initiate the procedure but instead moves to RRC_IDLE directly.

E-UTRAN applies the re-establishment procedure as follows:

- When AS security has been activated:
 - to reconfigure SRB1 and to resume data transfer only for this RB;
 - to re-activate AS security without changing algorithms.

After this, the UE sends the *RRCCConnectionReestablishmentComplete* message, and the target eNB responds by sending an *RRCCConnectionReconfiguration* message to reconfigure SRB2 and the DRBs.

The RRC connection re-establishment procedure flow is shown in Figures 1 (success case) and Figure 2 (failure case). SRB0 is used for sending the *RRCCConnectionReestablishmentRequest*, *RRCCConnectionReestablishment* and *RRCCConnectionReestablishmentReject* messages, while *RRCCConnectionReestablishmentComplete* uses SRB1.

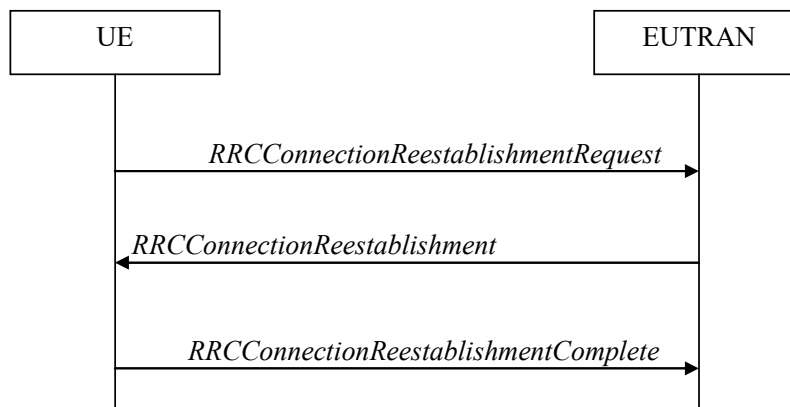


Figure 1: RRC connection re-establishment, successful

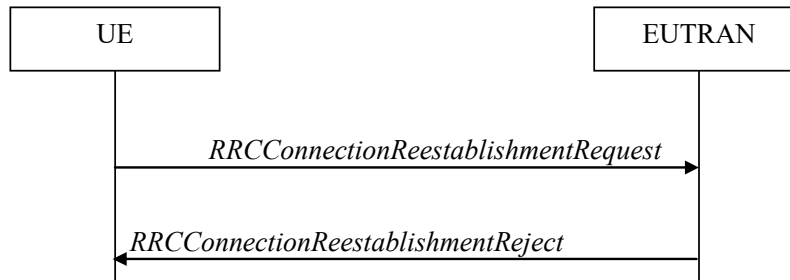


Figure 2: RRC connection re-establishment, failure

2.2 LTE Suspend/Resume procedure

The RRC suspend/resume functionality has been introduced in LTE rel-13. A suspended UE can be considered to be in an intermediate state between IDLE and CONNECTED, where the UE AS context is kept both at the UE and RAN, and the UE can be seen as if it is in connected mode but suspended from the CN point of view and in IDLE mode from the RAN point of view. The advantage of operating in this mode is reduced signaling and faster transition to CONNECTED mode as compared to legacy IDLE-CONNECTED mode transitions, while maintaining the UE power saving advantages of IDLE mode.

When a decision is made by the network to move the UE to suspended state, the eNB sends the UE an *RRCCConnectionRelease* message with the release cause value of *rrc-suspend* and it is also provided with a *Resume ID*. The UE stores the ID and UE AS context (including the current RRC configuration, the current security context, the PDCP state including ROHC state, C-RNTI used in the source PCell, the cellIdentity and the physical cell identity of the source PCell); re-establishes all RLC entities (both for SRBs and DRBs); and suspends all DRBs and SRBs except SRB0.

When the UE later on wants to resume the connection (in response to an UL data to be sent or a paging request for DL data), it sends an *RRCCConnectionResumeRequest* message with the saved *Resume ID*. If the resume operation is performed in an eNB other than the eNB that was serving the UE when the UE was suspended, the new eNB can perform a context fetch by using the *Retrieve UE Context* X2 procedure from the old eNB (as the Resume ID includes information about the old eNB/cell). Upon getting the context (if resuming on a new eNB) or if the resumption was in the same eNB, the target eNB responds with an *RRCCConnectionResume* message, and both the UE and eNB restore the saved UE context, and data transmission/reception from/to the UE can be resumed.

The RRC connection resume procedure flow is shown in Figures 3 (success case), Figure 4 (fallback to RRC connection establishment) and Figure 5 (network reject or release) show the resume procedure in LTE. SRB0 is used for sending the *RRCCConnectionResumeRequest*, *RRCCConnectionSetup* and *RRCCConnectionReestablishmentReject*, while *RRCCConnectionResume* and *RRCCConnectionResumeComplete* messages use SRB1.

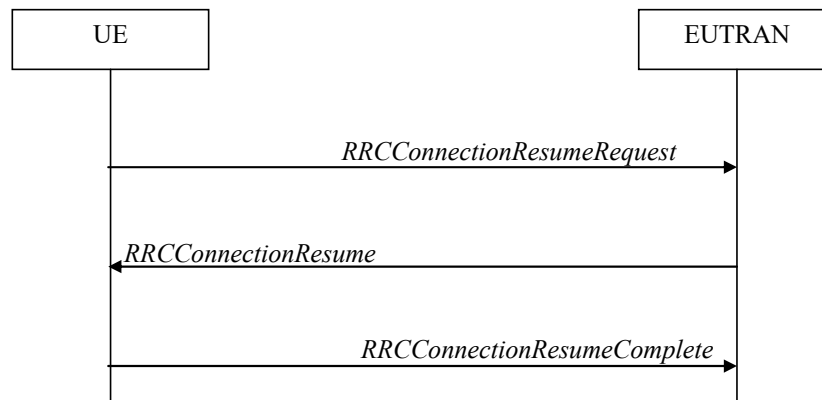


Figure 3: RRC connection resume, successful

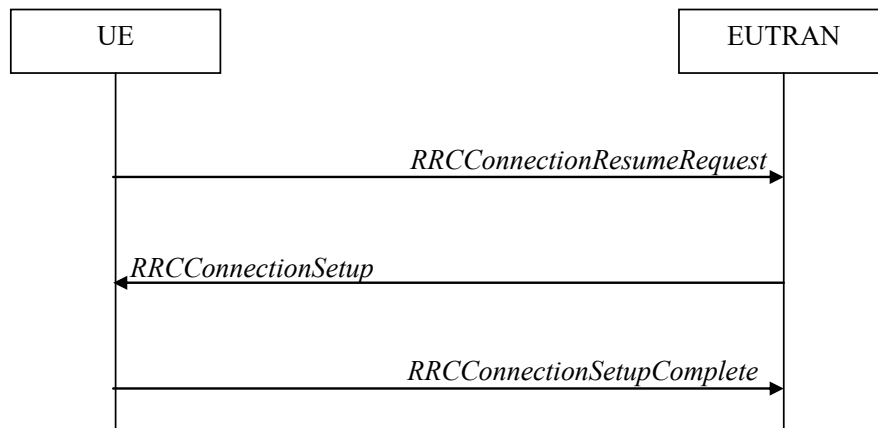


Figure 4: RRC connection resume fallback to RRC connection establishment, successful

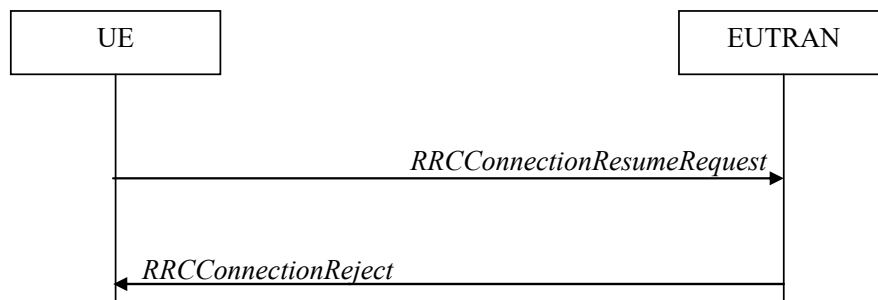


Figure 5: RRC connection resume, network reject or release

The main difference between resume and re-establishment are (from procedural perspective):

- SRB1 is used for the *RRCCConnectionResume* message, while SRB0 is used for the *RRCCConnectionReestablishment* message
- The *RRCCConnectionResume* message, unlike the *RRCCConnectionReestablishment* message, can contain the SRB2/DRB configuration, and thus *RRCCConnectionReconfiguration* is not needed after resume (while it is necessary in the re-establishment case to reconfigure SRB2/DRBs)

2.3 Re-establishment in case NR PDCP was used

If the source eNB is EN-DC capable, it is possible that SRB1 (and other RBs) was configured with NR PDCP (even if the UE was not in EN-DC). This may cause problems if the target eNB is a legacy eNB. The table below illustrates the problem.

Table 1: Different cases of PDCP version usage for SRB1 and support of NR PDCP at the source and target eNBs

		Source eNB = legacy Target eNB = legacy	Source eNB = legacy Target eNB = NR capable	Source eNB = NR capable Target eNB = legacy	Source eNB = NR capable Target eNB = NR capable
SRB1 uses LTE PDCP		A	B	C	D
SRB1 uses		Not applicable	Not applicable	E	F

NR PDCP					
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For cases A to D, there will be no issue because LTE PDCP is used for SRB1, and both source and target eNBs understand that. Case F is also OK because both source and target are EN-DC capable.

In Case E, if the UE resumes with re-establishing SRB1 with NR PDCP, then RRC communication with the target will not be possible (even the *RRCConnectionReestablishmentComplete* message can't be received at the target eNB). The target eNB's behaviour is also not clear upon getting a UE context that it (partially) doesn't understand.

2.4 Resume in case NR PDCP was used

The different cases of table 1 are still relevant in the resume case. But there are two major differences to consider:

- SRB1 is used for the Resume message, so if both the UE and the target eNB use the same PDCP version, even the Resume message may not be understood by the UE.
- No *RRCConnectionReconfiguration* after resume is required (i.e. Resume message contains radio resource configuration)

3 Possible solutions

3.1 Re-establishment

During the online discussion and offline discussion with some companies afterwards, several ways of solving the problem were identified:

Solution 1: UE always falls back to using LTE PDCP on re-establishment

- If target eNB doesn't support EN-DC, and it doesn't understand the RRC Context, it will use the S1 context to do full reconfiguration of the bearers
- If target eNB supports EN-DC, the target will first setup SRB1 with LTE PDCP, and can use the *RRCConnectionReconfiguration* message to revert the PDCP of SRB1 back to NR.

Solution 2: target eNB supporting EN-DC includes a flag in *RRCConnectionReestablishment* that indicates that it can support EN-DC

- If UE gets such an indication, it uses the same PDCP version that it was using before failure
- If UE doesn't get such an indication, UE falls back to using LTE PDCP

Solution 3: UE re-establishes using the same PDCP version that it was using before failure

- If target eNB doesn't support EN-DC, and it doesn't understand the RRC context, it will reject the re-establishment; or
- If source eNB knows that the target eNB doesn't support EN-DC, it will not forward the UE context to the target (i.e. it will not respond with Handover Request upon getting RLF indication), forcing the target eNB to reject the re-establishment.

Solution 4: UE determines which PDCP is used for re-establishment procedure using "nr-Indication" in SIB.

Solution4a: UE determines which PDCP is used for re-establishment procedure using one new indication (eNB support NR PDCP) in SIB2/3.

Solution 5: The SRB1 is reverted to LTE PDCP upon initiation of re-establishment

- If target eNB does not have the UE AS context or receive the UE AS context but does not support full configuration for handling different eNB release, it will always reject the RRC Connection Re-establishment request.
- If target eNB does not support EN-DC and receive the UE AS context but support full configuration for handling different eNB release, it will respond with RRC Connection Re-establishment (with SRB1 revert to LTE PDCP) and then perform Full configuration in the first RRC Connection Reconfiguration message
- If target eNB supports EN-DC and receive the UE AS context, it will respond with RRC Connection Re-establishment including the RadioBearerConfiguration containing the SRB1 NR PDCP configuration. Upon receiving this, the UE change the PDCP version of SRB1 from LTE PDCP to NR PDCP.

3.2 Resume

3.2.1 SRB1 aspects

Solution 1: UE always falls back to using LTE PDCP on SRB1 during resume

- If target eNB doesn't support EN-DC, and it doesn't understand the RRC Context, it needs to send an extra *RRCCConnectionReconfiguration* after the resume to do full reconfiguration of the bearers based on the S1 context
- If target eNB supports EN-DC, the target will first setup SRB1 with LTE PDCP, and can use the *Resume* message to revert the PDCP of SRB1 back to NR.

Solution 2: UE re-establishes using the same PDCP version that it was using before suspension

- If target eNB doesn't support EN-DC, and it doesn't understand the RRC context, it will respond with *RRCCConnectionSetup*, and send an *RRCCConnectionReconfiguration* after the connection setup to do full reconfiguration of the bearers based on the S1 context ; or
- If source eNB knows that the target eNB doesn't support EN-DC, it will not forward the UE context to the target (i.e. it will respond with Retrieve UE Context Failure), forcing the target eNB to reject the resume or use *RRCCConnectionSetup* (but this time, since no S1 UE context is available, we will need NAS recovery to re-setup the bearers)

Solution 3: UE determines which PDCP is used for resume procedure using “nr-Indication” in SIB.

- **Solution3a: UE determines which PDCP is used for resume procedure using one new indication (eNB support NR PDCP) in SIB2/3.**

Solution 4: The SRB1 is reverted to LTE PDCP upon initiation of resumption

- If target eNB cannot retrieve the UE context or does not comprehend it and does not perform full configuration, it will always reject the RRC Connection Resume request.
- If target eNB can retrieve the UE context but does not comprehend it (i.e. not supporting EN-DC) and support full configuration, it will perform RRC Resume with Full configuration over SRB1 with LTE PDCP. With the full configuration, the SRB1/2 and DRB can all be switched to LTE PDCP
- If target eNB supports EN-DC and successfully retrieve the UE context, it will respond with RRC Connection Resume including the RadioBearerConfiguration containing the SRB1 NR PDCP configuration. Upon receiving this, the UE should change the PDCP version of SRB1 from LTE PDCP to NR PDCP.

3.2.2 SRB2/DRB aspects

In the case of re-establishment, we have already agreed that:

Agreements

- 1 For re-establishment in LTE, UE releases the lower layer SCG configuration (i.e. nr-secondaryCellGroupConfig) at RRC re-establishment while the DRB configuration (incl. the NR PDCP configuration received in radioBearerConfig) is kept.

This aspect was not discussed online for the resume case. The keeping of the bearer configuration is even more relevant for the resume case because *RRCCConnectionReconfiguration* is not needed after resume and as such keeping the bearer configuration facilitates the possibility of performing delta configuration via the resume message.

Proposal 1: On LTE suspend, the DRB configuration (incl. the NR PDCP configuration received in radioBearerConfig) is kept.

Regarding the resumption of SRB2/DRBs, since the resume message contains radio bearer configurations, it is natural to extend it to also include NR configurations.

Proposal 2: The resume message to be aligned with RRCCConnectionReconfiguration message to enable configuration of bearers with NR PDCP.

4 Discussion

Question 1: Which solution do you prefer regarding the PDCP version to be used for SRB1 during re-establishment? Why?

Company	Preferred solution	Comments
Ericsson	Solution 3	<ul style="list-style-type: none">- In both Solution1 and 2, mapping of the NR security algorithms to the LTE algorithms is required by both the UE and network (as SRB1 is used to send the <i>RRCCConnectionReestablishmentComplete</i> message). In rel-15, we have a clear mapping/support for this, but this means in the future we might face a problem as new algorithms get introduced in NR (or else have to put a limitation that even in future releases of EN-DC, SRB1 can't use non LTE compatible algorithms)- Keeping the NR PDCP is the most forward compatible solution, i.e. in the future, as more EN-DC capable eNBs are deployed, it will become very unlikely to pop up in an eNB that doesn't support NR PDCP.-Solution 3 has the least standardization impact.
Lenovo	Solution 1 or Solution 4 (proposed by Intel)	<p>Sufficient and sufficiently clear.</p> <p>Solution 3 may not be possible for legacy eNBs since they had no idea about such a case (NR PDCP) and were planning on full configuration after a successful admission control!! Though "preparation between source and target" could ensure that such confusing situation is taken care off but in that case the re-establishment possibility would reduce (only limited target cell prepared for re-establishment)</p>
LG	Solution 4	<p>If the UE was configured with EN-DC, the surrounding neighbor cell are most likely to support EN-DC also. We think that the case moving from source eNB supporting EN-DC to target eNB also supporting EN-DC is much more frequent than otherwise. In addition, moving to pure LTE in the future will be even rarer. Thus,</p>

		<p>we do not prefer the fall-back procedure, solution 1.</p> <p>Solution 3 has the least impact on specification and legacy network, but it is true that the UE has to transit to RRC_IDLE. Compared to accepting re-establishment and performing full configuration, it will take more time to perform initial RRC connection.</p> <p>Regarding solution 2, though it was not discussed and agreed in RAN2, SA2 approved to introduce a SIB indicator for the support of NR as secondary RAT in E-UTRA cell (CR S2-176090). Thus, if we want an approach that changing PDCP according to the eNB capability, the UE can use that indication to decide which PDCP would be used instead of additional bit in RRCConnectionReestablishment message.</p> <p>Based on that, we suggest to slightly change the solution 2 (i.e. solution 4) as below:</p> <p>Solution 4: UE determines which PDCP is used for re-establishment procedure using “nr-Indication” in SIB. (In this solution, “nr-Indication” indicates whether the E-UTRA cell is capable of supporting dual connectivity with locally available NR secondary cell(s) via SIB1, and this already proposed by Qualcomm in R2-1713639 based on the SA2 agreement.)</p> <ul style="list-style-type: none"> - If UE gets a “nr-Indication” as true via SIB1, it uses the same PDCP version that it was using before failure. - If UE doesn’t get a “nr-Indication”, UE falls back to using LTE PDCP. <p>Solution 4 is preferred as long as RAN2 does not reject the SA2 agreement. Otherwise Solution 2 would be better.</p>
CATT	Solution 1	<p>It’s simple and can be used by legacy eNB. No impact on the legacy eNB and specificaiton.</p> <p>The benefit of Solution3 is unclear. It can’t reduce the signalling overhead, because <i>RRCConnectionReconfiguration</i> message is still needed. And even more EN-DC capable eNBs will be deployed in the future, the legacy eNBs are still there. The re-establishment to legacy eNB can not be avoided.</p> <p>Besides the specification impact, Solution 3 also increases the eNB complexity, because the source eNB should distinguish whether the target eNB support EN-DC or not before sending the UE context.</p>
OPPO	Solution 4	<p>We think the key point is whether UE can know if the cell to reestablish support EN-DC or not. Thus solution 4 seems to be straight forward. And one note is that we need to interpret the nr_indicator as EN-DC capable.</p>
Intel	Solution 5	<p>We should first discuss what legacy eNB behaviour should be. To our understanding, the legacy eNB behaviour is:</p> <ul style="list-style-type: none"> • If eNB does not have the UE context, it will always reject the RRC Connection Re-establishment request. • If eNB does not support EN-DC and receive the UE context, , there are two possible legacy network behaviours possible: <ul style="list-style-type: none"> a) It will reject the re-establishment b) it will respond with RRC Connection Re-establishment and then perform Full configuration in the first RRC Connection Reconfiguration message <p>Hence for backward compatibility, both network implementations</p>

		<p>has to be supported. Solution3 mentioned above is not backward compatible and cannot be supported by at least some legacy eNBs using (b).</p> <p>To avoid the impact to legacy eNB, upon initiating the RRC Connection Reestablishment request, the SRB1 should use the default configuration where the PDCP version should be LTE PDCP. A full configuration reverts the PDCP to LTE PDCP for DRB. However, Full configuration does not change SRB1 configuration, UE has to revert to LTE PDCP for SRB1.</p> <p>Then for eNB that supports EN-DC and receive the UE context, it will respond with RRC Connection Re-establishment including the RadioBearerConfiguration containing the SRB1 NR PDCP configuration. Upon receiving this, the UE should change the PDCP version of SRB1 from LTE PDCP to NR PDCP. The first reconfiguration message will decide on SRB2 and the DRB configuration (either keep them as the configuration prior to the re-establishment or perform delta configuration).</p>
Conviva Wireless	Solution 1 or Solution 5.	We are sympathetic to solution 3 but it may require a new behaviour from legacy eNBs considering the proposal that "If target eNB doesn't support EN-DC, and it doesn't understand the RRC context, it will reject the re-establishment".
Nokia	Solution4a	<p>Adding 1 bit indication (NR-PDCP supported) in SIB can help solve all PDCP selection problem in both cases, RRC Connection Reestablishment procedure and RRC Connection Resume procedure.</p> <p>We doubt reusing nr-Indication for NR PDCP supported indication is a good proposal because nr-Indication is designed for 5g marketing advertising and for per PLMN. The NR-PDCP support is for eNB self, which doesn't need per PLMN. Furthermore, eNB who supports EN-DC doesn't means it must support NR PDCP. We already had agreement in this meeting that one-step bearer type change + PDCP type change can be supported. So one explicit indication for NR PDCP support in SIB2/3 is more attractive to cover all cases.</p>
Huawei	Solution 1	We don't see the need for any new indication. It is simple to always fall back to LTE PDCP upon re-establishment/resume. For re-establishment, the network can configure NR PDCP in the first reconfiguration if it wishes to. For resume, it should be possible in the resume message to reconfigure SRB1 to use NR PDCP.
Spreadtrum	Solution 4	<p>For eNB supporting EN DC, an indicator can be added into its SI. No impacts to the legacy eNBs.</p> <p>The UE can check the indicator and decide to use LTE PDCP or NR PDCP for connection reestablishment. This way can solve security algorithm problems too.</p>

Question 2: Which solution do you prefer regarding the PDCP version to be used for SRB1 during resume? Why?

Company	Preferred solution	Comments
Ericsson	Solution 2	The reason is similar to the case for re-establishment.
Intel	Solution 2	For backward compatibility with an eNB that implements Full

		<p>configuration in msg 4 Resume message sent with LTE PDCP, UE should already revert to LTE PDCP before sending Resume request.</p> <p>For the case the eNB supports EN-DC and successfully retrieve the UE context, it will respond with RRC Connection Resume including the RadioBearerConfiguration containing the SRB1 NR PDCP configuration. Upon receiving this, the UE should change the PDCP version of SRB1 from LTE PDCP to NR PDCP.</p>
LG	Solution 3+3a	We also think that UE can determine which PDCP to use for resume procedure using one indication broadcasted in SIB. And we think that the reconfiguration procedure that always accompanies the resume procedure is not beneficial.
OPPO	3+3a	Agree with LG and align with the reestablishment case.
Lenovo/ MotM	Solution 1	Same reasons as above for re-est case.
Nokia	Solution 3+3a	It has been discussed in our feedback to Q1.
CATT	Solution 2	<p>If target eNB cannot retrieve the UE context or does not comprehend it , it can reject the RRC Connection Resume request or send RRC Connection Setup to trigger UE to fallback. So there is no problem for legacy eNB.</p> <p>If target eNB support NR PDCP and successfully retrieve the UE context, it can resume UE with NR PDCP.</p>
Spreadtrum	3+3a	Share LG's view

Question 3: What is your view regarding proposal 2 on the SRB2/DRB aspects during resumption?

Regarding the resumption of SRB2/DRBs, since the resume message contains radio bearer configurations, it is natural to extend it to also include NR configurations.

Proposal 2: The resume message to be aligned with RRCConnectionReconfiguration message to enable configuration of bearers with NR PDCP.

Company	Comments
Intel	<p>The PDCP version for SRB2/DRB will depend on whether (i) UE receives a full configuration flag with no radio bearer configuration, (ii) UE receives a full configuration flag with radio bearer configuration or UE receives only optionally radio bearer configuration.</p> <p>If (i), SRB2/DRB is reverted to LTE PDCP.</p> <p>If (ii), SRB2/DRB stays with NR PDCP</p>
LG	We agree with Intel.
Lenovo/ MotM	Agree with Intel.
Nokia	More time needed to check it.
CATT	We agree the proposal 2
Spreadtrum	Agree with Intel

5 Summary

Question 1: Which solution do you prefer regarding the PDCP version to be used for SRB1 during re-establishment?

Solution 1: Lenovo, CATT, Convida, Huawei, Ericsson

Solution 2:

Solution 3:

Solution 4: LG, OPPO, Nokia, Spreadtrum

Solution 5: Intel, Convida

There is an equal preference for solution 1 and 4. However, solution 5 is also a modified version of solution 1 (i.e. revert to LTE PDCP, and later change to NR PDCP if target eNB supports EN-DC). Solution 4 also needs further discussion on the introduction of a new SIB bit or the feasibility of using the 5G indication bit that was already introduced in earlier. Considering this, it is proposed:

Proposal 1: On re-establishment,

- **UE reverts to using LTE PDCP for SRB1**
- **If target eNB supports EN-DC, it can use RRCConnectionReconfiguration to revert the PDCP version of SRB1 or any other bearers to NR**
- **If target eNB doesn't support EN-DC, it can perform full configuration to revert the PDCP version of all bearers to LTE PDCP.**

Question 2: Which solution do you prefer regarding the PDCP version to be used for SRB1 during resume?

Solution 1: Lenovo

Solution 2: Ericsson, Intel, CATT

Solution 3: LG, OPPO, Spreadtrum, Nokia

There was not as many input on this as for the re-establishment.

Solution 3 has got a slight preference, but as agreed in the re-establishment discussion, it requires further discussion about the SIB bit to be introduced/used. Solution 2, will not cause a problem in case the target is legacy as in the re-establishment case, because here the target behaviour is well defined. That is, it will respond with RRCConnectionSetup (while in the re-establishment case, it could still respond with re-establish command, as it can do full reconfiguration later).

Proposal 2: On resume,

- **UE uses the same PDCP version as before suspension for SRB1**
- **If target eNB doesn't support EN-DC and it doesn't understand UE context, it will respond to the resume request with RRCConnectionSetup.**

Regarding the third aspect,

The resume message to be aligned with RRCConnectionReconfiguration message to enable configuration of bearers with NR PDCP.

There seems to be a strong support (except one company, Nokia, who indicated they need to check further)

Proposal 3: The *RRCResume* message to be aligned with *RRCConnectionReconfiguration* message to enable configuration of bearers with NR PDCP.