3GPP TSG-RAN WG2 #124 R2-23xxxxx

**Chicago, USA, 13th – 17th November 2023**

Agenda Item: 7.2.1

Source: Ericsson

Title: [Post123bis][410][POS] Rel-18 positioning RRC CR (Ericsson)

Document for: Discussion, Decision

# Introduction

This is to kick off the email discussion.

* [Post123bis][410][POS] Rel-18 positioning RRC CR (Ericsson)

 Scope: Review the running CR and develop an open issue list.

 Intended outcome: Draft CR and open issue list for next meeting

 Deadline: Medium (2 weeks)

# 2 Discussion

## 2.1 Sidelink CR

For Sidelink resource pool configuration ASN.1 implementation, there are two Options:

1) Reuse Legacy IE and update the field description: adding additional part into existing IEs

2) Create a new IE for SL positioning resource pool configuration

A document with both versions have been provided [here](https://www.3gpp.org/ftp/Email_Discussions/RAN2/%5BRAN2%23123bis%5D/%5BPost123bis%5D%5B410%5D%5BPOS%5D%20Rel-18%20positioning%20RRC%20CR%20%28Ericsson%29/Sidelink%20Positioning%20RRC%20Changes%20ASN1%20Option1%20Option2.docx).

Please provide your comments on which Option is preferred.

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| Company Name | Option 1 or Option 2 | Comments on preferred Option and additionally on the CR, if any: |
| ZTE | Option 2 |  |
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## 2.2 Bandwidth Aggregation CR

Please provide your comments on the [CR](https://www.3gpp.org/ftp/Email_Discussions/RAN2/%5BRAN2%23123bis%5D/%5BPost123bis%5D%5B410%5D%5BPOS%5D%20Rel-18%20positioning%20RRC%20CR%20%28Ericsson%29/SRS%20Bandwidth%20Aggregation%20CR.docx).

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| Company Name | Comments |
| ZTE | For RRC INACTIVE, R1’s parameter list says to have an IE containing < Indicates the frequency information (e.g. point A, offset to carrier) of one or two additional carrier(s) with respective SRS configurations where the newly introduced carrier(s) and the carrier of the initial BWP should be intra-band contiguous carriers.>;And an IE containing < Provides positioning SRS configuration with SRS aggregation for UE in RRC\_INACTIVE state>.So we think these two should be saparately configured in RRCRelease, rather than quote SRS-PosResourceSetLinkedForAggBW. |
| ZTE | SRSPosIntraBandCCForAggBW-r18 ::= SEQUENCE { servCellIndexList-r18 SEQUENCE (SIZE(1.. maxNrOfLinkedSRS-PosResourceSet-r18)) OF ServCellIndex, cc-CombinationList-r18 SEQUENCE (SIZE(1.. maxNrOfLinkedSRS-PosResourceSet-r18)) OF UplinkDedicated}Does this IE necessary? SRS-PosResourceSetLinkedForAggBW already contains serving cell index  |
| ZTE | SRS-PosResourceSetLinkedForAggBW-r18 ::= SEQUENCE { srs-PosResourceSetLinked-r18 SRS-PosResourceSetId-r16,  carrier-r18 ARFCN-ValueNR, OPTIONAL, --Need M servingCellIndex-r18 ServingCellIndex OPTIONAL --Need M}This should also add UL BWP ID since SRS resource set ID is unique among a BWP. |
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## 2.3 RedCaP CR

Please provide your comments on the [CR](https://www.3gpp.org/ftp/Email_Discussions/RAN2/%5BRAN2%23123bis%5D/%5BPost123bis%5D%5B410%5D%5BPOS%5D%20Rel-18%20positioning%20RRC%20CR%20%28Ericsson%29/RedCap%20CR.docx).

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| Company Name | Comments |
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## 2.4 CPP CR

For CPP CR, Pls provide your view:

1) No RRC Impact

2) Agree that there is RRC impact and Please provide your comments on the [CR](https://www.3gpp.org/ftp/Email_Discussions/RAN2/%5BRAN2%23123bis%5D/%5BPost123bis%5D%5B410%5D%5BPOS%5D%20Rel-18%20positioning%20RRC%20CR%20%28Ericsson%29/Carrier%20Phase%20Positioning%20CR.docx).

3) Wait for RAN1 Guidance

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| Company Name | Option 1/2/3 | Comments |
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## 2.5 LPHAP

Please provide your comments on the LPHAP [CR](https://www.3gpp.org/ftp/Email_Discussions/RAN2/%5BRAN2%23123bis%5D/%5BPost123bis%5D%5B410%5D%5BPOS%5D%20Rel-18%20positioning%20RRC%20CR%20%28Ericsson%29/LPHAP%20CR.docx).

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| Company Name | Comments |
| ZTE | **5.3.13.2 Initiation**The UE initiates the procedure when upper layers or AS (when responding to RAN paging, upon triggering RNA updates while the UE is in RRC\_INACTIVE, for NR sidelink communication/discovery/V2X sidelink communication as specified in clause 5.3.13.1a, upon SRS request or activation in RRC\_INACTIVE) requests the resume of a suspended RRC connection or requests the resume for initiating SDT as specified in clause 5.3.13.1b. |
| ZTE | 1> else if cell reselection occurs when *srs-PosRRC-InactiveValidityArea* is configured and if the cell is included in the *srs-PosConfigValidityArea*:2> if *autonomousTA-AdjustmentEnabled* is configured;3> autonomously adjusts the time advance value.3> autonomously adjusts the stored RSRP for TA validation. |
| ZTE | MAC spec has the procedure to store the RSRP. We think RRC spec does not need to say it again.

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| 38.321:The MAC entity shall:1> if the UE receives configuration for SRS transmission in RRC\_INACTIVE:2> store the RSRP of the downlink pathloss reference with the current RSRP value of the downlink pathloss reference as in TS 38.331 [5].Q |
| 331 running CR:1> acquire *SIB2,* if stored version is invalid;1> if *nrofSS-BlocksToAverage* or *absThreshSS-BlocksConsolidation* is not present or if a*bsThreshSS-BlocksConsolidation* is present and the highest beam measurement quantity value is below or equal to *absThreshSS-BlocksConsolidation*:2> derive the downlink pathloss reference RSRP for TA validation as the highest beam measurement quantity value, where each beam measurement quantity is described in TS 38.215 [24];2> store the derived RSRP; |

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| ZTE | inactivePosSRS-ValidityAreaTAT-r18 ENUMERATED {ms1280, ms1920, ms2560, ms5120, ms10240, ms20480, ms40960, infinity}this IE should be optional with need M |
| ZTE | R1’s parameter list says: pathlossReferenceRS-Pos may or may not be present. When pathloss RS is absent in the configuration, the UE determines the pathloss RS using a RS resource obtained from the SS/PBCH block of the camping cell that the UE uses to obtain MIB as the pathloss RS.Does this need to be captured in the field description in RRC? |

## Open Questions for LPHAP

1) whether SRS configuration will be released after UE moves out of validity area or only the timer is stopped.;

1> else if cell reselection occurs when *srs-PosRRC-InactiveValidityArea* is configured and if the cell is not included in the *srs-PosConfigValidityArea*:

 2> indicate to the lower layer to stop *inactivePosSRS-ValidityAreaTAT*;

 2> release the srs-PosRRC-InactiveValidityArea.

Please provide your view on above:

1) Yes the release cause is fine

2) No the release cause is not needed

3) Other: should be discussed via contributions

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| Company Name | Yes/No/Other |  |
| ZTE | 2 or 3 | Prefer to not release the SRS configuration only due to moving out of validity area. In Rel-17 UE releases when cell-reselection, and to address the issue that UE moves out of the cell and quickly switches back, RRC has add a note to say gNB will always provide full SRS configuration in RRC\_INACTIVE. To avoid patching in Rel-18, we should allow UE keep the SRS configuration when UE moves out of area |
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**2)** Currently, there is an FFS on how to distinguish between preconfigured SRS validity area configuration and normal SRS configuration with validity area and further when to start/stop the timer.

2> if *srs-PosRRC-InactiveValidityArea* is configured:

3> apply the configuration and instruct MAC to start the *inactivePosSRS-ValidityAreaTAT*;

Editor’s Note: For preconfigured SRS, there is no need to start the *inactivePosSRS-ValidityAreaTAT* immediately. But for Periodic SRS the above clause would be needed. Agreement says: “Periodic SRS is supported to be configured with validity area. This agreement does not affect preconfigured SRS.” How to differentiate normal and preconfigured SRS. FFS How to start/stop the timer.

Rapporteur suggests that this should be resolved with contribution to next meeting.

## 2.6 Any other comments

Please provide any other comments below.

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| Company Name | Comments |
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# Conclusion

In the previous sections we made the following observations:

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

# References