**3GPP TSG-RAN WG2 Meeting #126R2-24xxxxx**

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

Agenda Item: 7.2.1

Source: Ericsson

Title: [Post126][407][POS] Rel-18 positioning RRC CR (Ericsson)

Document for: Discussion, Decision

# Introduction

This is to kick off the email discussion.

* [Post126][407][POS] Rel-18 positioning RRC CR (Ericsson)

 Scope: Update the CR in R2-2405257 in line with decisions of this meeting, including implementation of constraints on configuration of SL-PRS carrier in SIB23/preconfiguration. Late-arriving parameter updates from RAN1 can be taken into account if possible.

 Intended outcome: Agreed CR in R2-2405884

 Deadline: Short (for RP)

# 2 Discussion

## 2.1 LPHAP

Please provide your comments on the LPHAP changes

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| Company Name | Comments  |
| Samsung | [Application of SRS pre-configuration after receiving RRCRelease message]Regarding the activation of pre-configured SRS, the following agreements are made in RAN2.* For preconfigured multiple SRS configurations, confirm the WA, i.e. UE sends a new ResumeCause of RRCResumeRequest message to indicate the change or activations of SRS configuration when different SRS configuration is selected due to change of validity area, or when a new SRS configuration is selected where none was previously in use.
* For preconfigured SRS, when the UE moves to a new validity area, it does not continue transmitting SRS until it has gone through RRCResumeRequest/RRCRelease procedure. No additional acknowledgement message is needed for the activation request, i.e., the UE can apply the preconfiguration after it receives the RRCRelease.
* The access category for RRCResumeRequest is provided by the upper layer when the RRCResumeRequest is triggered by SRS configuration activation request. H906 moves to Agreed.

Based on the agreement above, the UE procedure to apply the SRS pre-configuration should be like below.1. Upon moving to a new validity area or request from upper layer, the UE sends RRCResumeRequest message with the new resume cause.2. For the case of moving to a new validity area, the UE stops transmitting SRS.3. For the case of moving to a new validity area, the UE can apply the pre-configuration after receiving RRCRelease message,.In our view, some of the above procedure are not captured correctly in the current RRC CR and thus we propose the following corrections.**- Proposal 1 (to capture the blue part correctly):**

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| [5.3.13.6]3> if the selected cell and previously camped cell are in the different *srs-PosConfigValidityArea*; 4> indicate to the lower layer to stop *inactivePosSRS-ValidityAreaTAT.*  4> initiate RRC connection resume procedure in 5.3.13.2. |

**-Proposal 2 (to capture the 3rd procedure correctly):**\* With the current description in 5.7.X, the UE can apply the SRS pre-configuration only when there is a request from upper layer.\* However, for the yellow case of moving to a new validity area, there is no request from upper layer. In this case, the UE should be able to apply the pre-configuration upon receiving *RRCRelease* meesage if the last RRC Resume procedure was initiated for activation of preconfigured SRS for Positioning.

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| [5.7.X]When configured with *srs-PosRRC-InactiveValidityAreaPreConfigList*, the UE shall:1> upon receiving request from upper layers that would require transmission of SRS for positioning; or1> upon receiving *RRCRelease* message after sending the *RRCResumeRequest* message with the *resumeCause* set to *srs-PosConfigOrActivationReq*:2> if the current camped cell is included in any *srs-PosConfigValidityArea* in the *srs-PosRRC-InactiveValidityAreaPreConfigList*:3> apply the corresponding *srs-PosRRC-InactiveValidityAreaPreConfig* and instruct lower layers to initiate SRS for Positioning transmission. |

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## 2.2 Sidelink

Please provide your comments on Sidelink changes.

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| Company Name | Comments  |
| ZTE | SIB23:

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| ***sl-PosFreqInfoList***This field indicates the NR sidelink positioning carrier frequencies for SL-PRS transmission and reception. In this release, only one entry of *sl-PosFreqInfoList* is configured with *sl-BWP-PRS-PoolConfig*. |

If only one entry of *sl-PosFreqInfoList* can be associated with dedicated pool BWP, then why the SIB23 has to contain multiple entries(a list) of *sl-PosFreqInfoList*? SIB23 is to indicate frequency of dedicate pool, so we think the following should be adopted:

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| ***sl-PosFreqInfoList***This field indicates the NR sidelink positioning carrier frequencies for SL-PRS transmission and reception. In this release, only one entry of SL-FreqConfigCommon is contained in sl-PosFreqInfoList-r18. |

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## 2.3 Bandwidth Aggregation

Please provide your comments on the bandwidth aggregation changes.

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| Company Name | Comments  |
| ZTE | SRS-PosResourceSetLinkedForAggBWList-r18 ::= SEQUENCE (SIZE(1..maxNrOfLinkedSRS-PosResourceSet-r18)) OF SRS-PosResourceSetLinkedForAggBW-r18The yellow part should be 2, since when the list only contains one entry of SRS-PosResourceSetLinkedForAggBW-r18, there is only one SRS resource set configured. But an aggregation requires at least 2 entries, i.e., two aggregated SRS resource sets. |
| ZTE |  SRS-InactivePosResourceSetLinkedForAggBWList-r18 ::= SEQUENCE (SIZE (1..maxNrOfLinkedSRS-PosResourceSet-r18)) OF SRS-PosResourceSetLinkedForAggBW-r18If here in RRC INACTIVE, the yellow part is changed to 3, then the one of the configured aggregated carriers in this Rel-18 IE should compulsively contain the Rel-17 configured carrier (i.e., configured in SRS-PosRRC-InactiveConfig-r17).It is not a good design from configuration/signaling perspective. So we suggest to change the yellow IE to be 2 |
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## 2.4 REDCAP

Please provide your comments on the RedCap changes

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| Company Name | Comments  |
| ZTE | SRS-PosTx-Hopping-r18 ::= SEQUENCE { srs-PosConfig-r18 SRS-PosConfig-r17, bwp-r18 BWP OPTIONAL, -- Need R inactivePosSRS-TimeAlignmentTimer-r18 TimeAlignmentTimer OPTIONAL, -- Need M inactivePosSRS-RSRP-ChangeThreshold-r18 RSRP-ChangeThreshold-r17 OPTIONAL, -- Need M srs-PosUplinkTransmissionWindowConfig-r18 SetupRelease { SRS-PosUplinkTransmissionWindowConfig-r18 } OPTIONAL, -- Need M ...}Why the inactivePosSRS-TimeAlignmentTimer and inactivePosSRS-RSRP-ChangeThreshold are configured in hopping configuration?? |
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## 2.5 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