**3GPP TSG-RAN WG2 Meeting #125bisR2-24xxxxx**

**Changsha, China, 15th – 19th April 2024**

Agenda Item: 7.2.1

Source: Ericsson

Title: [Post125bis][408][POS] Rel-18 positioning RRC CR (Ericsson)

Document for: Discussion, Decision

# Introduction

This is to kick off the email discussion.

* [Post125bis][408][POS] Rel-18 positioning RRC CR (Ericsson)

 Scope: Update and check the Rel-18 positioning CR to 38.331.

 Intended outcome: Endorsed CR in R2-2403819

 Deadline: Short

# 2 RIL O800

RIL O800 raises the question: *Have we made agreement that sl-RxPool and/or sl-PRS-RxPool should be only included in handover message but not other RRC dedicated message?*

The description for SL Positioning mimics the SL Communication description:

Below is what is captured for SL Communication:

### 5.8.7 Sidelink communication reception

A UE capable of NR sidelink communication that is configured by upper layers to receive NR sidelink communication shall:

1> if the conditions for NR sidelink communication operation as defined in 5.8.2 are met:

2> if the frequency used for NR sidelink communication is included in *sl-FreqInfoToAddModList*/*sl-FreqInfoToAddModListExt* in *RRCReconfiguration* message or *sl-FreqInfoList*/*sl-FreqInfoListSizeExt* included in *SIB12*:

3> if the UE is configured with *sl-RxPool* included in *RRCReconfiguration* message with *reconfigurationWithSync* (i.e. handover):

And for SL Positioning

#### 5.8.18.2 NR sidelink positioning measurement

A UE capable of NR sidelink positioning that is configured by upper layers for performingSL-PRS measurement:

1> if the conditions for NR sidelink positioning operation as defined in 5.8.2 are met:

2> if the frequency used for NR sidelink positioning is included in *sl-FreqInfoToAddModList* in *RRCReconfiguration* message or *sl-FreqInfoList* included in *SIB12* or *SIB23*:

3> if the UE is configured with *sl-RxPool* and/or *sl-PRS-RxPool* included in *RRCReconfiguration* message with *reconfigurationWithSync* (i.e. handover):

Companies are requested to provide their view on O800. If the current implementation is fine or if any change is needed and if yes what are the suggested changes:

Please provide your opinion/comments on the O800.

Option 1: Current CR is fine, no change needed.

Option 2: There may be other message that may be impacted, or the current changes are not correct.

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| Company Name | Option 1/2 | Comments |
| Huawei, HiSilicon | Option1 | For the HO case, the network provides the RX pool for the UE to measure SL-PRS within the dedicated signalling. This is the same as SL communications |
| OPPO | 2 | Generally, we think the SL positioning purpose is different from the SL communication. When the UE is firstly triggered for SL-PRS positioning measurement in the source cell, the UE is assumed to make the SL-PRS measurement of the transmitting UE with the SL-PRS resource configured by the source cell.However, if handover occurs, why should the UE make SL-PRS measurement with the SL-PRS resource configured by the target cell? Are we assuming that the transmitting UE is using a overlapping SL resource pool of the source and target cell in the handover? At least we need to clarify the intention to do so, and we are ok to follow majority view |
| Ericsson | 1 | Agree with Huawei |
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# 3 Discussion

## 3.1 LPHAP

Please provide your comments on the LPHAP changes

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| Company Name | Comments  |
| Samsung | For the RIL implementation of [S208], the following yellow part should be removed in 5.3.13.6 (for cell re-selection part). The UE should apply the preconfiguration when it receives RRCRelease message.3> if the selected cell and previously camped cell are in the different *srs-PosConfigValidityArea*;4> initiate RRC connection resume procedure in 5.3.13.2;4> apply the SRS configuration *srs-PosConfigValidityArea* corresponding to the validity area of the selected cell and instruct lower layers to initiate SRS transmission.[HW] We can keep the current text for now and come back to the discussion later in the next meeting. The paragraphs in this section need to be aligned with the RRC field names but now it is unaligned and unclear.Rapporteur: However, SS is correct, since after sending the RRC Conencttion resume and once getting msg4; UE shall then apply as per the RAN2 agreement.\*Agreement in RAN2#125: 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.** |
| Huawei, HiSilicon | For pre-configured SRS, the configurations are not applies immediately at the reception of the configuration. So, it is OK just to store the configuration within the UE’s inactive context.2> if *srs-PosRRC-InactiveValidityAreaPreConfigList* is configured to *setup*:3> store *srs-PosRRC-InactiveValidityAreaPreConfigList* ;3> if the current camped cell is included in any *srs-PosConfigValidityArea* in the *srs-PosRRC-InactiveValidityAreaPreConfigList* and the last RRC Resume procedure was initiated for activation of preconfigured SRS for Positioning:4> apply the corresponding *srs-PosRRC-InactiveValidityAreaPreConfigList* and instruct lower layers to initiate SRS for Positioning transmission; |
| Huawei, HiSilicon | SRS-PosRRC-Inactive-v1800 ::= SEQUENCE { srs-PosRRC-AggBW-InactiveConfigList-r18 SetupRelease { SRS-PosRRC-AggBW-InactiveConfigList-r18 } OPTIONAL, -- Need M srs-PosTx-Hopping-r18 SetupRelease { SRS-PosTx-Hopping-r18 } OPTIONAL, -- Need M srs-PosConfigValidityArea-r18 SEQUENCE (SIZE(1..maxNrOfCellsInVA-r18)) OF CellIdentity OPTIONAL, -- Need M, ...}After a second thought, the change may not be needed. For the non-pre-configued case, we already have the following fields for configuration??SRS-PosRRC-InactiveValidityAreaConfig-r18 ::= SEQUENCE { srs-PosConfigValidityArea-r18 SEQUENCE (SIZE(1..maxNrOfCellsInVA-r18)) OF CellIdentity, srs-PosConfigNUL-r18 SRS-PosConfig-r17 OPTIONAL, -- Need R srs-PosConfigSUL-r18 SRS-PosConfig-r17 OPTIONAL, -- Need R bwp-NUL-r18 BWP OPTIONAL, -- Need S bwp-SUL-r18 BWP OPTIONAL, -- Need S areaValidityTA-Config-r18 AreaValidityTA-Config-r18 OPTIONAL, -- Need R ...}Rapporteur: If I understand then from RAN1 agreements, they stated that validity area can be configured along with RRC Inactive mode Frequency hopping and BWA feature; that is why it has been added. However, it is possible to combine the feature srs-PosRRC-InactiveValidityAreaNonPreConfig-r18 and SRS-PosRRC-Inactive-v1800 and thus separate validity area is not needed. So, we agree we can remove it. |
| CATT | SRS-PosRRC-Inactive-v1800 ::= SEQUENCE { srs-PosRRC-AggBW-InactiveConfigList-r18 SetupRelease { SRS-PosRRC-AggBW-InactiveConfigList-r18 } OPTIONAL, -- Need M srs-PosTx-Hopping-r18 SetupRelease { SRS-PosTx-Hopping-r18 } OPTIONAL, -- Need M srs-PosConfigValidityArea-r18 SEQUENCE (SIZE(1..maxNrOfCellsInVA-r18)) OF CellIdentity OPTIONAL, -- Need M, ...}The srs-PosConfigValidityArea-r18 within SRS-PosRRC-Inactive-v1800 should be removed. We wonder why the validity area is added in the SRS-PosRRC-Inactive-v1800, which is an extended IE for the inactive positioning mechanism in R17. It seems the change is according to the RIL H912, shown as following.

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| there is no validity area configuration in SRS-posRRC\_INACTIVE\_v1800. Validity area cannot be configured for the case when SRS with validty area is not preconfigured. | Add validity area configuration to SRS-PosRRC-inactive-v1800 |

But we do not agree that “ Validity area cannot be configured for the case when SRS with validty area is not preconfigured.”. The non preconfigured SRS with validity area is already supported by the following part.srs-PosRRC-InactiveValidityAreaNonPreConfig-r18 SetupRelease { SRS-PosRRC-InactiveValidityAreaConfig-r18 } OPTIONAL, -- Need MThere is no need to extend the IE SRS-PosRRC-Inactive-v1800.Rapporteur: If I understand then from RAN1 agreements, they stated that validity area can be configured along with RRC Inactive mode Frequency hopping and BWA feature; that is why it has been added. However, it is possible to combine the feature srs-PosRRC-InactiveValidityAreaNonPreConfig-r18 and SRS-PosRRC-Inactive-v1800 and thus separate validity area is not needed. So, we agree we can remove it. |
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## 3.2 Sidelink

Please provide your comments on Sidelink changes.

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| Company Name | Comments  |
| Samsung | For the sl-PRS-Bandwidth-r18 in UAI, at least mhz200 & mhz400 can be added as candidates values for ENUMERATED type field based on the feature 41-1-1 in the RAN1 UE features list (R1-2312572).Rapporteur: Ok; thanks.  |
| Huawei, HiSilicon | For SIB23, better to clarify that it is for reception of dedicated SL-PRSRapporteur: Ok; thanks |
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## 3.3 Bandwidth Aggregation

Please provide your comments on the bandwidth aggregation changes.

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| Company Name | Comments  |
| Samsung | In SRS-PosResourceSetLinkedForAggBW, we can reuse the existing IE (i.e., ServingCellAndBWP-ID-r17) instead of having two separate fields for BWP ID and serving cell Index as in the TP below. connectedMode-r18 SEQUENCE { servingCellAndBWP-r18 ServingCellAndBWP-ID-r17, … },Rapporteur: Ok; Thanks |
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## 3.4 REDCAP CR

Please provide your comments on the RedCap changes

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## 3.5 Any other comments

Please provide any other comments below.

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| Company Name | Comments |
| Huawei, HiSilicon | The following issue has not been addressed. But i think the change is reasonableAgreements:Release of SRS linkage configuration for CA positioning when SRS release request is received from lower layers can be discussed in CR implementation. H905 remains ToDo. |
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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