**3GPP TSG-RAN WG4 Meeting # 102-e R4-2207075**

**Electronic Meeting, Feb. 21- Mar.3, 2022**

**Agenda item:**  10.24

**Source:** Moderator (OPPO)

**Title:** Email discussion summary for [102-e][234] NR\_SL\_relay

**Document for:** Information

# Introduction

*Briefly introduce background, the scope of this email discussion (e.g. list of treated agenda items) and provide some guidelines for email discussion if necessary.*

In this email discussion, we focus on the remaining issues of RRM impact for Rel17 NR SL relay.

* *Interruption requirements*
* *CR*

*List of candidate target of email discussion for 1st round and 2nd round*

* 1st round: Discussion on the listed issues, and provide the comments on CRs.
* 2nd round: TBA

# Topic #1: General requirements for NR\_SL\_relay\_RRM

*Main technical topic overview. The structure can be done based on sub-agenda basis.*

## Companies’ contributions summary

|  |  |  |
| --- | --- | --- |
| **T-doc number** | **Company** | **Proposals / Observations** |
| [**R4-2204291**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2204291.zip) | OPPO | Resubmission of Big CR: RRM requirements for NR SL Relay |
| [**R4-2203720**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2203720.zip) | Qualcomm, Inc. | **Observation 1: network has full control of discover reconfiguration when interruption is possible, and therefore there is no need to add restrictions.****Proposal 1: No need to specify the additional interruption avoidance rule for SL relay.** |
| [**R4-2204292**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2204292.zip) | OPPO | ***Proposal 1: RAN4 not to further consider the additional conditions for interruption avoiding in SL relay.*** |
| [**R4-2205339**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205339.zip) | Huawei, HiSilicon | ***Proposal 1: For R17 NR sidelink relay, we suggest not to consider additional conditions for the interruption requirements at NR sidelink discovery configuration.*** |
| [**R4-2205340**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_102-e/Docs/R4-2205340.zip) | Huawei, HiSilicon | DraftCR on interruption requirements for NR sidelink relay |

## Open issues summary

### Sub-topic 1-1: Interruption requirements

#### Issue 1-1: Interruption

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| --- |
| Background: In RAN4#101-bis-e meeting, RAN4 made the following agreement for interruption requirements:Issue 1-4-1: How to define the interruption requirements at discovery configuration based on R16 V2X sidelink assumption?*Tentative agreements:** + Define interruption on the PCell/serving cell during the RRC reconfiguration procedure

Issue 1-4-2: Whether to further consider the additional conditions on interruption requirements of SL relay?*Candidate options:** + Option 1: The interruption requirements in this clause shall not apply if at least one of the following conditions is met:
* T310 timer is running for RLF on PCell,
* Performing candidate beam detection on PCell/serving cell as specified in section 8.5.5 and 8.5.6,
* While receiving paging and
* While receiving system information.
	+ Option 2: NO, discuss the R17 impact just in R17 SL enhancement WID
 |

* Proposals:
	+ Option 1(QC, HW, OPPO): For R17 NR sidelink relay, we suggest not to consider additional conditions for the interruption requirements at NR sidelink discovery configuration.
* Recommended WF
	+ Option 1 can be used as baseline

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| --- | --- |
| **Company** | **Comments** |
| QC | Support option 1. |
| Huawei | Support option 1. |
| Ericsson | We disagree with option 1, instead we support the option 1 in the agreed WF from last meeting highlighted by the moderator above. Our understanding is that the operating scenario is same for Rel-17 SL relay and Rel-17 SL enhancement, i.e. the concurrent operation of SL and WAN is possible. In such scenario, impact on existing deployments should be avoided or at least reduced. Our view is that the option 1 in the WF from last meeting ensures that the interruption do no take place during the important phases of Uu operation, e.g. when UE is experiencing radio link problems. Therefore we support the option from the agreed WF, i.e. * + The interruption requirements in this clause shall not apply if at least one of the following conditions is met:
* T310 timer is running for RLF on PCell,
* Performing candidate beam detection on PCell/serving cell as specified in section 8.5.5 and 8.5.6,
* While receiving paging and
* While receiving system information.
 |
| OPPO | Share the similar views with HW and QC that network has full control of discover reconfiguration when interruption is possible, and therefore there is no need to add restrictions.Based on Ericsson‘s observation, the operating scenario is same for Rel-17 SL relay and Rel-17 SL enhancement. The concurrent operation of SL and WAN is possible, and the similar conditions should be firstly discussed in R17 SL enhancement WID. If any agreement achieved, then we can come back to study whether to reuse it. This way could be more reasonable.As this is the last meeting, we would like to also provide a compromise proposal that we can solve this issue in the maintenance stage if still no consensus is reached. |
| MTK | Support option 1. |
| Intel  | Relay UE needs to handle Uu events with higher priority than relay link. However, gNB also has full control of the relay UE’s discover reconfiguration when interruption from SL link to Uu is possible as pointed out by QC. Thus, consideration of additional condition would be next topic for enhancement.Support Option 1. |

## Companies views’ collection for 1st round

### Open issues

***Comments are suggested to be provided directly in clause 1.2.***

### CRs/TPs comments collection

*For close-to-finalize WIs and maintenance work, comments collections can be arranged for TPs and CRs. For ongoing WIs, suggest to focus on open issues discussion on 1st round.*

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| --- | --- |
| **CR/TP number** | **Comments collection** |
| R4-2205340(HW) | Ericsson: Needs to be updated based on the outcome of issue 1-1. |
| Intel: The sidelink discovery configuration message *sl-DiscConfig* is defined for LTE. For the counter-part IE in NR, let’s it be for RAN2. (It may be *sl-ConfigDedicatedNR* within *RRCReconfiguration* message in NR.) |
|  |
| R4-2204291(OPPO) | Ericsson: Needs to be updated based on the outcome of issue 1-1. |
| Company B |
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## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

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| --- | --- |
|  | **Status summary**  |
| **Sub-topic #1-1: Interruption requirements** | [Moderator:] Firstly we have agreed in RAN4#101 meeting that RAN4 does not consider DRX related requirements for SL-Relay in Rel-17. RAN4 defines the interruption requirements at discovery configuration based on R16 V2X sidelink assumption.Even though for Rel-17 SL enhancement the applicability rules for interruptions to WAN due to SL DRX are agreed to be considered for some cases in Thu. GTW (e.g., reception of paging, reception of system information under SL resource allocation mode 2), they are not applicable to SL relay because we only consider the interruption requirements at discovery configuration. Especially, for interruption requirements to WAN due to V2X Sidelink Communication in Rel-17 SL enhancement, no interruption avoidance and additional applicability rules for interruptions are defined as well. Based on the majority view, we suggest for R17 NR sidelink relay RAN4 does not consider additional conditions for the interruption requirements at NR sidelink discovery configuration.*Tentative agreements:*RAN4 does not consider additional conditions for the interruption requirements at NR sidelink discovery configuration.*Candidate options:** + Option 1 (5 companies): For R17 NR sidelink relay, RAN4 does not consider additional conditions for the interruption requirements at NR sidelink discovery configuration
	+ Option 2 (1 companies): The interruption requirements in this clause shall not apply if at least one of the following conditions is met:
* T310 timer is running for RLF on PCell,
* Performing candidate beam detection on PCell/serving cell as specified in section 8.5.5 and 8.5.6,
* While receiving paging and
* While receiving system information.

*Recommendations for 2nd round:*If the tentative agreement is agreeable, no more discussion is needed in 2nd round. |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provides recommendation on CRs/TPs Status update*

*Note: The tdoc decisions shall be provided in Section 3 and this table is optional in case moderators would like to provide additional information.*

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| --- | --- |
| **CR/TP number** | **CRs/TPs Status update recommendation**  |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

# Recommendations for Tdocs

## 1st round

**New tdocs**

|  |  |  |
| --- | --- | --- |
| **Title** | **Source** | **Comments** |
| WF on RRM requirements for SL relay | OPPO | To capture the agreements or open issues. |
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**Existing tdocs**

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| --- | --- | --- | --- | --- |
| Tdoc number | Title | Source | Recommendation  | **Comments** |
| R4-2205340 | DraftCR on interruption requirements for NR sidelink relay | Huawei | To be revised | To capture the comments in 1st round |
| R4-2204291 | Big CR: RRM requirements for NR SL Relay | OPPO | To be revised |  |
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Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics incl. existing and new tdocs.
2. For the Recommendation column please include one of the following:
	1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
	2. Other documents: Agreeable, Revised, Noted
3. For new LS documents, please include information on To/Cc WGs in the comments column
4. Do not include hyper-links in the documents

## 2nd round

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation**  | **Comments** |
| R4-2207026 | WF on RRM requirements for SL relay | OPPO | Agreeable |  |
| R4-2207027 | DraftCR on interruption requirements for NR sidelink relay | Huawei | Agreeable | Keep a square brack on the IE“sl-DiscConfig”. We can remove it in the big CR email approval stage once RAN2 CR is finalized.. |
| R4-2207082  | Big CR: RRM requirements for Rel-17 NR SL Relay | OPPO | For email approval. | Big CR |

Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics.
2. For the Recommendation column please include one of the following:
	1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
	2. Other documents: Agreeable, Revised, Noted
3. Do not include hyper-links in the documents

# Annex

Contact information

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| **Company** | **Name** | **Email address** |
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Note:

1. Please add your contact information in above table once you make comments on this email thread.
2. If multiple delegates from the same company make comments on single email thread, please add you name as suffix after company name when make comments i.e. Company A (XX, XX)