**3GPP TSG-RAN WG2 Meeting #131 R2-250xxxx**

**Bengaluru, India, August 25th – 29th, 2025**

**Agenda Item: 8.13.1**

**Source: Huawei, HiSilicon**

**Title: Comment collection for Main RRC (TS 38.331) running CR for NR Sidelink Multihop Relay**

**Document for:**

# 1 Introduction

This paper collects comments for Main RRC (TS 38.331) running CR for NR Sidelink Multihop Relay

* [Post130][406][Relay] Rel-19 relay main CR to 38.331 (Huawei)

Scope: Update the CR in R2-2504271 to take into account agreements of RAN2#130.

Intended outcome: Endorsed draft CR for merge with output of [Post130][402] before RAN2#131

Deadline: June 20th

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# 2 Comments for the running CR

This section is used to collect comments for the running CR in Main RRC (TS 38.331) running CR for NR Sidelink Multihop Relay

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| **Company** | **Issue** | **Suggestion** |
| ASUSTeK | In section 3.1, the term “**Last** U2N Relay UE” is defined, while “U2N **Last** Relay UE” is used in related procedures e.g. 5.3.5.3, 5.3.7.2, 5.3.10.3, …etc. | Suggest to align the terms. |
| ASUSTeK | In our understanding, section 5.8.15 should also cover the behavior of the intermediate U2N Relay UE in case of multi-hop U2N Relay. Otherwise, the behavior of the intermediate U2N Relay UE is missing. | If the previous understanding correct, we suggest to mimic the wording in 5.8.14.1 to make this clear e.g.: 5.8.15.1 General This procedure is used by a UE supporting NR sidelink U2N Remote UE operation in case of single hop or by a UE supporting NR sidelink U2N Intermediate Relay UE operation in case of multi hop configured by upper layers to transmit NR sidelink discovery messages to evaluate AS layer conditions. The procedure is also used to perform selection and reselection of NR sidelink U2N Relay UEs.  5.8.15.2 NR Sidelink U2N Remote UE threshold conditions  A UE capable of NR sidelink U2N Remote UE operation or U2N Intermediate Relay UE operation shall:  … |
| ASUSTeK | We are wondering the implication of NOTE X in 5.8.15.2. Does it imply the U2N Relay UE shall not transmit NR sidelink discovery message if it cannot connect to the network via any parent U2N Relay UE or what? | Suggest rewording to clarify. |
| ASUSTeK | It was agreed in RAN2#130, an intermediate relay UE can act as a remote UE simultaneously. **RAN2#130 also agreed to clarify in the normative text that the UE can be a relay and remote UE simultaneously** (to be determined case by case where it needs to be documented). In our understanding, if IE *sl-SRAP-ConfigRelayList* is included, *sl-L2IdentityRemote* in *SL-RemoteUE-ToAddMod* indicates the L2 ID of the directly connected child UE, which acts as both a U2N Remote UE and an Intermediate U2N Relay UE for indirectly connected child UE in the multi hop case. | We think this IE is a proper place to clarify this point so as to make the structure of IE *SL-RemoteUE-ToAddMod* easier to understand e.g.:  ***sl-SRAP-ConfigRelay-ToAddModList***  List of SRAP configuration for each indirectly connected child UEs in the multi hop case. If this IE is included, *sl-L2IdentityRemote* in *SL-RemoteUE-ToAddMod* indicates the L2 ID of a directly connected child UE, which acts as both a U2N Remote UE and an Intermediate U2N Relay UE (for indirectly connected child UE) in the multi hop case. |
| ASUSTeK | Some correction is needed in the new field descriptions:  ***sl-SRAP-ConfigRelay-ToAddModList***  List of SRAP configuration for each indirectly connected child UEs in the multi hop case  ***sl-SRAP-ConfigRelay-ToReleaseList***  List of SRAP configuration be released for each indirectly connected child UEs in the multi hop case | Text proposal:  ***sl-SRAP-ConfigRelay-ToAddModList***  List of SRAP configuration for each indirectly connected child UE~~s~~ in the multi hop case.  ***sl-SRAP-ConfigRelay-ToReleaseList***  List of SRAP configuration be released for each indirectly connected child UE~~s~~ in the multi hop case. |
| ASUSTeK | According to clause 5.8.9.9.X, the *UuMessageTransferSidelink* message can also be transmitted by the L2 **Intermediate** U2N Relay UE. But, the description in the clauses 5.8.9.9.1 and 5.8.9.9.2 only considers the *UuMessageTransferSidelink* message can be sent by the L2 U2N **Last** Relay UE (in case of multi hop). | Suggest to clarify that the L2 **Intermediate** U2N Relay UE can also send the *UuMessageTransferSidelink* message in case of multi hop in clauses 5.8.9.9.1 and 5.8.9.9.2. |
| OPPO | In 5.8.9.1.1, whether to support SFN-DFN offset indication for positioning in MH relay needs to be discussed first since we are not sure it is feasible due to:  If each intermediate relay just forward the value from the last relay, the value is an incorrect value;  Seems also not feasible for each intermediate relay to modify this value since it may not have the direct Uu signal. | Suggest to first discuss whether to support positioning/SFN-DFN offset in MH relay |
| OPPO | In 5.8.9.8.2, for the following NOTE:  Note: An intermediate UE that can acquire SI requested by a child node by directly obtaining the SI on Uu (while in coverage of the same cell as the last relay UE) is consider to have stored a valid version of a SIB in accordance with clause 5.2.2.2.1. | We understand this note is not correct and also not needed regarding how for the intermediate relay UE to determine whether has valid version of SIB, i.e.,  - in the sentence of above normative text “the UE has not stored a valid version of a SIB, in accordance with clause 5.2.2.2.1”, the validity is checked according to 5.2.2.2.1, which is already clear and includes the SIB directly or indirectly obtained from NW.  - in the NOTE, it is restricted to the directly obtained SIB from the NW, which means the indirectly obtained SIBs at the intermediate relay are considered invalid, which we understand is not correct. |
| OPPO | For clause 5.8.9.8.X, is it correct understanding that based on this clause, the intermediate relay will forward each received SIB/Paging request from child UE transparently (W/O checking/combining the request)? Our understanding based on the following agreement in last R2 meeting is each intermediate relay UE will based on the request/need of all the child UEs and itself to determine/generate the requested SIB/Paging list to its parent, which means the Paging/SIB request/respond is always a per-hop mechanism.  For the SIB requested by child node, if the SIB has not been included in SIB request in parent link, if IDLE/INACTIVE intermediate relay UE obtain the requested SIB via Uu interface or unsolicited SIB1 forwarding and CAN respond SIB request of child UE, adopt legacy condition(“if the UE has SIB request information to provide”) to determine SIB request in parent link is needed or not. Applicability of this legacy language to the multihop case to be documented in RRC. | No new section is needed, each intermediate relay UE can   * follow 5.8.9.8.3 for the request reception/5.8.9.9.2 for the response transmission as a relay * and follow 5.8.9.8.2 for the request transmission/5.8.9.9.3 response reception as a remote |
| OPPO | In 5.8.9.10.3, for the notification triggered by relay reselection, we understand the trigger event can be “PC5 link release triggered by relay reselection” to avoid the new cause value. | Suggest the following rewording or add an FFS on how to capture the trigger event  2> else if the UE initiates transmission of the *NotificationMessageSidelink* message due to PC5 link release with the parent Relay triggered by Relay reselection:  3> set the indicationType as FFS ; |
| OPPO | In 5.8.13.3, for in coverage case the PC5 threshold condition should be satisfied on top of Uu threshold condition, i.e., the Uu threshold condition should be satisfied in all the cases | 3> if the UE acting as Intermediate U2N Relay UE is sending Discovery Solicitation message with Model B as specified in TS 23.304 [65] and *sl-DiscConfigCommon* is included in *SIB12*, and if both the NR sidelink multi-hop relay threshold conditions as specified in 5.8.x.2 and the NR sidelink U2N Remote UE threshold conditions as specified in 5.8.15.2 are met based on *sl-RelayUE-ConfigCommonMH* and *sl-RemoteUE-ConfigCommon* in SIB12; or |
| OPPO | In 5.8.13.3, for out of coverage case the Uu threshold condition still needs to be checked (same as the R17 Remote UE behavior) | 2> if the UE acting as Intermediate U2N Relay UE has an established PC5 link with the selected parent U2N Relay UE and if the NR sidelink U2N Remote UE threshold conditions as specified in 5.8.15.2 are met based on *sl-RemoteUE-ConfigCommon* in *SIB12*; or  2> if the UE acting as Intermediate U2N Relay UE is sending Discovery Solicitation message with Model B as specified in TS 23.304 [65] and if both the NR sidelink multi-hop relay threshold conditions as specified in 5.8.x.2 and the NR sidelink U2N Remote UE threshold conditions as specified in 5.8.15.2 are met based on *sl-PreconfigDiscConfig* in *SidelinkPreconfigNR*; or |
| OPPO | In 5.8.15.3, the following NOTE on prioritize the connected relay UE, we understand the NOTE is not needed and this should be fully up to UE implementation based on the agreement in last R2 meeting. This is because it is not appropriate to simply say UE should prioritize RRC connected relay since relay selection is based on multiple parameters, i.e., hop count/accumulated QoS/root relay info..., e.g., remote UE may want to select the RRC idle relay with smaller hop count or better QoS  NOTE X: The L2 U2N Remote UE will prioritize the selection or reselection of suitable NR sidelink U2N Relay UE that is in RRC\_CONNECTED state, based on the RRC state information included in the Discovery Message container. | Suggest to remote the NOTE |
| LG | In 4.2.2, the description parts of “L2 First U2N Relay UE or of L2 Intermediate U2N Relay UE” can be replaced just “L2 Intermediate U2N Relay UE”. Is there special reason to be described “First U2N Relay UE or Intermediate U2N Relay UE”? First U2N Relay UE is also intermediate Relay UE based on the definition.  The same principle can be applied to the subclause 5.3.3.3 Note3, 5.3.3.4, 5.3.7.2 | We think only using “L2 intermediate U2N Relay UE” is enough. Suggest that describing just “L2 Intermediate U2N Relay UE” instead of “L2 First U2N Relay UE or of L2 Intermediate U2N Relay UE”. |
| LG | In 5.2.2.2.1, we think the phrase “A L2 U2N Remote UE or L2 Intermediate U2N Relay UE”, it can be replaced just “L2 U2N Remote UE”. In 38.300, it is specified clearly that intermediate Relay UE acts as remote UE. We want not to be changed too much the legacy spec.  The same comment can be applied to the 5.3.5.2 and 5.3.7.2 | Suggest that keeping the legacy description as “L2 U2N Relay UE”. We think not to be changed as “A L2 U2N Remote UE or L2 Intermediate U2N Relay UE”. |
| LG | In 5.2.2.2.2, “A L2 U2N Remote UE or L2 First U2N Relay UE or L2 Intermediate U2N Relay UE is not required” can be replaced just simply as A L2 U2N Remote UE or L2 Intermediate U2N Relay UE is not required”. | We think not to clarify intermediate Relay UE and the first Relay UE, if there is not a special reason to be clarified. The first Relay UE also an intermediate Relay UE based on the definition. |
| LG | In 5.3.2.3, in the phrase of “1> if the UE is acting as a L2 U2N Relay UE or L2 Last U2N Relay UE”, we think the “L2 Last U2N Relay UE” can be removed. Because “L2 Last U2N Relay UE” is also “U2N Relay UE” according to the definition. It looks double description. | Suggest “1> if the UE is acting as a L2 U2N Relay UE or L2 Last U2N Relay UE” replaced to “1> if the UE is acting as a L2 U2N Relay UE”. |
| LG | In 5.3.3.6, we think the added phrase as “or by a L2 First U2N Relay UE or by a L2 Intermediate U2N Relay UE” can be removed. Because the timer operation is clearly the case when the intermediate Relay UE operates as intermediate Relay UE. | Suggest to remove the added phrase, i.e., “or by a L2 First U2N Relay UE or by a L2 Intermediate U2N Relay UE,”. |
| LG | In 5.3.3.7, is it needed to differentiate whether connected L2 U2N Remote UE(s) or to the connected downstream child UE(s) in the side of U2N Relay UE? The U2N Relay UE just sends notification message to its Remote UE(s) regardless the Remote UE(s) acts as intermediate Relay UE or not.  For the 3.5.5.8 and 5.3.5.5.1, we want to do the similar comment. | Suggest to be changed as “sends *NotificationMessageSidelink* message to the connected L2 U2N Remote UE(s) ~~or to the connected downstream child UE(s)~~ in accordance with 5.8.9.10.” |
| LG | In the 5.3.5.2, the phrase of “the establishment of Uu Relay RLC channels and PC5 Relay RLC channels (other than SL-RLC0 and SL-RLC1) for L2 U2N Relay UE or for L2 Last U2N Relay UE is performed” doesn’t need to be changed. Because the U2N Relay UE can be also the Last U2N Relay UE. The last U2N Relay UE is just the U2N Relay UE having Uu Relay RLC channel. The sentence already has the U2N Relay UE establishment of Uu Relay RLC channels and PC5 Relay RLC channels. So, we think it is not needed to be clarified as last U2N Relay UE.  The same comment for the subclause 5.3.5.3 and 5.3.5.5.12, 5.3..5.5.13, 5.3.7.2 | We suggest to be changed as the followings:  [5.3.5.2]   * the establishment of Uu Relay RLC channels and PC5 Relay RLC channels (other than SL-RLC0 and SL-RLC1) for L2 U2N Relay UE ~~or for L2 Last U2N Relay UE~~ is performed only when AS security has been activated, and the establishment of PC5 Relay RLC channels for L2 U2N Remote UE or for L2 First U2N Relay ~~UE or for L2 Intermediate U2N Relay UE~~ (other than SL-RLC0 and SL-RLC1) is performed only when AS security has been activated;   [5.3.5.3]  3> resume SRB2, SRB4, DRBs, multicast MRB, and BH RLC channels for IAB-MT, and Uu Relay RLC channels for L2 U2N Relay UE ~~or for L2 U2N Last Relay UE,~~ that are suspended;  [5.3.7.2] suspend all RBs, and BH RLC channels for IAB-MT, and Uu Relay RLC channels for L2 U2N Relay ~~UE or for L2 U2N Last Relay UE~~, except SRB0 and broadcast MRBs; |