**3GPP TSG-RAN WG2 Meeting #130 R2-25xxxxx**

**Malta, MT, 19 – 23 May 2025**

**Agenda Item: 7.0.2.19**

**Source: ASUSTeK**

**Title: Report of [Post129bis][410][Relay] Local ID pair list**

**Document for: Discussion and Decision**

# 1 Introduction

This contribution gives the discussion summary of following post email discussion.

* [Post129bis][410][Relay] Local ID pair list (ASUSTeK)

Scope: Further check the CR in R2-2503083 and determine:

* if the CR is necessary or the list can be left as a “ToAdd” only;
* if the CR is functionally NBC;
* if something is needed, whether the procedural change is correct.

Intended outcome: CR to next meeting

Deadline: Long

## Contact information

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| **Company** | **Name (Email)** |
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# 2 Discussion

In the current spec, the list *sl-LocalID-PairToAddModList* is used with the term of ToAddModList. But, the structure of the *sl-LocalID-PairToAddModList* follows the concept of list without ToAddModList (i.e. each entry in the *sl-LocalID-PairToAddModList* does not contain an element identifier).

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| – *RRCReconfigurationSidelink*  The *RRCReconfigurationSidelink* message is the command to AS configuration of the PC5 RRC connection. It is only applied to unicast of NR sidelink communication.  Signalling radio bearer: SL-SRB3  RLC-SAP: AM  Logical channel: SCCH  Direction: UE to UE  ***RRCReconfigurationSidelink* message**  -- ASN1START  -- TAG-RRCRECONFIGURATIONSIDELINK-START  …  RRCReconfigurationSidelink-v1800-IEs ::= SEQUENCE {  sl-SFN-DFN-Offset-r18 SetupRelease { SL-SFN-DFN-Offset-r18 } OPTIONAL, -- Need M  sl-CarrierToAddModList-r18 SEQUENCE (SIZE (1..maxNrofFreqSL-1-r18)) OF SL-CarrierConfig-r18 OPTIONAL, -- Need N  sl-CarrierToReleaseList-r18 SEQUENCE (SIZE (1..maxNrofFreqSL-1-r18)) OF SL-CarrierId-r18 OPTIONAL, -- Need N  sl-RLC-BearerToAddModList-r18 SEQUENCE (SIZE(1..maxNrofSLRB-r16)) OF SL-RLC-BearerConfig-r18 OPTIONAL, -- Need N  sl-RLC-BearerToReleaseList-r18 SEQUENCE (SIZE(1..maxNrofSLRB-r16)) OF SL-RLC-BearerConfigIndex-r18 OPTIONAL, -- Need N  sl-LocalID-PairToAddModList-r18 SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-SRAP-ConfigPC5-r18 OPTIONAL, -- Need N  nonCriticalExtension SEQUENCE {} OPTIONAL  }  …  SL-SRAP-ConfigPC5-r18 ::= SEQUENCE {  sl-PeerRemoteUE-L2Identity-r18 SL-DestinationIdentity-r16 OPTIONAL, -- Need M  sl-PeerRemoteUE-LocalIdentity-r18 INTEGER (0..255) OPTIONAL, -- Need M  sl-RemoteUE-L2Identity-r18 SL-SourceIdentity-r17 OPTIONAL, -- Need M  sl-RemoteUE-LocalIdentity-r18 INTEGER (0..255) OPTIONAL, -- Need M  ...  }  -- TAG-RRCRECONFIGURATIONSIDELINK-STOP  -- ASN1STOP  A.3.9 Guidelines on use of ToAddModList and ToReleaseList  In order to benefit from delta signalling when modifying lists with many and/or large elements, so-called add/mod- and release- lists should be used. Instead of a single list containing all elements of the list, the ASN.1 provides two lists. One list is used to convey the actual elements that are to be added to the list or modified in the list. The second list conveys only the identities (IDs) of the list elements that are to be released from the list. In other words, the ASN.1 defines only means to signal modifications to a list maintained in the receiver (typically the UE). An example is provided below:  -- /example/ ASN1START  AnExampleIE ::= SEQUENCE {  elementsToAddModList SEQUENCE (SIZE (1..maxNrofElements)) OF Element OPTIONAL, -- Need N  elementsToReleaseList SEQUENCE (SIZE (1..maxNrofElements)) OF ElementId OPTIONAL, -- Need N  ...  }  Element ::= SEQUENCE {  elementId ElementId,  aField INTEG ER (0..16777215),  anotherField OCTET STRING,  ...  }  ElementId ::= INTEGER (0..maxNrofElements-1)  maxNrofElements INTEGER ::= 50  maxNrofElements-1 INTEGER ::= 49  -- /example/ ASN1STOP  A.3.10 Guidelines on use of lists (without ToAddModList and ToReleaseList)  As per clause 6.1.3, when using lists without the ToAddModList and ToReleaseList structure, the contents of the lists are always replaced. To illustrate this, an example is provided below:  -- /example/ ASN1START  -- TAG\_EXAMPLE\_LISTS\_START  AnExampleIE ::= SEQUENCE {  elementList SEQUENCE (SIZE (1..maxNrofElements)) OF Element OPTIONAL, -- Need M  ...,  [[  elementListExt-v2030 SEQUENCE (SIZE (1..maxNrofElementsExt)) OF Element OPTIONAL, -- Need M  ]]  }  Element ::= SEQUENCE {  useFeatureX BOOLEAN,  aField INTEGER (0..127) OPTIONAL, -- Need M  anotherField INTEGER (0..127) OPTIONAL, -- Need R  ...  }  maxNrofElements INTEGER ::= 8  maxNrofElements-1 INTEGER ::= 7  maxNrofElementsExt INTEGER ::= 8  maxNrofElementsExt-1 INTEGER ::= 7  -- TAG\_EXAMPLE\_LISTS\_STOP  -- /example/ ASN1STOP |

The current *sl-LocalID-PairToAddModList* for updating local ID pair works well in case the L2 U2U Remote UE communicates with only one peer L2 U2U Remote UE via a L2 U2N Relay UE. However, as mentioned in R2-2503083, without such element identifier in the *sl-LocalID-PairToAddModList*, the L2 U2U Remote UE would not distinguish an updated local ID pair (including a new L2 ID of a peer L2 U2U Remote UE and a new local ID to identify this peer L2 U2U Remote UE) belongs to which peer L2 U2U Remote UE in case the L2 U2U Remote UE communicates with multiple peer L2 U2U Remote UEs via the same L2 U2N Relay UE.

For example, a source remote UE may receive a L2ID-to-local ID mapping for a target remote UE1 (using per-hop L2ID\_T1) and a L2ID-to-local ID mapping for a target remote UE2 (using per-hop L2ID\_T2) from the relay UE. Therefore, the source remote UE stores the local ID pair list with two entries as below:

1. SL-SRAP-ConfigPC5-r18 ::= SEQUENCE {

L2ID\_S,

local ID1,

**L2ID\_T1**,

**local ID2**,

};

1. SL-SRAP-ConfigPC5-r18 ::= SEQUENCE {

L2ID\_S,

local ID1,

**L2ID\_T2**,

**local ID3**,

}.

Currently, there is no restriction for the relay UE to update local ID in case of per-hop L2 ID change. When per-hop L2 ID will change, if the relay UE would like to update the L2ID-to-local ID mapping for the target remote UE1 (using new per-hop L2ID\_T3 with new local ID) and follows the current procedural text to set the *sl-LocalID-PairToAddModList*, only an entry is included as:

1. SL-SRAP-ConfigPC5-r18 ::= SEQUENCE {

L2ID\_S,

local ID1,

**L2ID\_T3**,

**local ID4**,

}.

When receiving the *sl-LocalID-PairToAddModList* including only one entry from the relay UE, the source remote UE cannot know the updated local ID pair belongs to which target remote UE.

During the RAN2 meeting, companies had different view on the *sl-LocalID-PairToAddModList*. Therefore, it would be better to see RAN2’s view first.

Question 1: What do you think the *sl-LocalID-PairToAddModList* should be?

1. A delta list (including only the local ID pair to be assigned or modified)
2. A full list (including the local ID pair to be assigned or modified as well as other unchanged local ID pair)
3. An addition list (including only the local ID pair to be newly assigned, i.e. no modification case)

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| **Companies** | **a), b) or c)** | **Comments** |
| Huawei, HiSilicon | c) or b) | I think c) is sufficient, assuming the L2 ID update is performed by upper layer, and be known/synchronized among the source remote UE, target remote UE and the relay UE. So by UE implementation, the remote UEs and relay UE can update the L2 ID on top of the SRAP configuration.  However, if b) is preferred by companies, it’s also acceptable to us. |
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Question 2: If a) in Question 1 is selected, how to address the issue that the source remote UE cannot distinguish the updated local ID pair, which is the only entry included in the *sl-LocalID-PairToAddModList*, belongs to which target remote UE?

1. Add an element identifier in *SL-SRAP-ConfigPC5*
2. Other

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| **Companies** | **Options** | **Comments** |
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Question 3: If b) in Question 1 is selected, do you agree to replace *sl-LocalID-PairToAddModList* with *sl-LocalID-PairList*? If no, please provide you comment (how to reflect such full list in the spec).

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| **Companies** | **Yes or No** | **Comments** |
| Huawei, HiSilicon | Yes |  |
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Question 3.1: If b) in Question 1 is selected, whether and how to modify the related procedural text (the part of *sl-LocalID-PairToAddModList*) in the clause 5.8.9.1.2?

1. Apply the text proposal in R2-2503083
2. Keep it as it is (i.e. the original procedural text does not exclude the relay UE from including the unchanged local ID pair)
3. Other

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| **Companies** | **Options** | **Comments** |
| Huawei, HiSilicon | a) |  |
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Question 4: If c) in Question 1 is selected, do you agree to replace *sl-LocalID-PairToAddModList* with *sl-LocalID-PairToAddList*? If no, please provide you comment (how to reflect such addition list in the spec).

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| **Companies** | **Yes or No** | **Comments** |
| Huawei, HiSilicon | Yes |  |
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Question 4.1: If c) in Question 1 is selected, whether and how to modify the related procedural text (the part of *sl-LocalID-PairToAddModList*) in the clause 5.8.9.1.2?

1. Keep it as it is
2. Other

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| **Companies** | **Options** | **Comments** |
| Huawei, HiSilicon | a) |  |
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Question 5: In SRAP specification, *sl-LocalID-PairToAddModList* is also referenced. If any change is applied to the name of the parameter, do you think the same change should also applied in 38.351?

1. Yes
2. No

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| **Companies** | **Options** | **Comments** |
| Huawei, HiSilicon | a) |  |
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3 Conclusion

This contribution makes the following proposals:

TBD

# 4 References

1. R2-2503083 Correction on terminology of local ID pair list ASUSTeK