**3GPP TSG-RAN WG2 Meeting #113bis electronic** **R2-2104406**

**Online, April 12th – 20th, 2021**

**Agenda item: 8.7.4.2**

**Source: Futurewei**

**Title: Report of [AT113bis-e][604][Relay] Proposals from summary of agenda item 8.7.4.2**

**Document for: Discussion and Decision**

# Introduction

This document is to report the outcome of the following email discussion in RAN2#113bis-e Meeting.

**[AT113bis-e][604][Relay] Proposals from summary of agenda item 8.7.4.2 (Futurewei)**

Scope: Continue discussion of the summary of AI 8.7.4.2 and try to reach agreeable proposals.

Intended outcome: Report in R2-2104406

Deadline:  Friday 2021-04-16 1000 UTC

The email discussion takes the summary document of agenda item 8.7.4.2 [1] as starting point, and extends the discussion to invite companies’ view if the proposals in [1] are agreeable.

# Contact Information

|  |  |
| --- | --- |
| **Company** | **Contact: Name (E-mail)** |
| Futurewei | Hao Bi (hao.bi@futurewei.com) |
| OPPO | qianxi.lu@oppo.com |
|  |  |

# Adaptation Layer over PC5

It is almost evenly split among companies on whether or not adaptation layer should be specified over PC5 in Rel-17. Hence, an online discussion seems inevitable. Companies are, however, encouraged to suggest wayforward to be considered. For example, the moderator is wondering if concerns of specification workload and additional UE implementation can be alleviated by limiting PC5 adaptation layer to be of similar PDU format (e.g., header content, control PDU) and functionalities as Uu adaptation layer.

**Proposal 1:** RAN2 to discuss and decide if adaptation layer over PC5 should be specified in Rel-17.

**Question 1:** Is Proposal 1 agreeable?

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | Yes | It may be considered to limit PC5 adaptation layer to be of similar PDU format (e.g., header content, control PDU) and functionalities as Uu adaptation layer, in a way to address concerns of specification workload and additional UE implementation. |
| OPPO | Yes | We are OK to have this discussion.  For the view, from rapporteur perspective, we observe both proposals on having and not having adaptation layer over PC5 hop, so propose to make it configurable as compromise way-out. And we are OK to introduce UE capability on the support of adaptation layer over PC5 hop so that it is optional for UE to support it. |
|  |  |  |

**Proposal 2:** Send LS to SA2 to inform them of the final protocol stack of L2 UE to Network relay.

**Question 2:** Is Proposal 2 agreeable?

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | Yes |  |
| OPPO |  | No strong view: according to the experience at study phase, SA2 and RAN2 can always sync by reading agreement/minutes and so far the stack-figure in SA2 TR/spec have been aligned in that way. |
|  |  |  |

# Adaptation Layer over Uu

## Adaptation Layer Header

**Proposal 3:** For both DL and UL transmission of Uu radio bearers other than SRB0, identity information of a remote UE and its Uu radio bearer are included in the header of adaptation layer over Uu. FFS for SRB0.

**Question 3:** Is Proposal 3 agreeable?

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | Yes |  |
| OPPO | Yes |  |
|  |  |  |

**Proposal 3a:** The radio bearer ID in the adaptation layer header is the Uu radio bearer ID of the remote UE.

**Question 3a:** Is Proposal 3a agreeable?

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | Yes |  |
| OPPO | No | As commented in reflector, we understand there are some inconsistency   * The “Uu radio bearer ID of the remote UE” will be configured by network to remote UE * The “radio bearer ID in the adaptation layer header” will be configured by network to relay UE, in case the adaptation layer is not configured at PC5 hop (see reply to Q1)   so seems P3a is to mandate network behavior, i.e., to mandate network when providing the two configurations (to remote and to relay UE), to ensure the consistency in-between, why that is important? And what is the harmful result if the two configurations are independent of each other? |
|  |  |  |

**Proposal 3b:** The UE ID in the adaptation layer header is a local, temporary remote UE ID. FFS whether the local, temporary remote UE ID is assigned by the remote UE, the relay UE, or the serving gNB of the relay UE.

**Question 3b:** Is Proposal 3b agreeable?

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | Yes |  |
| OPPO | Yes with comment | we are fine with P3b.  And we wonder if we can make a further step to remove the candidate of “assigned by the remote UE” from the table, since that requires the remote UE to either use the full length of PC5 ID (24-bit) which may cause overhead concern, or the Uu ID (TMSI?) which may cause security concern, if considering the truncated ID may be collide with the ID assigned by other remote UE, and further schemes are needed to solve the collision. |
|  |  |  |

**Proposal 3c:** Relay UE is configured with mapping tables between PC5 RLC IDs, remote UE Uu radio bearer IDs (determined by UE ID and radio bearer ID), and Uu RLC bearer IDs.

**Question 3c:** Is Proposal 3c agreeable?

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | Yes |  |
| OPPO | No | it is suggested to reword the proposal in a way that  Relay UE is configured with mapping tables between PC5 RLC bearer IDs, remote UE Uu radio bearer IDs, ~~(determined by~~ remote UE ID ~~and radio bearer ID)~~, and Uu RLC bearer IDs.  so that we do not lose any possibility at the current stage. |
|  |  |  |

**Proposal 4:** Send LS to SA3 to check whether there is security issue for disclosing in the adaptation layer, temporary remote UE identifier, configured by the serving gNB or by the relay UE.

**Question 4:** Is Proposal 4 agreeable?

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes/No** | **Comments** |
| Futurewei | Yes |  |
| OPPO | No | Our reading of the proposal is it is self-contradictory, i.e., if “temporary remote UE identifier” is used, there is no concern of “security issue for disclosing”..  If P3b is agreed in this meeting, i.e., a local/temp ID is used in adaptation layer, there is no need to go to S3. |
|  |  |  |

# Other proposals

There’d be limited time available in this meeting on this agenda item. The guidance in WID and from chairman is to prioritize topics that may require coordination with other groups. If there is any, companies are invited to suggest other topics deemed to be important to be treated in this meeting.

|  |  |
| --- | --- |
| **Company** | **Comments** |
|  |  |
|  |  |
|  |  |

# Conclusions

To be provided later …

# References

1. R2-2104505 Summary document for AI 8.7.4.2, Futurewei.