**3GPP TSG-RAN WG2 #112-3 *R2-2102187***

**E-meeting, 25~29th Jan. 2021**

Agenda Item: 6.4.3

Source: OPPO

Title: Discussion on spec structure for re-evaluation and pre-emption

Document for: Discussion, Decision

# Introduction

This document discusses in which section the text relevant to re-evaluation and pre-emption should be captured.

# Discussion

Current section 5.22.1.1 in MAC specification does following jobs:

1, treatment of mode 1 grant or

2, resource (re)selection of mode 2 for single MAC PDU transmission or

3, resource (re)selection of mode 2 for multiple MAC PDU transmission

And

4, Deliver the sidelink grant along with selected MCS and the associated HARQ information to sidelink HARQ entity.

While current section 5.22.1.2 in MAC specification does following jobs:

1, TX resource (re)selection check and

2, Resource reselection due to re-evaluation and pre-emption by physical layer including trigger description

The section 5.22.1.2 will be referred in section 5.22.1.1 to check whether UE need select resource from scratch and the relevant text is from top of the section till the 2nd level bullets as following:



Therefore 5.22.1.2 is not a proper section to capture the 2nd part text starting with newly added trigger which only impact part of the initially selected resource for both single MAC PDU and multiple MAC PDU operation due to re-evaluation and pre-emption.

During email discussion “[AT113-e][709][V2X/SL] Mode 2 resource (re)selection (OPPO)” involving companies believe this should be fixed.

# Conclusion

It is proposed to create a new section in the same level as 5.22.1.1 to incorporate the text for resource reselection due to re-evaluation and pre-emption e.g. 5.22.1.2a

# Draft TP

5.22.1.2a Re-evaluation and Pre-emptionA resource(s) of the selected sidelink grant for ~~current TB~~ a MAC PDU to transmit from multiplexing and assembly entity is re-evaluated by physical layer at T3 before the slot where ~~it will be~~ the SCI indicating the resource(s) is signalled at first time as specified in section 8.1.4 of TS 38.214.

A resource(s) of the selected sidelink grant which has been indicated by a prior SCI for ~~current TB~~ a MAC PDU to transmit from multiplexing and assembly entity could be checked for pre-emption by physical layer at T3 before the slot where ~~corresponding PSSCH duration~~ the resource(s) is located as specified in section 8.1.4 of TS 38.214.

The MAC entity shall for the sidelink process:

1> if a resource(s) of the selected sidelink grant which has not been identified by a prior SCI is indicated for re-evaluation by the physical layer as specified in clause 8.1.4 of TS 38.214 [7]; or

1> if any resource(s) of the selected sidelink grant which has been indicated by a prior SCI is indicated for pre-emption by the physical layer as specified in clause 8.1.4 of TS 38.214 [7]

1>

2> remove the resource(s) from the selected sidelink grant associated to the Sidelink process;

2> randomly select the time and frequency resource from the resources indicated by the physical layer as specified in clause 8.1.4 of TS 38.214 [7] for either the removed resource or the dropped resource, according to the amount of selected frequency resources, the selected number of HARQ retransmissions and the remaining PDB of either SL data available in the logical channel(s) by ensuring the minimum time gap between any two selected resources of the selected sidelink grant in case that PSFCH is configured for this pool of resources, and that a resource can be indicated by the time resource assignment of a SCI for a retransmission according to clause 8.3.1.1 of TS 38.212 [9];

NOTE 4: If retransmission resource(s) cannot be selected by ensuring that the resource(s) can be indicated by the time resource assignment of a prior SCI, how to select the time and frequency resources for one or more transmission opportunities from the available resources is left for UE implementation by ensuring the minimum time gap between any two selected ‎resources in case that PSFCH is configured for this pool of ‎resources.

2> replace the removed or dropped resource(s) by the selected resource(s) for the selected sidelink grant.

NOTE 5: It is left for UE implementation to reselect any pre-selected but not reserved resource(s) during reselection triggered by re-evaluation or pre-emption indicated by the physical layer.

NOTE X1: It is up to UE implementation to re-evaluate or pre-empt before ‘m-$ T\_{3}$’ or after ‘m-$ T\_{3}$’ but before ‘m’. For re-evaluation, m is the slot where it will be signalled at first time as specified in section 8.1.4 of TS 38.214. For pre-emption, m is the slot where corresponding PSSCH duration is located as specified in section 8.1.4 of TS 38.214.

NOTE X2: If the selected sidelink grant corresponds to transmissions of multiple MAC PDUs is in use by a UE, it is up to UE implementation whether to apply re-evaluation check to the resource in non-initial reservation period that have been signalled neither in the immediate last nor in the current period.

NOTE X3:It is up to UE implementation whether to set the reservation period in the re-selected resource to replace pre-empted resource.

NOTE X4: it is up to UE implementation whether to trigger resource reselection due to deprioritization as specified in clause 16.2.4 of TS 38.213 [6], clause 5.14.1.2.2 of TS 36.321 [22] and clause 5.22.1.3.1a.