**#3GPP TSG RAN WG1 #104-e R1-210xxxx**

**e-Meeting, January 25th – February 5th, 2021**

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**Source:** Moderator (LG Electronics)

**Title:** Feature lead summary#1 for physical layer procedure aspects in AI 7.2.4

**Document for:** Discussion and decision

# **Potential issues for email discussions**

* Physical layer procedure
	+ Thread 1
		- Issue #1
	+ Thread 2
		- Issue #4

# **Physical layer procedure**

Issue #1: Remaining UL/SL prioritization rule

* Issue #1-1: How SL HARQ-ACK report is piggybacked on PUSCH
	+ Aspects on priority index of the collided PUSCH [vivo,3] [LGE,5]
	+ Aspects on non-overlapping PUCCH collided with a PUSCH [Apple,11] [DCM,14]
* Issue #1-2: Prioritization rule between PUSCH carrying SL HARQ-ACK reports and SL transmission [vivo,3] [LGE,5] [Fujitsu,7]
	+ Option 1: No spec change is needed [LGE,5]
	+ Option 2: SL transmission is prioritized when the SL transmission is prioritized over both UL-SCH and SL HARQ-ACK reporting [vivo,3] [Fujitsu,7]
* Issue #1-3: Further consideration on prioritization rule between PUCCH for the response of MsgB and SL TX [LGE,5]
* Issue #1-4: Further consideration on prioritization rule between SL reception and PUCCH carrying SL HARQ-ACK report [DCM,14]
* Issue #1-5: Further consideration on how to handle the case when a UE drops PSCCH/PSSCH retransmission due to lack of processing time [ASUSTeK,15]

Issue #2: Further clarification on SL power control

* Issue #2-1: Clarification on reference RS is used for pathloss derivation [vivo,4] [ASUSTeK,15]
* Issue #2-2: Whether or not to remove CBR part when DL pathloss is used [Spreadtrum,8]

Issue #3: Additional Prioritization rule between PSFCH TX and PSFCH RX or between PSFCH TX and PSFCH TX for tie-break [CATT,2]

* Not support: [Apple,11]

Issue #4: Interpretation of resource reservation period field in a SCI format 1-A [OPPO,1] [CATT,2] [vivo,3] [LGE,5] [Intel,6] [ZTE,9] [Samsung,10] [Apple,11] [Qulacomm,12] [Sharp,13] [DCM,14]

* Option 0: No additional agreement
* Option 1: If a UE transmits a SCI format 1-A in slot n in a resource pool, and if “Resource reservation period” in the SCI format 1-A indicates P’ (following 8.1.7 of 38.214), [LGE,5] [Intel,6] [DCM,14]
	+ P’ is counted in (i.e. The number of slots in the resource pool between slot n and slot n+P’ is always the same as P’ (including slot n+P’ itself)).
* Option 1’: Option 1 + updated equation in 8.1.7 (N is the number of slots belonging to the resource pool) [Samsung,10] [Apple,11]
* Option 2: If a UE transmits a SCI format 1-A in slot n in a resource pool, and if “Resource reservation period” in the SCI format 1-A indicates P’ (following 8.1.7 of 38.214), P’ is counted in (i.e. The number of slots in the resource pool between slot n and slot n+P’ can be less than P’).
	+ Option 2-1: No further change [CATT,2]
	+ Option 2-2: Add “UE expects belong to the set of slots assigned to the resource pool.” [CATT,2] [Intel,6] [Sharp,13]
	+ Option 2-3: Add “If slot  is not in the resource pool, the next slot in the resource pool should be used instead.” [OPPO,1] [vivo,3] [Intel,6]
* Option 3: If a UE transmits a SCI format 1-A in slot n in a resource pool, “Resource reservation period” P in the SCI format 1-A indicates the period in terms of ms. [Qulacomm,12]
	+ If the physical slot after P ms is not in the resource pool, the next slot in the resource pool should be used instead.
* Option 4: If a UE transmits a SCI format 1-A in slot n in a resource pool, and if “Resource reservation period” in the SCI format 1-A indicates P’ (following 8.1.7 of 38.214), P’ is counted in the slots that can be used for SL transmission (i.e. the gap between the slots indicated in SCI within two periods is P). [ZTE,9]
	+ Add “UE expects belong to the set of slots assigned to the resource pool.”

# **References**

1. R1-2100136 Remaining open issues and corrections for physical layer procedure OPPO
2. R1-2100335 Discussion and TPs on physical layer procedures in NR V2X CATT, GOHIGH
3. R1-2100410 Maintenance on physical layer structure for NR sidelink vivo
4. R1-2100412 Maintenance on NR sidelink synchronization and procedures vivo
5. R1-2100516 Discussion on essential corrections in physical layer procedure LG Electronics
6. R1-2100631 Corrections to sidelink procedures Intel Corporation
7. R1-2100735 Remaining issues on physical layer procedures for NR sidelink Fujitsu
8. R1-2100800 Remaining issues on sidelink physical layer procedure Spreadtrum Communications
9. R1-2100938 The slot set for SL resource allocation procedure ZTE, Sanechips
10. R1-2101175 Draft CR on Sidelink Physical Duration to Logical Slot Conversion Samsung
11. R1-2101344 Remaining Issues of Sidelink Physical Layer Procedures Apple
12. R1-2101438 Remaining Issues in Physical Layer Procedure Qualcomm Incorporated
13. R1-2101532 Remaining issues on physical layer structure and procedures for NR sidelink Sharp
14. R1-2101583 Maintenance for sidelink physical layer procedure NTT DOCOMO, INC.
15. R1-2101650 Remaining issues on sidelink procedure ASUSTeK
16. R1-2101707 Draft\_CR\_TS38.212 Ericsson
17. R1-2101708 Draft\_CR\_TS38.213 Ericsson
18. R1-2101709 Draft\_CR\_TS38.306 Ericsson
19. R1-2101733 Correction on determination of PSFCH resources based on a set of configured PRBs Huawei, HiSilicon