**Proposal for email thread topics for Rel-16 5G V2X maintenance**

Thread #1

* Issue PS-1: PSSCH DMRS mapping

Thread #2

* Issue M1-1-1: SL HARQ-ACK reporting when SL FB is not used (considering LS in R1-2104559)

Thread #3

* Issue M1-2-1: Value of n\_CI

Thread #4

* Issue M2-5: HARQ RTT time gap capturing issue in MAC (considering LS in R1-2104559)

Separate threads for TP capturing agreements made in previous meetings and preparation of reply LS

Thread #A

* Issue M1-4: TPs corresponding to agreements in previous meetings (Agreement/LS from RAN1#104, reply LS received in R1-2104160)

Thread #B

* Issue M2-1: TP to implement the agreement from [104b-e-NR-5G\_V2X-03]

Thread #C

* Issue PP-1: TP for multiplexing SL HARQ-ACK reports on a PUSCH

Thread #D

* LS reply to R1-2104559 taking into account the outcome of Thread #2 and Thread #4.

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| Company | Comments |
| LG Electronics  | From our perspective, it is doubtful that Issue PS-1 is really an essential one needed to be resolved at this late timing of maintenance phase. So, our preference is to remove it. In addition, when discussing Issue M1-1-1, we should limit the scope of email discussion to the contents (i.e., how to report ACK/NACK via PUCCH when using CG resources) mentioned in the RAN2 LS of R1-2104559. In other words, it should be avoided to discuss an optimization relevant to other aspects (e.g., how to report ACK/NACK via PUCCH when using DG resources) together.  |
| ZTE, Sanechips | OK with the proposal |
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**Summary of inputs**

* To be summarized

**Topics in each FL summary**

**Physical layer structure**

***Issue#PS-0: Whether/how to capture in the specifications will be discussed in Editor CR phase.***

* [1, ETRI]: Correct reference section numbers for CSI-RS/DM-RS transmissions in 214
* [4, Huawei, HiSilicon]: (PSSCH DMRS time domain OCC) Delete the last coulum of Table 8.4.1.1.2-2 in 211to make l^' for the time domain OCC of PSSCH DM-RS only equal to 0.
* [4, Huawei, HiSilicon]: (PSSCH DMRS parameter) λ in Table 8.4.1.1.2-2 in 211 is changed to Δ.

***Issue#PS-1***: PSSCH DMRS mapping

* Change from “allocate” to “available”
* [2, NEC]

***Issue#PS-2***: SCS offset in SL BWP and UL BWP

* Change the definition of sidelink offset $k\_{0}^{μ}$ used in OFDM baseband signal generation
* TP for Clause 5.3.1 for 211 is

 $μ\_{0}$ is the largest $μ$ value among the subcarrier spacing configurations by the higher-layer parameter *scs-SpecificCarrierList* for uplink or downlink, and by the higher-layer parameter *sl-SCS-SpecificCarrierList* for sidelink.

* [3, Sharp]

***Issue#PS-3***: Clarifying multiple PSFCH transmission

* It may need to fix the description in simultaneous PSFCH transmission/reception.
* [3, Sharp]
* This issue may be categorized as physical layer procedure.

**Synchronization**

Issue SY-1: NR SL-TDD-Config in the coverage of eNB

Issue SY-2: Indication of the non-TDD case in sl-TDD-Config

Issue SY-3: Clarification of the notation of “$u\_{slots}^{SL}$”

**Mode 1**

Issue M1-1: SL HARQ-ACK reports to gNB

* M1-1-1: SL HARQ-ACK reporting when SL FB is not used (see CATT (P1-P3), OPPO (Section 2), Ericsson)
	+ This topic is related to Q1 in the LS from RAN2 (R1-2104559) which is discussed in some contributions (see LGE (P2))
* M1-1-2: SL HARQ-ACK reporting when the UE does not perform SL transmission on the resources provided by a DG (see Fujitsu (P1), DCM (TP1))
* M1-1-3: SL HARQ-ACK reporting when multiple pools are configured (see vivo (TP3), ZTE (P2), ASUSTeK (TP1))
* M1-1-4: SL HARQ-ACK reporting in an incomplete PSFCH period (see vivo (TP4), ZTE (P1))
* M1-1-5: Aspects related to PUCCH power control (see vivo (TP5))
* M1-1-6: k>0 in offset between PSFCH and HARQ-ACK reporting (see Sharp (TP3))

Issue M1-2: DCI-related aspects

* M1-2-1: Value of n\_CI (see vivo (TP1))
* M1-2-2: DCI size alignment (see vivo (TP2))
* M1-2-3: Configuration index in DCI format 3\_0 for SL-CS-RNTI for retransmissions (see ASUSTeK (TP5), Sharp (TP1))
* M1-2-4: Search space overlapping between SL and Uu in the same carrier (LGE (P1))

Issue M1-3: Editorial corrections

* 38.213
	+ Clause 10.2A: clarification of the CG validated (ASUSTeK (TP4))
	+ Clause 16.5: Correct “One HARQ-ACK information bit” (Sharp (TP4))
		- FL assessment: The correction seems reasonable but it was discussed earlier without consensus.
* 38.214
	+ Clause 8.1.2: correct reference (ASUSTeK (TP3))
	+ Clause 8.1.2.1:
		- Indicate how the “Configuration index” field is set (see ZTE (P5), ASUSTeK (TP3))
		- RRC parameter name alignment *timeGapFirstSidelinkTransmission* (ASUSTeK (TP3))
	+ Clause 8.4.1.2.2 typo (see OPPO (TP3))

Issue M1-4: TPs corresponding to agreements in previous meetings

* TS 38.213 Clause 16.5: Agreement/LS from RAN1#104, reply LS received in R2-2104463 (see vivo (TP6), ZTE (P4), Nokia+NSB (P1), DCM (TP2))

**Mode 2**

Issue M2-1 – TP to implement the agreement from [104b-e-NR-5G\_V2X-03]

Issue M2-2 – Resource exclusion/selection for multiple transport blocks

Issue M2-3 – Correction to step 6) to include slots within Tproc0

Issue M2-4 – Introduce a dropping condition when HARQ RTT time gap is not met

Issue M2-5 – HARQ RTT time gap capturing issue in MAC – related to LS R1-2104559

Issue M2-6 – In TS 38.214, the subscripts of the notations $t'\_{m+q×P\_{rsvp\\_RX}^{'}}^{SL}$ and $R\_{x,y+j×P\_{rsvp\\_TX}^{'}}$should be changed into $t'\_{mod(m+q×P\_{rsvp\_{RX}}^{'},T^{'}\_{max})}^{SL}$ and $R\_{x,mod(y+j×P\_{rsvp\\_TX}^{'},T^{'}\_{max})} $respectively

Issue M2-7 – Exclude the slots with PSFCH when sl-LengthSymbols≤9 in the identification of candidate resources in the sensing procedure

Issue M2-8 – Clarification on timing relation between re-evaluation moment and initial selection moment

**Physical layer procedure**

Issue PP-1: TP for multiplexing SL HARQ-ACK reports on a PUSCH

* Huawei [R1-2104235], CATT [R-12104478], vivo [R1-2105464], Ericsson [R1-2105895], LG [R1-2105291], Apple [R1-2105082], DCM [R1-2105681]

Issue PP-2: Prioritization rule between PUSCH carrying SL HARQ-ACK reports and SL TX and/or RX

* Fujitsu [R1-2102720], Apple [R1-2105082]

Issue PP-3: Editorial corrections

* Value of sl-PSFCH-RB-Set
	+ Huawei [R1-2104235]
* Applicable condition of using sl-P0-PSSCH-PSCCH
	+ Qualcomm [R1-2104649]
* Replacement of “a serving cell” with “a carrier”
	+ DCM [R1-2105681]
* Reference correction
	+ DCM [R1-2105681]

**QoS**

Issue QS-1: UE behaviour if highest CBR in CBR range configuration is less than 100 %