**3GPP TSG RAN WG1 #114** **R1-230xxxx**

**Toulouse, France, August 21st – 25th, 2023**

**Agenda item:** 9.17

**Source:** Samsung

**Title:** Summary of email discussions [114-R18-38.213-NR\_SL\_enh2]

**Document for:** Discussion and decision

# Introduction

The purpose of this document is to collect inputs/comments on the draft CR for TS 38.213 [draftCR\_38213 SL](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_114/Inbox/drafts/9.17%28Other%29/%5B38.213%20draft%20CRs%5D/NR_SL_enh2/R1-230xxxx%20draftCR_38213%20SL.docx) on the introduction of NR sidelink evolution. If a comment on a particular aspect has been made by another company, please do not repeat it until, if needed, after a response.

The first checkpoint is on September 5, UTC 13:00.

# First Round Discussion

Please provide your comments on the draft CR for TS 38.213 [draftCR\_38213 SL](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_114/Inbox/drafts/9.17%28Other%29/%5B38.213%20draft%20CRs%5D/NR_SL_enh2/R1-230xxxx%20draftCR_38213%20SL.docx).

|  |  |
| --- | --- |
| Company | Comments |
| LGE | On 16.2.0, according to the following text in the agreement, the definition of P\_CMAX would need to be updated accordingly. For instance, we can add “and is determined for all the S-SSB repetitions, if applicable” for the P\_CMAX part. * For above Alts, $P\_{CMAX}$ is determined according to TS 38.101-1 for transmission of all S-SSB repetitions on all used RB sets

As we know, the value of P\_CMAX could be different based on the assumption on the transmission structure. On 16.2.3, it would be necessary to update the PSFCH power control as per the following agreement.AgreementRel-16/17 PSFCH power control and PSFCH TX/TX prioritization rule are performed across carriers for all PSFCH transmissions over all the aggregated SL carriers at the same time.* The UE does not expect to be provided with a (pre)configuration that would result in different transmit power per PSFCH on different carriers.

For instance, following updates can be considered:A UE with $N\_{sch,Tx,PSFCH}$ scheduled PSFCH transmissions for HARQ-ACK information and conflict information, and capable of transmitting a maximum of $N\_{max,PSFCH}$ PSFCHs, determines a number $N\_{Tx,PSFCH}$ of simultaneous PSFCH transmissions and a power $P\_{PSFCH,k}(i)$ for a PSFCH transmission $k$, $1\leq k\leq N\_{Tx,PSFCH}$, on all the resource pools in PSFCH transmission occasion $i$ on all the active SL BWP $b$ of all the carrier $f$as…For resource pools configured with PSFCH resources overlapping in time for all the carriers, the UE either expects not to be provided with *dl-P0-PSFCH* or *dl-Alpha-PSFCH* in any of the resource pools, or expects to be provided with the same values of *dl-P0-PSFCH* and the same values of *dl-Alpha-PSFCH* for all the resource pools.On 16.3.0, following part need to be moved after the final PSFCH resource determination with some typo correction. In our understanding, dropping PRB belonging to common interlace will be performed after the UE decides the PRBs for actual PSFCH transmission. Moreover, the final determination on PRBs for the actual PFSCH transmission would be selected among PSFCH resources across multiple PRB sets when $N\_{type }^{PSFCH}=N\_{subch }^{PSSCH}$.A PRB $s\_{1}$ in the first interlace is excluded from the resources for a PSFCH transmission, if $|s\_{1}-s\_{2}|\leq 5$ for $μ=10$ or $|s\_{1}-s\_{2}|\leq 2$ for $μ=21$ for any PRB $s\_{2}$ in the PRB subset, and $\left(s\_{high}-s\_{low}\right)\geq 88$ for $μ=10$ or $\left(s\_{high}-s\_{low}\right)\geq 44$ for $μ=21$, where PRB $s\_{high}$ and PRB $s\_{low}$ are the largest and smallest PRB indexes, respectively, in the resources for the PSFCH transmission assuming PRB $s\_{1}$ is excluded. On 16.4, according to the agreement, it would be necessary to clarify the meaning of the lowest subchannel. We can add “index” after “the lowest sub-channel”. **Agreement**For interlace RB-based PSCCH/PSSCH transmission in SL-U, support the following:* Option 1: lowest sub-channel is the sub-channel with smallest sub-channel index
 |
| CATT/GOHIGH | * **Comments 1 (Clause 16.1)**

Regarding the configuration of additional candidate S-SSB occasions, it should be accurately captured, as the following agreement, that each legacy Rel-16/17 S-SSB occasion is supported to configure additional S-SSB occasion(s), not “each slot that includes S-SS/PSBCH”.**Agreement**Regarding the number and location(s) of additional candidate S-SSB occasions, support:* Option 2 (12): Each R16/R17 NR SL S-SSB slot has K corresponding additional candidate S-SSB occasion(s) in different time slot(s), and the gap between them is (pre-)configured
	+ FFS details, e.g., value of K, details on gap length (including possibility of being 0), etc.
* **Comments 2 (Clause 16.2.5)**

Some typos should be corrected, where “S-SS/PBCH” should be changed to “S-SS/PSBCH”.* **Comment 3 (Clause 16.2.5)**

Regarding the details of PSFCH power control, the following two highlight parts from TS 36.213 are missed or incorrectly captured.

|  |
| --- |
| In sidelink transmission mode 3 or 4, if a UE's sidelink transmission on a carrier overlaps in time with sidelink transmission on other carrier(s) and its total transmission power exceeds defined in [6], the UE shall adjust the transmission power of the sidelink transmission which has SCI whose "Priority" field is set to the largest value among all the "Priority" values of the overlapped sidelink transmissions such that its total transmission power does not exceed defined in [6]. In this case, calculation of the adjustment to the sidelink transmission power is not specified. If the transmission power still exceeds  defined in [6] after this power adjustment, the UE shall drop the sidelink transmission with the largest "Priority" field in its SCI and repeat this procedure over the non-dropped carriers. It is not specified which sidelink transmission the UE adjusts when sidelink transmissions overlapping in time on two or more carriers have the same value for the "Priority" field. |

* **Comments 4 (Clause 16.2.5)**

Regarding simultaneously transmissions over multiple carriers, the procedure of Clause 16.2.3 cannot be directly reused, such as the maximum transmission power and the maximum transmission number should be re-defined over all the multiple carriers.Agreement:Rel-16/17 PSFCH power control and PSFCH TX/TX prioritization rule are performed across carriers for all PSFCH transmissions over all the aggregated SL carriers at the same time.* The UE does not expect to be provided with a (pre)configuration that would result in different transmit power per PSFCH on different carriers.
* **Comments 5 (Clause 16.3.0)**

IUC mechanism is not discussed in Rel-18 SL-U, so the associated parts should be removed.* **Comment 6 (Clause 16.3.0)**

The following yellow highlight part should be removed, because $N\_{type }^{PSFCH}⋅M$ indicates all the candidate PSFCH frequency resources within all the used RB sets associated with PSSCH transmission.if *sl-PSFCH-CandidateResourceType* is indicated as *allocSubCH*, $N\_{type }^{PSFCH}=N\_{subch }^{PSSCH}$ and $M=\sum\_{k}^{}M\_{subch, slot,k}^{PSFCH,n}$ where the sum is over all RB-sets including resources for the corresponding PSSCH, and the $N\_{type }^{PSFCH}⋅M$ interlaces per RB-set or PRB subsets are associated with the $N\_{subch }^{PSSCH}$ sub-channels of the corresponding PSSCH |
|  |  |
|  |  |
|  |  |
|  |  |