**[101-e--NR-5G\_V2X\_NRSL-SYNC-03]**

**Email discussion regarding**

* **Issue 12: Collision between S-SSB and DL slots**
* **Issue 14: (Pre-)configuration of SL BWP**
* **Issue 18: S-SSB RSRP measurement**

**Till 5/28. If consensus can be reached, any follow-up TP by 6/3 – Teng (CATT)**

**Issue 12 Collision between S-SSB and DL slots**

***FL Proposal: S-SSB transmission/reception slots are not supposed to overlap with DL slots.***

|  |  |
| --- | --- |
| **Company** | **Views** |
| Huawei, HiSilicon | Agree. The phrasing should be more formally:* S-SSB transmission/reception slots are assumed to be configured not to include any DL slot.

The same principle has been captured in LTE-V.  |
| Intel | Our understanding is that on a given carrier all SL resources are configured on UL resources only. Therefore, our proposal is: “SL transmissions on a given carrier do not overlap with DL and FL slots.” |
| MediaTek | Agree with FL’s proposal. Also support Intel’s proposal since we only use indicated UL slots for the potential SL operation, i.e., FL slots are precluded. |
|  |  |
|  |  |
|  |  |

**Issue 14 (pre-)configuration of SL BWP**

***FL Proposal:***

* ***The same SL BWP should be (pre)configured for both RRC idle (or out of coverage NR V2X UEs) and RRC connected UEs.***
* ***Not support that the UE assumes the subcarrier with index 0 in the S-SS/PSBCH block is aligned with a subcarrier with index 0 in the SL BWP.***

|  |  |
| --- | --- |
| **Company** | **Views** |
| Huawei, HiSilihcon | Agree.For the first bullet, the UE supports only single active BWP in Uu link. In sidelink, the only way is make the SL BWP in RRC connected and idle/inactive state the same. The final form of the proposal needs to avoid the word “should”, e.g. “is”.For the second bulletin, the current specification wording cannot be supported by any agreements and contradicts the agreements that the S-SSB frequency location is configured by absoluteFrequencySSB-SL.  |
| Intel | We do not see the need for this proposal. |
| MediaTek | It seems no need of the proposals. For proposal 1, the early agreement of the single SL BWP should be enough. |
|  |  |
|  |  |
|  |  |

**Issue 18 S-SSB RSRP measurements**

***FL Proposal: S-SSB RSRP is measured based on S-SSS. In addition, PSBCH-DMRS can be used for S-SSB RSRP measurement optionally.***

|  |  |
| --- | --- |
| **Company** | **Views** |
| Huawei, HiSilicon | Disagree. The use of DM-RS has been captured already clearly in 38.215 as following.

|  |
| --- |
| PSBCH Reference Signal Received Power (PSBCH-RSRP) is defined as the linear average over the power contributions (in [W]) of the resource elements that carry demodulation reference signals associated with physical sidelink broadcast channel (PSBCH). |

No need to re-open the discussion. |
| Intel | Disagree. LTE V2X sync procedure was agreed to be reused. DMRS should be used for PSBCH RSRP measurements. |
| MediaTek | Agree with FL’s proposal. The current spec just copied/pasted the LTE spec without any agreement as checked with the editor. There is also no agreement and technical reasons to reuse LTE PSBCH-DMRS for NR V2X measurement. Actually, there is the fundamental change on the NR S-SSB structure with the length-127 sequence than length-63 sequence in LTE V2X. The total number of REs for S-SSS is increased to 254 REs, almost same as 264 REs of PSBCH-DMRS. So it is quite different than LTE V2X. Additionally, the gold-sequence based S-SSS has the better correlation performance compared to PSBCH-DMRS. According to our simulation results following RAN4 assumptions of defining RSRP absolute accuracy requirements, it shows the better performance for S-SSS than PSBCH-DMRS in AWGN and fading channels.

|  |
| --- |
| absolute accuracy @SINR=-6dB |
| Channel | type | 5% | 50% | 95% | absolute accuracy |
| AGWN | PSBCH | -0.691 | -0.36 | -0.043 | 0.691 |
| S-SSS | -0.17 | 0.15 | 0.5 | 0.5 |
| TDLC100ns-300Hz | PSBCH | -1.21 | -0.69 | -0.27 | 1.21 |
| S-SSS | -0.67 | -0.07 | 0.32 | 0.67 |
| TDLC30ns-1400Hz | PSBCH | -1.21 | -0.66 | -0.11 | 1.21 |
| S-SSS | -0.87 | -0.27 | 0.19 | 0.87 |

Besides, in the most cases for SL operation, UE can just measure S-SSS according to the priority indicated by SSS ID with no need of PSBCH decoding or PSBCH-DMRS measurement. However, PSBCH-DMRS measurement will mandate UE to perform PSBCH-DMRS measurement unnecessarily even with no need of PSBCH decoding, which causes the additional complexity for UE implementation.In NR uu, S-SSS than PSBCH-DMRS has been adopted for RSRP measurement and PSBCH-DMRS can be used optionally.So we prefer reusing the NR uu mechanism as proposed by FL to improve the performance while avoiding the unnecessary measurement and complexity. |
|  |  |
|  |  |
|  |  |