**[101-e--NR-5G\_V2X\_NRSL-SYNC-02]**

**Email discussion regarding**

* **Issue 8: Start symbol of S-SSB**
* **Issue 17: In-device coexistence between LTE-V2X and NR-V2X**
* **Issue 5: Sidelink timing definition**

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

**Issue 8 Start symbol of S-SSB**

***FL Proposal: The first OFDM symbol in an S-SS/PSBCH block is mapped to the first OFDM symbol in the slot.***

|  |  |
| --- | --- |
| **Company** | **Views** |
| Huawei, HiSilicon | Ok with it. |
| Intel | Agree. Clarification is needed. |
| MediaTek | Fine with it. |
| OPPO | Agree  |
| Nokia, Nokia Shanghai Bell | Agree |
| vivo | Agree.  |
| ITRI | We are fine with the proposal. |

**Issue 17 In-device coexistence LTE-V2X and NR-V2X**

***FL Proposal: When a UE is configured to operate the in-device coexistence between LTE-V2X and NR-V2X, the SL transmission timing and DFN of NR-V2X are derived from those of LTE-V2X***

|  |  |
| --- | --- |
| **Company** | **Views** |
| Huawei, HiSilicon | Disagree. As discussed during the preparing stage, we think the only issue left is to capture the subframe alignment between LTE-V and NR-V sidelinks. The related agreements as following: * Agreements on TDM solutions
	+ For TDM solutions for in-device coexistence between LTE and NR V2X:
		- Time Alignment
			* Subframe boundary alignment is required between LTE and NR V2X sidelinks
			* Both LTE and NR V2X sidelinks are aware of the time resource index (e.g., DFN for LTE) in both carriers
* Agreements on FDM solutions
	+ For intra-band and inter-band FDM dynamic power sharing solutions, the following additional conditions apply:
		- Subframe boundary alignment is required between LTE and NR V2X sidelinks
		- Both LTE and NR V2X sidelinks are aware of the time resource index (e.g., DFN for LTE) in both carriers

If a UE cannot detect the NR-V S-SSB in coexistence scenarios, then the UE can derive its sidelink timing by implementation according to the timing in LTE-V module inside or by its local timing.  |
| Intel | Disagree. We only need subframe aligned timing. Regarding DFN, we think it should be supported by configuration but not mandated |
| MediaTek | No need of the proposal. Maybe the early agreement on the subframe alignment is enough. How to secure the alignment is up to UE implementation.  |
| OPPO | DisagreeAccording to the agreement copied above, the subframe boundary of NR SL and LTE SL should be aligned. how to promise that is up to UE implementation since both modules are within a UE. No specification is needed. |
| Nokia, Nokia Shanghai Bell | Disagree.According to the WID, FDM-based in-device coexistence solutions with static power allocation should be supported when LTE SL and NR SL are in the different frequency bands. According to the NR V2X TR 38.885 when inter-band FDM-based in-device coexistence with static power assignment of Pc,max for each carrier is configured, synchronization between the SLs is not assumed. Therefore, statements that imply that synchronization is always required for in-device coexistence cannot be agreed.Regarding the intra-band case when synchronization is needed, we think that it would be better if NR V2X is synchronized to SSBs from other NR V2X UEs. There will likely be UEs that are not operating in the in-device coexistence mode and those NR V2X UEs will anyway use SSBs from other NR V2X UEs. |
| vivo | Disagree. The agreement made in-device coexistent just specifies that the subframe level boundary between LTE and NR are aligned, but it does not impose any restriction on the DFN mis-alignment. |
| ITRI | Disagree. The coexistence between LTE-V2X and NR-V2X will cause the time alignment issue. |

**Issue 5 Sidelink timing definition**

***FL Proposal: For sidelink transmissions, uplink timing is used on shared carrier, and downlink timing is used on dedicated carrier.***

|  |  |
| --- | --- |
| **Company** | **Views** |
| Huawei, HiSilicon | Agree. To handle SL-UL interference in shared carriers in NR-V, we have to use UL timing alignment. For dedicated carriers, DL timing is used to avoid the need for UE to perform PRACH to acquire TAC from gNB, and hence allow UE to operate SL in idle/inactive modes. |
| Intel | Disagree. Mode-2 UE may not have uplink timing. |
| MediaTek | We can just reuse the definition for LTE SL time relations in section 9.10 of TS36.211. |
| OPPO | Agree in principle. Further clarification is needed for shard carrier: the uplink timing without TA is applied, follows the same mechanism as LTE-V2X. |
| Nokia, Nokia Shanghai Bell | Ok to use UL timing at least for mode 1 in shared carrier |
| vivo | Not sure if this proposal is applicable to both mode-1 and mode-2, or is just used for mode-1?For mode-2, there may be no Uu timing. |
| ITRI | We agree the uplink timing is used on shared carrier. But, downlink timing is used on dedicated carrier need to be FFS. |