**[103-e-NR-Rel-16-V2X-07]: Email discussion/approval regarding clarification on the sidelink slot index**

* **Issue PP-7: Interpretation of sidelink slot for TRIV and resource reservation period**
* **Issue M2-6: Interpretation of sidelink slot for sensing and resource selection procedure**

**till 10/29, with a potential CR by 11/4 – Hanbyul (LGE)**

**Issue PP-7: Interpretation of sidelink slot for TRIV and resource reservation period**

Q1: If a UE transmits a SCI format 1-A in slot n in a resource pool, and if “Time resource assignment” in the SCI format 1-A indicates ti, what is UE’s understanding?

* Option 1: ti is counted in $\left(t'\_{0}^{SL}, t'\_{1}^{SL}, t'\_{2}^{SL},…\right)$ (i.e. The number of slots in the resource pool between slot n and slot n+ti is always the same as ti (including slot n+ti itself).
* Option 2: ti is counted in $\left(t\_{0}^{SL},t\_{1}^{SL},t\_{2}^{SL},...\right)$ (i.e. The number of slots in the resource pool between slot n and slot n+ti can be less than ti).

|  |  |  |
| --- | --- | --- |
| Company | Option | Comment |
| LGE | Option 1 | In case when we go to Option 2, there are several problems as below. * First of all, resource pool configuration should ensure that all the slots indicated by TRIV belong to the resource pool. Or, resources need to be selected so that all the reserved resources belongs to a resource pool. Both cases will degrades flexibility on scheduling or configuration. Note that in Rel16, RAN4 defined the requirement for the case when NR V2X operates on the licensed band. So, the above stated problem will be worse than the LTE V2X case which has the requirement only for the case when the LTE V2X operates on ITS-dedicate band.
* Next, depending on the resource pool configuration, the effective window size for TRIV could be much smaller than 32 slots. For this case, it will degrades the benefits of NR V2X time-domain assignment mechanism which was introduced to make inter-resource collision probability low by indicating more resources within a wider range of slots compared to LTE V2X.

In our understanding, there is no case when different resource pools are fully or partially overlapped in time-and-frequency domain. With this understanding, when a UE receives SCI from another UE in a slot belonging to its TX resource pool, there is no ambiguity on the TRIV interpretation.  |
|  |  |  |
|  |  |  |
|  |  |  |

Q2: 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, what is UE’s understanding?

* Option 1: P is counted in $\left(t'\_{0}^{SL}, t'\_{1}^{SL}, t'\_{2}^{SL},…\right)$ (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 2: P is counted in $\left(t\_{0}^{SL},t\_{1}^{SL},t\_{2}^{SL},...\right)$ (i.e. The number of slots in the resource pool between slot n and slot n+P can be less than P).

|  |  |  |
| --- | --- | --- |
| Company | Option | Comment |
| LGE | Option 1 | As answered in Q1, the similar problem will occur in the case when Option 2 is used.  |
|  |  |  |
|  |  |  |
|  |  |  |

**Issue M2-6: Interpretation of sidelink slot for sensing and resource selection procedure**

Q3: When a UE performs PSSCH resource selection procedure in sidelink resource allocation mode 2, over which slots does the UE monitor SCIs for sensing operation?

* Option 1: $\left(t'\_{0}^{SL}, t'\_{1}^{SL}, t'\_{2}^{SL},…\right)$ in the sensing window.
* Option 2: $\left(t\_{0}^{SL},t\_{1}^{SL},t\_{2}^{SL},...\right)$ in the sensing window.

|  |  |  |
| --- | --- | --- |
| Company | Option | Comment |
| LGE | Option 1 | We think that it is desirable to perform the sensing operation for slots belonging to the TX resource pool considering that it is unclear whether/how to measure sidelink interference outside the TX resource pool, which is used for TX resource (re)selection procedure.  |
|  |  |  |
|  |  |  |
|  |  |  |

**Others**

Q4: If there are any other aspects that need to be considered in the scope of this email discussion, please specify them.

|  |  |
| --- | --- |
| Company | Comment |
| LGE | A SCI and reserved resources indicated by the SCI can be located in different SFN cycle. Meanwhile, the notation $\left(t'\_{0}^{SL}, t'\_{1}^{SL},…, t'\_{T'\_{max}^{}-1}^{SL}\right)$ or $(t\_{0}^{SL},t\_{1}^{SL},\cdots ,t\_{T\_{max}-1}^{SL})$ is logical slots confined with a SFN cycle ($0\leq t\_{i}^{SL}<10240×2^{μ}, 0\leq i<T\_{max}, 0\leq t'\_{i}^{SL}<10240×2^{μ}, 0\leq i<T'\_{max}^{}$). Regardless of which options are selected in Q1-Q2, when we express the slot position of the reserved resources with respect to the SCI reception timing by using the above notation, it would be necessary to clarify how to handle the case the indicated slot position of the reserved resource is outside the SFN cycle where the SCI is transmitted. For instance, if the SCI is transmitted in slot n, and if the resource reservation period indicated by the SCI is P, the location of the reserved resource would be slot (n+P mod T’\_max).  |
|  |  |
|  |  |
|  |  |