[100b-e-NR-5G\_V2X\_NRSL-PHYstructure-03]

Email discussion/approval regarding signaling of resource pool

[100b-e-NR-5G\_V2X\_NRSL-PHYstructure-03] Email discussion/approval regarding signaling of resource pool
   - A. Periodicity of resource pool bitmap, length of the bitmap, excluded slots, reserved slots

till 4/24, with potential TP till 4/29 – Jeongho (SS)

This document has the following questions.

A. What is the periodicity of resource pool bitmap?

B. What is the length of the bitmap for resource pool configuration?

C. How to obtain the excluded slots?

D. Is the reserved slot needed?

# **A. What is the periodicity of resource pool bitmap?**

Based on the submitted contributions, there are the following alternatives and supporting companies.

* Alt A-1. 10240 ms, i.e., 10240×2^μ slots
	+ ~~[Huawei, HiSilicon],~~ [ZTE, Sanechips], [vivo], [OPPO], [LGE], [TCL], [CATT], [Apple], [Panasonic], [Sharp], [Qualcomm]
* Alt A-2. 20 ms
	+ [CMCC]
* Alt A-3. Depending on TDD UL/DL patterns
	+ [Spreadtrum], [NEC], [Huawei, HiSilicon]
* Alt A-4. 10240 slots
	+ [NEC]

Based on the contributions, the following proposal can be made.

*Proposal 1. For the periodicity of resource pool bitmap, 10240 ms is used.*

Please share your views if Proposal 1 is agreeable or, if not, please share your views on the reason why it is not workable.

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| **Company** | **Views** |
| Huawei, HiSilicon | No, and our paper does not state Alt A-1. We clarify in relation to A-3 here:* When SL is transmitted in a UL carrier, If NR sidelink is defined on a SFN period, it implies that *TDD-UL-DL-ConfigCommon* does not change or rarely changes within a SFN period, and this is not the assumption in NR Uu design. Instead, to accommodate NR Uu design rather than LTE-V design in a NR shared carrier, there should be a bitmap which applies once per period of *TDD-UL-DL-ConfigCommon* with a slot-by-slot mapping (combined periodicity is applied if pattern1 and pattern2 are both configured) to indicate which UL slots are used for SL, after exclusion of SLSS slots and slots not having at least Y-th, (Y+1)-th, ....., (Y+X-1)-th symbols in a slot for UL.
* When SL is transmitted on ITS carrier, LTE-V solution can be reused, e.g. period can be $10240∙2^{μ}$.
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# **B. What is the length of the bitmap for resource pool configuration?**

Based on the submitted contributions, there are the following alternatives and supporting companies.

* Alt B-1. 8, 16, 32, 64
	+ [ZTE, Sanechips]
* Alt B-2. 16, 32, 64, 128, 256, 512
	+ [vivo]
* Alt B-3. 10, 16, 20, 30, 40 ,50, 60, 100
	+ [OPPO]
* Alt B-4. [1], 2, 3, 4,…, 160
	+ [LGE]
* Alt B-5. Different value depending on SCS
	+ [TCL], [CATT], [Apple]
* Alt B-6. 20 ms
	+ [CMCC]
* Alt B-7. Different value depending on TDD UL/DL patterns
	+ [Spreadtrum], [Panasonic](also for 160 ms), [Sharp]

The values proposed are quite diverging. Please share your views on this issue and the reason of your views on why some specific values are needed.

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| **Company** | **Views** |
| Huawei, HiSilicon | * When SL is transmitted in a UL carrier, the bitmap has the same length as the number of slots in the periodicity of *TDD-UL-DL-ConfigCommon*, excluding SLSS slots and slots not having at least Y-th, (Y+1)-th, ....., (Y+X-1)-th symbols in a slot for UL.
* In case that SL is transmitted on ITS carrier, bitmap and its length can reuse that of LTE-V.
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# **C. How to obtain the excluded slots?**

Based on the submitted contributions, there are the following alternatives and supporting companies.

For “slots not having at least Y-th, (Y+1)-th, ....., (Y+X-1)-th symbols in a slot semi-statically for UL as indicated in TDD-UL-DL-ConfigCommon ”,

* Alt C-1. Replace TDD-UL-DL-ConfigCommon by SL-TDD-Config in PSBCH
	+ [vivo]
* Alt C-2. Confirm WA
	+ [OPPO], [Nokia, NSB], [Panasonic]
* Alt C-3. Use TDD-UL-DL-ConfigCommon or PSBCH
	+ [CMCC]
* Alt C-4. Use different configurations according to in-coverage or out-of-coverage
	+ [LGE]

Please share your views on this issue and the reason of your views with necessity of each alternative.

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| **Company** | **Views** |
| Huawei, HiSilicon |  Confirm the WA (as indicated in our paper) |
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# **D. Is the reserved slot needed?**

Based on the submitted contributions, there are the following alternatives and supporting companies.

* Alt A-1. No need to define.
	+ [ZTE, Sanechips], [vivo]
* Alt A-2. Use reserved slot similarly as defined LTE-V2X procedure.

Please share your views on this issue and the reason of your views with necessity of each alternative.

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| **Company** | **Views** |
| Huawei, HiSilicon | * In case that SL is transmitted in a UL carrier, it is not needed, since a slot-by-slot bitmap with the *TDD-UL-DL-ConfigCommon* period can provide directly the UL-to-SL mapping.
* In case that SL is transmitted on ITS carrier, reserved slots are defined same way as LTE-V.
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