**3GPP TSG-RAN WG1 Meeting #104-e *R1-210XXXX***

**E-meeting, January 25th – Feburary 5th, 2021**

|  |
| --- |
| *CR-Form-v12.1* |
| **[DRAFT]CHANGE REQUEST** |
|  |
|  | **38.213** | **CR** |  | **rev** |  | **Current version:** | **16.4.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

|  |
| --- |
|  |
| ***Title:***  | Restrictions of the slots for S-SSB transmission/reception |
|  |  |
| ***Source to WG:*** | Moderator (CATT), [NTT DOCOMO], [Huawei, HiSilicon], [vivo], [OPPO], [MediaTek] |
| ***Source to TSG:*** | R1 |
|  |  |
| ***Work item code:*** | 5G\_V2X\_NRSL-Core |  | ***Date:*** | 2021-02-01 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-16 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | One of the agreements in RAN1#101-e is not captured in current specification. It is supposed to be included in the specification for limitation that S-SSB transmission/reception slots should be cell-specific UL resources in Uu.Agreements:S-SSB transmission/reception slots are in cell-specific UL resources in Uu. |
|  |  |
| ***Summary of change:*** | Adding one paragraph to capture the missing agreements to restrict that S-SSB transmission/reception slots are in cell-specific UL resources in Uu. |
|  |  |
| ***Consequences if not approved:*** | Missing agreements, and S-SSB slots can use any resources in Uu which lead to wrong transmission. |
|  |  |
| ***Clauses affected:*** | 16.1 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

**<Unchanged parts are omitted>**

## 16.1 Synchronization procedures

A UE receives the following SL synchronization signals in order to perform synchronization procedures based on S-SS/PSBCH blocks: SL primary synchronization signals (S-PSS) and SL secondary synchronization signals (S-SSS) [4, TS 38.211].

A UE assumes that reception occasions of a physical sidelink broadcast channel (PSBCH), S-PSS, and S-SSS are in consecutive symbols [4, TS 38.211] and form a S-SS/PSBCH block.

For reception of a S-SS/PSBCH block, a UE assumes a frequency location corresponding to the subcarrier with index 66 in the S-SS/PSBCH block [4, TS 38.211], is provided by *sl-AbsoluteFrequencySSB*. The UE assumes that a S-PSS symbol, a S-SSS symbol, and a PSBCH symbol have a same transmission power. The UE assumes a same numerology of the S-SS/PSBCH as for a SL BWP of the S-SS/PSBCH block reception, and that a bandwidth of the S-SS/PSBCH is within a bandwidth of the SL BWP. The UE assumes the subcarrier with index 0 in the S-SS/PSBCH block is aligned with a subcarrier with index 0 in an RB of the SL BWP.

A UE is provided, by *sl-NumSSB-WithinPeriod*, a number $N\_{period}^{S-SSB}$ of S-SS/PSBCH blocks in a period of 16 frames. The UE assumes that a transmission of the S-SS/PSBCH blocks in the period is with a periodicity of 16 frames. The UE determines indexes of slots that include S-SS/PSBCH block as $N\_{offset}^{S-SSB}$+$N\_{interval}^{S-SSB}⋅i\_{S-SSB}$, where

- index 0 corresponds to a first slot in a frame with SFN satisfying $(SFN mod 16)=0$

- $i\_{S-SSB}$ is a S-SS/PSBCH block index within the number of S-SS/PSBCH blocks in the period, with $0\leq i\_{S-SSB}\leq N\_{period}^{S-SSB}-1$

- $N\_{offset}^{S-SSB}$ is a slot offset from a start of the period to the first slot including S-SS/PSBCH block, provided by *sl-TimeOffsetSSB*

- $N\_{interval}^{S-SSB}$ is a slot interval between S-SS/PSBCH blocks, provided by *sl-timeInterval*

For paired spectrum, an S-SS/PSBCH block can be transmitted/received only in a slot of an UL carrier. For unpaired spectrum, an S-SS/PSBCH block can be transmitted/received only in a slot of which all OFDM symbols are semi-statically configured as UL as per the higher layer parameter *tdd-UL-DL-ConfigurationCommon* of the serving cell if providedor *sl-TDD-Configuration-r16* if provided or *sl-TDD-Config-r16* of the received PSBCH if provided. Or if *tdd-UL-DL-ConfigurationCommon* and *sl-TDD-Configuration* are not provided for a spectrum indicated with only PC5 interface in Table 5.2E.1-1 in [TS 38.101-1], an S-SS/PSBCH block can be transmitted/received in any slot of the spectrum.

**<Unchanged parts are omitted>**