**3GPP TSG-RAN WG2 Meeting #121 *R2-230XXXX***

**Athens, Greece,** **27th Feb – 3rd Mar 2023**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.300** | **CR** | **xxxx** | **rev** |  | **Current version:** | **16.11.0** |  |
|  | | | | | | | | |
| *For* [***HELP***](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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Corrections on PSBCH Symbols number for NR sidelink. | | | | | | | | | |
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| ***Source to WG:*** | CATT, Sharp | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_V2X\_NRSL-Core | | | | |  | ***Date:*** | | | 2023-3-02 |
|  |  | | | |  | |  | | |  |
| ***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 can be 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)*  *Rel-19 (Release 19)* | |
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| ***Reason for change:*** | | In the current specification, it is described that “Physical Sidelink Broadcast Channel (PSBCH) occupies 9 and 5 symbols for normal and extended CP cases respectively, including the associated DM-RS.”  However, according to the following description in TS38.211, the number of symbols for extended CP case is not 5 but 7.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 8.4.3.1 Time-frequency structure of an S-SS/PSBCH block  In the time domain, an S-SS/PSBCH block consists of OFDM symbols, numbered in increasing order from 0 to within the S-SS/PSBCH block, where S-PSS, S-SSS, and PSBCH with associated DM-RS are mapped to symbols as given by Table 8.4.3.1-1. The number of OFDM symbols in an S-SS/PSBCH block for normal cyclic prefix and for extended cyclic prefix. The first OFDM symbol in an S-SS/PSBCH block is the first OFDM symbol in the slot.  **Table 8.4.3.1-1: Resources within an S-SS/PSBCH block for S-PSS, S-SSS, PSBCH, and DM-RS.**   |  |  |  | | --- | --- | --- | | **Channel or signal** | **OFDM symbol number  relative to the start of an S-SS/PSBCH block** | **Subcarrier number  relative to the start of an S-SS/PSBCH block** | | S-PSS | 1, 2 | 2, 3, …, 127, 128 | | S-SSS | 3, 4 | 2, 3, …, 127, 128 | | Set to zero | 1, 2, 3, 4 | 0, 1, 129, 130, 131 | | PSBCH | 0, 5, 6, …, | 0, 1,…, 131 | | DM-RS for PSBCH | 0, 5, 6, …, | 0, 4, 8, …., 128 | | | | | | | | | | |
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| ***Summary of change:*** | | In section 5.7.3, change the description to “Physical Sidelink Broadcast Channel (PSBCH) occupies 9 and 7 symbols for normal and extended CP cases respectively, including the associated DM-RS.”  **Impact analysis**  Impacted 5G architecture options:  NG-RAN Architecture supporting the PC5 interface  Impacted functionality  NR Sidelink Communication  Inter-operability:  If the network is implemented according to this CR while the UE is not, there is no inter-operability issue.  If the UE is implemented according to this CR while the network is not, there is no inter-operability issue.  If one UE implements the changes according to the CR but not another UE, the UE will have a wrong detection to PSBCH and miss the correct signal. | | | | | | | | |
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| ***Consequences if not approved:*** | | The description in the current spec is imprecise and confusing. | | | | | | | | |
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| ***Clauses affected:*** | | 5.7.3 | | | | | | | | |
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|  | | **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:*** | |  | | | | | | | | |

START OF CHANGE

5.7.3 Physical sidelink channels and signals

Physical Sidelink Control Channel (PSCCH) indicates resource and other transmission parameters used by a UE for PSSCH. PSCCH transmission is associated with a DM-RS.

Physical Sidelink Shared Channel (PSSCH) transmits the TBs of data themselves, and control information for HARQ procedures and CSI feedback triggers, etc. At least 6 OFDM symbols within a slot are used for PSSCH transmission. PSSCH transmission is associated with a DM-RS and may be associated with a PT-RS.

Physical Sidelink Feedback Channel (PSFCH) carries HARQ feedback over the sidelink from a UE which is an intended recipient of a PSSCH transmission to the UE which performed the transmission. PSFCH sequence is transmitted in one PRB repeated over two OFDM symbols near the end of the sidelink resource in a slot.

The Sidelink synchronization signal consists of sidelink primary and sidelink secondary synchronization signals (S-PSS, S-SSS), each occupying 2 symbols and 127 subcarriers. Physical Sidelink Broadcast Channel (PSBCH) occupies 9 and 7 symbols for normal and extended CP cases respectively, including the associated DM-RS.

END OF CHANGE