**3GPP TSG- Meeting #**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

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

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|  | | | | | | | | | | |
| ***Title:*** | [NR\_cov\_enh2-Perf] BigCR for TS 38.104 on coverage enhancement demodulation | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | RAN4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Inclusion of Cov Enh Rel-18 Demodulation activites | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Inclusion of draftCRs (R4-2409896, R4-2409900)  From R4-2409896  Add multiple PRACH transimission minimum FR2-1 demodulation requirements.  From R4-2409900:  Defining Test preambles of multiple PRACH with repetition 2 for FR2-1. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Cov Enh Rel-18 will not be included in TS 38.104 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 11.4.2.2, A.6 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | |  | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 38.141-1, TS 38.141-2 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

***<Start of R4-2409896>***

################## Start of Change #1 ######################

##### 11.4.2.2.5 Minimum requirements for mulitple PRACH transmission

The probability of detection shall be equal to or exceed 99% for the SNR levels listed in Tables 11.4.2.2.5-1.

Table 11.4.2.2.5-1: Missed detection requirements for multiple PRACH transmission, 120 kHz SCS in FR2-1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Number of | Number of | Propagation | Frequency | Number of repetitions | SNR (dB) | | |
| TX antennas | demodulation branches | conditions and correlation matrix (Annex G) | offset | Burst format A2 | Burst format B4 | Burst format C2 |
| 1 | 2 | TDLA30-300 Low | 4000 Hz | 2 | TBD | [-12.0] | TBD |
| Note: This requirement has no limitation for PRACH configuration index selection for BS comformance testing. | | | | | | | |

################## End of Change #1 ######################

***<End of R4-2409896>***

***<Start of R4-2409900>***

# A.6 PRACH Test preambles

Table A.6-1: Test preambles for Normal Mode in FR1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Burst format | SCS (kHz) | Ncs | Logical sequence index | v |
| 0 | 1.25 | 13 | 22 | 32 |
| A1, A2, A3, | 15 | 23 | 0 | 0 |
| B4, C0, C2 | 30 | 46 | 0 | 0 |

Table A.6-2: Test preambles for Normal Mode in FR2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Burst format | SCS (kHz) | Ncs | Logical sequence index | v |
| A1, A2, A3, | 60 | 69 | 0 | 0 |
| B4, C0, C2 | 120 | 69 | 0 | 0 |

Table A.6-3: Test preambles for high speed train restricted set type A

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Burst format | SCS (kHz) | Ncs | Logical sequence index | v |
| 0 | 1.25 | 15 | 384 | 0 |

Table A.6-4: Test preambles for high speed train restricted set type B

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Burst format | SCS (kHz) | Ncs | Logical sequence index | v |
| 0 | 1.25 | 15 | 30 | 30 |

Table A.6-5: Test preambles for high speed train short formats in FR1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Burst format | SCS (kHz) | Ncs | Logical sequence index | v |
| A2, B4, C2 | 15 | 23 | 0 | 0 |
|  | 30 | 46 | 0 | 0 |

Table A.6-6: Test preambles for PRACH with LRA=1151 and LRA=571

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Burst format | SCS (kHz) | Ncs | Logical sequence index | v |
| A2, B4, C2 | 15 | 164 | 0 | 0 |
|  | 30 | 190 | 0 | 0 |

Table A.6-7: Test preambles for high speed train short formats in FR2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Burst format | SCS (kHz) | Ncs | Logical sequence index | v |
| C2 | 120 | 0 | 0 | 0 |

Table A.6-8: Test preambles for PRACH with LRA=139, LRA=571 and LRA=1151 for 120 kHZ and 480 kHz SCS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Burst format | SCS (kHz) | LRA | Ncs | Logical sequence index | v |
| A2  B4, C2 | 120 | 571 | 285 | 0 | 0 |
| 120 | 1151 | 575 | 0 | 0 |
| 480 | 139 | 69 | 0 | 0 |
| 480 | 571 | 285 | 0 | 0 |

Table A.6-9: Test preambles for normal mode PRACH with repetitions, LRA=139 in FR2-1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Burst format | SCS (kHz) | Ncs | No. Repetitions | Logical sequence index | v |
| A2, B4, C2 | 120 | 69 | 2 | 0 | 0 |

***<End of R4-2409900>***