**3GPP TSG-RAN WG4 Meeting #95-e R4-2008756**

**Electronic Meeting, 25 May – 5 June , 2020**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v11.4* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **36.141** | **CR** | **1256** | **rev** | **1** | **Current version:** | **15.8.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | CR: Updates to FeNB-IoT NPRACH TDD conformance testing in TS 36.141 (Rel-15) | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NB\_IOTenh2 | | | | |  | ***Date:*** | | | 2020-05-27 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-15 |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The FeNB-IOT NPRACH TDD performance requirements are wrong.   * The NPRACH missed detection requirements for TDD in Table 8.5.3.5-2 are wrong. | | | | | | | | |
|  | |  | | | | | | | | |
| Summary of change: | | According to the simulation results of each company,we update the probability of detection for FeNB-IOT NPRACH TDD shall be equal to or exceed 99% for the SNR levels listed in Table 8.5.3.5-2.   * Add the STD from ideal results to companies’ averaged values with impairments as the final FeNB-IoT NPRACH TDD format0 and format1 performance requirements. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | We can not verify the performance of FeNB-IOT NPRACH TDD correctly. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | Clause 8.5.3.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 36.104 | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |

*<Start of change>*

#### 8.5.3.5 Test Requirement

Pfa shall not exceed 0.1% and Pmd shall not exceed 1% for the SNRs in Table 8.5.3.5-1.

Table 8.5.3.5-1: NPRACH missed detection test requirements for FDD

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Number of TX antennas | Number of RX antennas | Repetition number | Propagation conditions and  correlation matrix (Annex B) | Frequency offset | SNR[dB] | | |
| Preamble format 0 | Preamble format 1 | Preamble format 2 |
| 1 | 2 | 8 | AWGN | 0 | -1.8 | -1.8 | -0.7 |
| EPA1 Low | 200 Hz | 6.7 | 6.7 | 9.6 |
| 32 | AWGN | 0 | -6.5 | -6.5 | -4.8 |
| EPA1 Low | 200 Hz | 1.1 | 1.1 | 2.8 |

Table 8.5.3.5-2: NPRACH missed detection requirements for TDD

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Number of TX antennas | Number of RX antennas | Repetition number | Propagation conditions and correlation matrix (Annex B) | Frequency offset | SNR[dB] | | | |
| Preamble format 0 | Preamble format 1 | Preamble format 0-a | Preamble format 1-a |
| 1 | 2 | 8 | AWGN | 0 | [5.9] | [2.8] | [4.3] | [1.3] |
| EPA1 Low | 200 Hz | [15.3] | [10.7] | [14.3] | [9.6] |
| 32 | AWGN | 0 | [1.2] | [-1.9] | [-0.4] | [-3.3] |
| EPA1 Low | 200 Hz | [10.4] | [4.9] | [10.6] | [3.1] |

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in Annex G.

*<End of change>*