**3GPP TSG-RAN WG4 Meeting #97-e *R4-2017555***

 **Electronic Meeting, 2 - 13 Nov, 2020**

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| --- |
| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **38.141-1** | **CR** | **0166** | **rev** | **1** | **Current version:** | **16.5.0** |  |
|  |
| *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 |  |

|  |
| --- |
|  |
| ***Title:***  | CR for 38.141-1: Introduction of conformance testing for NR HST PRACH under fading channel |
|  |  |
| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_HST\_Perf |  | ***Date:*** | 2020-11-11 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***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:*** | RAN4 agree to introduce PRACH requirements of fading channel and the aligned requirements need to be added into the specfication |
|  |  |
| ***Summary of change:*** | Introduce the PRACH requirements of fading channel |
|  |  |
| ***Consequences if not approved:*** | PRACH requirements of fading channel are missing |
|  |  |
| ***Clauses affected:*** | 8.4.1.6. |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **x** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **x** |  |  Test specifications | TS 38.141-2  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Revised from R4-2016596 |

**<Start of First change>**

#### 8.4.1.6 Test requirement for high speed train

Pfa shall not exceed 0.1%. Pd shall not be below 99% for the SNRs in tables 8.4.1.6-1 to 8.4.1.6-4.

Table 8.4.1.6-1: PRACH missed detection requirements for high speed train, burst format 0, restricted set type A, 1.25 kHz SCS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Number of TX  | Number of RX  | Propagation conditions  | Frequency offset | SNR (dB) |
| antennas | antennas | and correlation matrix (annex G) |  | Burst format 0 |
| 1 | 2 | AWGN | 625 Hz | -11.7 |
|  |  | AWGN | 1340 Hz | -13.5 |
|  |  | TDLC300-100 Low | 0 Hz | [-5.8] |
|  | 4 | AWGN | 625 Hz | -14.2 |
|  |  | AWGN | 1340 Hz | -15.9 |
|  |  | TDLC300-100 Low | 0 Hz | [-11.3] |
|  | 8 | AWGN | 625 Hz | -16.2 |
|  |  | AWGN | 1340 Hz | -18.1 |
|  |  | TDLC300-100 Low | 0 Hz | [-15.8] |

Table 8.4.1.6-2: PRACH missed detection requirements for high speed train, burst format 0, restricted set type B, 1.25 kHz SCS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Number of TX  | Number of RX  | Propagation conditions  | Frequency offset | SNR (dB) |
| antennas | antennas | and correlation matrix (annex G) |  | Burst format 0 |
| 1 | 2 | AWGN | 625 Hz | -11.3 |
|  |  | AWGN | 2334 Hz | -12.8 |
|  |  | TDLC300-100 Low | 0 Hz | [-5.5] |
|  | 4 | AWGN | 625 Hz | -13.7 |
|  |  | AWGN | 2334 Hz | -15.1 |
|  |  | TDLC300-100 Low | 0 Hz | [-11.2] |
|  | 8 | AWGN | 625 Hz | -16.0 |
|  |  | AWGN | 2334 Hz | -17.1 |
|  |  | TDLC300-100 Low  | 0 Hz | [-15.6] |

Table 8.4.1.6-3: PRACH missed detection requirements for high speed train, 15 kHz SCS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Number of  | Number of  | Propagation  | Frequency  | SNR (dB) |
| TX antennas | RX antennas | conditions and correlation matrix (Annex G) | offset | Burst format A2 | Burst format B4 | Burst format C2 |
| 1 | 2 | AWGN | 1740 Hz | -11.0 | -14.0 | -10.8 |
|  | 4 | AWGN | 1740 Hz | -13.2 | -16.4 | -13.1 |
|  | 8 | AWGN | 1740 Hz | -15.3 | -17.9 | -15.2 |

Table 8.4.1.6-4: PRACH missed detection requirements for high speed train, 30 kHz SCS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Number of  | Number of  | Propagation  | Frequency  | SNR (dB) |
| TX antennas | RX antennas | conditions and correlation matrix (Annex G) | offset | Burst format A2 | Burst format B4 | Burst format C2 |
| 1 | 2 | AWGN | 3334 Hz | -10.9 | -14.3 | -10.7 |
|  | 4 | AWGN | 3334 Hz | -13.1 | -16.4 | -13.1 |
|  | 8 | AWGN | 3334 Hz | -15.1 | -18.1 | -15.1 |

**<end of First change>**