**3GPP TSG-RAN WG4 Meeting #94-e revision of R4-2001677**

**Electronic meeting, 24th Feb – 6th Mar 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.141-1** | **CR** | **0102** | **rev** | **1** | **Current version:** | **15.4.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | CR to 38.141-1 updates for OSTP calculations | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT-Perf | | | | |  | ***Date:*** | | | 2020-02-14 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | This CR introduce further update to OFDM Symbol TX power (OSTP) calculations that are used in some conformance tests. During RAN4#83 meeting CR [1] was agreed where number of symbols that are used for OFDM symbol TX power calculations was change from just 4th symbol in slot to all OFDM symbols that carry PDSCH and not containing PDCCH, RS or SSB within a slot. However, it was noticed that in current formulas in procedure for RETP calculation summation is done. Thus, instead of averaging, results accumulate power.  To solve this issue, simple proposal to reuse *Nsym* as all OFDM symbols that carry PDSCH and not contain PDCCH, RS or SSB in formula for OSTP is propsed.  [1] R4-1916043 CR to 38.141-1: Annex H.5 Resource element TX power, Nokia, Nokia Shanghai Bell | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | For OSTP formula *Nsym* as all OFDM symbols that carry PDSCH and not contain PDCCH, RS or SSB is included to formula:  */ Nsym* | | | | | | | | |
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| ***Consequences if not approved:*** | | With current exiting formulas OSTP values would be overestimated due to not necessary summation of symbols power. | | | | | | | | |
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| ***Clauses affected:*** | | Annex H.5 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **N** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **Y** |  | Test specifications | | | | TS 38.141-2 | | |
| ***(show related CRs)*** | |  | **N** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | Editorial correction to include “Nsym” within equation object. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

<Start of change>

# H.5 Resource element TX power

Perform FFT on with the FFT window timing . The result is called . The RE TX power (RETP) is then defined as:

Where SCS is the subcarrier spacing in Hz.

From RETP the OFDM Symbol TX power (OSTP) is derived as follows:

Where the summation accumulates RETP values of all *Nsym*OFDM symbols that carry PDSCH and not containing PDCCH, RS or SSB within a slot.

From the acquired samples, values for each OSTP can be obtained and averaged where is the number of slots in a 10 ms measurement interval for FDD. For TDD, is the number of slots with downlink symbols in a 10 ms measurement interval and is computed according to the values in table 4.9.2.2-1.

For the example used in the annex, and .

<end of changes >