**3GPP TSG-RAN WG1 Meeting #114 *R1-23xxxxx***

**Toulouse, France, August 21 – 25, 2023**

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| *CR-Form-v12.2* |
|  **Draft CHANGE REQUEST** |
|  |
|  | **38.214** | **CR** | **-** | **rev** | **-** | **Current version:** | **17.6.0** |  |
|  |
| *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 | **X** | Radio Access Network | **X** | Core Network |  |

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|  |
| ***Title:***  | Introduction of further NR coverage enhancements |
|  |  |
| ***Source to WG:*** | Nokia |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** | NR\_cov\_enh2 |  | ***Date:*** | 2023-09-08 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-18 |
|  | *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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
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| ***Reason for change:*** | Introduction of further NR coverage enhancements |
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| ***Summary of change:*** | Introduce Rel-18 feature of dynamic enabling/disabling transform precoding for PUSCH |
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| ***Consequences if not approved:*** | Specification does not support further coverage enhancements. |
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| ***Clauses affected:*** | 6.1.3 |
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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:*** |  |

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### 6.1.3 UE procedure for applying transform precoding on PUSCH

For a PUSCH scheduled by RAR UL grant, or for a PUSCH scheduled by fallbackRAR UL grant, or for a PUSCH scheduled by DCI format 0\_0 with CRC scrambled by TC-RNTI, the UE shall consider the transform precoding either 'enabled' or 'disabled' according to the higher layer configured parameter *msg3-transformPrecoder.*

For a MsgA PUSCH, the UE shall consider the transform precoding either 'enabled' or 'disabled' according to the higher layer configured parameter *msgA-TransformPrecoder.* If higher layer parameter *msgA-TransformPrecoder* is not configured, the UE shall consider the transform precoding either 'enabled' or 'disabled' according to the higher layer configured parameter *msg3-transformPrecoder.*

For PUSCH transmission scheduled by a PDCCH with CRC scrambled by CS-RNTI with NDI=1, C-RNTI, or MCS-C-RNTI or SP-CSI-RNTI:

- If the DCI with the scheduling grant was received with DCI format 0\_0, the UE shall, for this PUSCH transmission, consider the transform precoding either enabled or disabled according to the higher layer configured parameter *msg3-transformPrecoder*.

- If the DCI with the scheduling grant was not received with DCI format 0\_0

- If the DCI with the scheduling grant was received with DCI format 0\_1 or 0\_2 with CRC scrambled by C-RNTI, MCS-RNTI, or CS-RNTI with NDI=1 and if the UE is configured with a higher layer parameter [*dynamicTransformPrecoderIndicationDCI-0-1]* in *pusch-Config* for DCI format 0\_1 or [*dynamicTransformPrecoderIndicationDCI-0-2]* in *pusch-Config* for DCI format 0\_2 and the higher layer parameter is set to ‘enabled’, the UE shall, for this PUSCH transmission, consider the transform precoding either enabled or disabled according to the Transform precoder indicator field in the DCI with the scheduling grant.

- For *pusch-TimeDomainAllocationListForMultiPUSCH* in *pusch-Config,* the UE shall, for all PUSCH transmissions, consider the transform precoding either enabled or disabled according to Transform precoder indicator field in the DCI format 0\_1 with the scheduling grant.

- Otherwise,

- If the UE is configured with the higher layer parameter *transformPrecoder* in *pusch-Config*, the UE shall, for this PUSCH transmission, consider the transform precoding either enabled or disabled according to this parameter.

- If the UE is not configured with the higher layer parameter *transformPrecoder* in *pusch-Config*, the UE shall, for this PUSCH transmission, consider the transform precoding either enabled or disabled according to the higher layer configured parameter *msg3-transformPrecoder*.

For PUSCH transmission with a configured grant

- If the UE is configured with the higher layer parameter *transformPrecoder* in *configuredGrantConfig*, the UE shall, for this PUSCH transmission, consider the transform precoding either enabled or disabled according to this parameter.

- If the UE is not configured with the higher layer parameter *transformPrecoder* in *configuredGrantConfig*, the UE shall, for this PUSCH transmission, consider the transform precoding either enabled or disabled according to the higher layer configured parameter *msg3-transformPrecoder*.

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