**3GPP TSG-RAN WG1 Meeting #108-e *R1-22xxxxx***

**e-Meeting, February 21 – March 3, 2022**

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| *CR-Form-v12.2* | | | | | | | | |
| **DRAFT CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.212** | **CR** |  | **rev** | **-** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *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:*** |  | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | R1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_UE\_pow\_sav\_enh-Core | | | | |  | ***Date:*** | | | 2022-03-08 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Capture endorsed TP and agreements from RAN1#107b-e and RAN1#108-e meetings. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. Reflect the agreement “UE does not expect the total size of paging indication filed and TRS availability indication field is larger than the DCI payload size” in DCI format 2\_7. 2. Capture the agreement from RAN1#108 on how to determine 1 bit or 2bits for PDCCH monitoring adaptation indication field in DCI format 0\_1, 0\_2, 1\_1 and 1\_2, if *PDCCHSkippingDurationList* is not configured and if *searchSpaceGroupIdList-r17* is configured. 3. Capture the endorsed TP on DCI format 2\_7 from RAN1#108-e. | | | | | | | | |
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| ***Consequences if not approved:*** | | The specification for UE power saving enhancements is incomplete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.3.1.1.2, 7.3.1.1.3, 7.3.1.2.2, 7.3.1.2.3, 7.3.1.3.8 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 38.211, TS 38.213, TS 38.214 | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

##### 7.3.1.1.2 Format 0\_1

DCI format 0\_1 is used for the scheduling of one or multiple PUSCH in one cell, or indicating CG downlink feedback information (CG-DFI) to a UE.

The following information is transmitted by means of the DCI format 0\_1 with CRC scrambled by C-RNTI or CS-RNTI or SP-CSI-RNTI or MCS-C-RNTI:

< Unchanged parts are omitted >

- PDCCH monitoring adaptation indication – 0, 1 or 2 bits

- 1 or 2 bits, if *searchSpaceGroupIdList-r17* is not configured and if *PDCCHSkippingDurationList* is configured

- 1 bit if the UE is configured with only one duration by *PDCCHSkippingDurationList;*

- 2 bits if the UE is configured with more than one duration by *PDCCHSkippingDurationList*.

- 1 or 2 bits, if *PDCCHSkippingDurationList* is not configured and if *searchSpaceGroupIdList-r17* is configured

-     1 bit if the UE is configured by *searchSpaceGroupIdList-r17* with search space set(s) with group index 0 and search space set(s) with group index 1, and if the UE is not configured by *searchSpaceGroupIdList-r17* with any search space set with group index 2;

-     2 bits if the UE is configured by *searchSpaceGroupIdList-r17* with search space set(s) with group index 0, search space set(s) with group index 1 and search space set(s) with group index 2;

- 2 bits, if *PDCCHSkippingDurationList* is configured and if *searchSpaceGroupIdList-r17* is configured

- 0 bit, otherwise

< Unchanged parts are omitted >

##### 7.3.1.1.3 Format 0\_2

DCI format 0\_2 is used for the scheduling of PUSCH in one cell.

The following information is transmitted by means of the DCI format 0\_2 with CRC scrambled by C-RNTI or CS-RNTI or SP-CSI-RNTI or MCS-C-RNTI:

< Unchanged parts are omitted >

- PDCCH monitoring adaptation indication – 0, 1 or 2 bits

- 1 or 2 bits, if *searchSpaceGroupIdList-r17* is not configured and if *PDCCHSkippingDurationList* is configured

- 1 bit if the UE is configured with only one duration by *PDCCHSkippingDurationList;*

- 2 bits if the UE is configured with more than one duration by *PDCCHSkippingDurationList*.

- 1 or 2 bits, if *PDCCHSkippingDurationList* is not configured and if *searchSpaceGroupIdList-r17* is configured

-     1 bit if the UE is configured by *searchSpaceGroupIdList-r17* with search space set(s) with group index 0 and search space set(s) with group index 1, and if the UE is not configured by *searchSpaceGroupIdList-r17* with any search space set with group index 2;

-     2 bits if the UE is configured by *searchSpaceGroupIdList-r17* with search space set(s) with group index 0, search space set(s) with group index 1 and search space set(s) with group index 2;

- 2 bits, if *PDCCHSkippingDurationList* is configured and if *searchSpaceGroupIdList-r17* is configured

- 0 bit, otherwise

< Unchanged parts are omitted >

##### 7.3.1.2.2 Format 1\_1

DCI format 1\_1 is used for the scheduling of one or multiple PDSCH in one cell.

The following information is transmitted by means of the DCI format 1\_1 with CRC scrambled by C-RNTI or CS-RNTI or MCS-C-RNTI:

< Unchanged parts are omitted >

- PDCCH monitoring adaptation indication – 0, 1 or 2 bits

- 1 or 2 bits, if *searchSpaceGroupIdList-r17* is not configured and if *PDCCHSkippingDurationList* is configured

- 1 bit if the UE is configured with only one duration by *PDCCHSkippingDurationList;*

- 2 bits if the UE is configured with more than one duration by *PDCCHSkippingDurationList*.

- 1 or 2 bits, if *PDCCHSkippingDurationList* is not configured and if *searchSpaceGroupIdList-r17* is configured

-     1 bit if the UE is configured by *searchSpaceGroupIdList-r17* with search space set(s) with group index 0 and search space set(s) with group index 1, and if the UE is not configured by *searchSpaceGroupIdList-r17* with any search space set with group index 2;

-     2 bits if the UE is configured by *searchSpaceGroupIdList-r17* with search space set(s) with group index 0, search space set(s) with group index 1 and search space set(s) with group index 2;

- 2 bits, if *PDCCHSkippingDurationList* is configured and if *searchSpaceGroupIdList-r17* is configured

- 0 bit, otherwise

< Unchanged parts are omitted >

##### 7.3.1.2.3 Format 1\_2

DCI format 1\_2 is used for the scheduling of PDSCH in one cell.

The following information is transmitted by means of the DCI format 1\_2 with CRC scrambled by C-RNTI or CS-RNTI or MCS-C-RNTI:

< Unchanged parts are omitted >

- PDCCH monitoring adaptation indication – 0, 1 or 2 bits

- 1 or 2 bits, if *searchSpaceGroupIdList-r17* is not configured and if *PDCCHSkippingDurationList* is configured

- 1 bit if the UE is configured with only one duration by *PDCCHSkippingDurationList;*

- 2 bits if the UE is configured with more than one duration by *PDCCHSkippingDurationList*.

- 1 or 2 bits, if *PDCCHSkippingDurationList* is not configured and if *searchSpaceGroupIdList-r17* is configured

-     1 bit if the UE is configured by *searchSpaceGroupIdList-r17* with search space set(s) with group index 0 and search space set(s) with group index 1, and if the UE is not configured by *searchSpaceGroupIdList-r17* with any search space set with group index 2;

-     2 bits if the UE is configured by *searchSpaceGroupIdList-r17* with search space set(s) with group index 0, search space set(s) with group index 1 and search space set(s) with group index 2;

- 2 bits, if *PDCCHSkippingDurationList* is configured and if *searchSpaceGroupIdList-r17* is configured

- 0 bit, otherwise

< Unchanged parts are omitted >

##### 7.3.1.3.8 Format 2\_7

DCI format 2\_7 is used for notifying the paging early indication and TRS availability indication for one or more UEs.

The following information is transmitted by means of the DCI format 2\_7 with CRC scrambled by PEI-RNTI:

- Paging indication field – bit(s), where

- is the number of paging occasions configured by higher layer parameter *PONumPerPEI* as defined in Clause 10.4A in [5, TS 38.213];

- is the number of sub-groups of a paging occasion configured by higher layer parameter *subgroupsNumPerPO*, if *subgroupsNumPerPO* is configured; otherwise is set to 1.

- Each bit in the field indicates one UE subgroup of a paging occasion if *subgroupsNumPerPO* is configured; otherwise each bit in the field indicates the UE group of a paging occasion.

- TRS availability indication – 1, 2, 3, 4, 5, or 6 bitsif *TRS-ResourceSetConfig* is configured; 0 bits otherwise.

The size of DCI format 2\_7 is indicated by the higher layer parameter *payloadSizeDCI\_format2\_7*, according to Clause 10.4A of [5, TS 38.213]. The number of information bits in format 2\_7 shall be equal to or less than the payload size of format 2\_7. If the number of information bits in format 2\_7 is less than the size of format 2\_7, the remaining bits are reserved.