**3GPP TSG-RAN WG2 Meeting #111 electronic R2-2008493**

**Online, August 17th - 28th, 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **38.305** | **CR** | **0029** | **rev** | **1** | **Current version:** | **16.1.0** |  |
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| *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 | **X** |

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| ***Title:***  | Correction on Stage-2 for gNB and LMF information transfer |
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| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | NR\_pos-Core |  | ***Date:*** | 2020-7-16 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)* |
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| ***Reason for change:*** | 1. In RAN3#108, RAN3 agreed to introduce the number of SRS resources/resource sets in POSITIONING INFORMATION REQUEST message, so as to provide assistance from LMF in order to facilitate gNB to configure SRS resource. It is better that stage-2 captures such information.2. The description of the Geographical coordinate of the TRPs served by the gNB is per DL-PRS Resource ID.3. TRP measurement request information includes information that is not aligned with NRPPa and has been updated: |
|  |  |
| ***Summary of change:*** | 1. Assistance data that may be transferred from gNB to the LMF:
* Change description of Geographical coordinates of TRP
1. Requested UL-SRS transmission characteristics
* Add the number of requested SRS resources and SRS resource sets in the message from LMF to gNB.
1. TRP Measurement request information
* Delete the PCI, CGI of the TRP;
* Update the description of UL timing information of reference TRP
* Delete the start time, and duration of the measurements.
* Add the Measurement quantities.

**Impact analysis****Impacted functionality**Information that may be transfered between gNB and LMF**Inter-operability:** 1. If the network is implemented according to the CR and the UE is not, there is no inter-operability issue.
2. If the UE is implemented according to the CR and the network is not, there is no inter-operability issue.
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| ***Consequences if not approved:*** | If changes are not approved, the stage-2 description is not aligned with NRPPa stage 3 specification and may cause misunderstanding. |
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| ***Clauses affected:*** | 8.10.2.3, 8.10.2.4, 8.11.2.3, 8.12.2.3, 8.13.2.3, 8.14.2.3, 8.13.2.0, 8.14.2.0 |
|  |  |
|  | **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:*** |  |

CHANGE Begin

#### 8.10.2.3 Information that may be transferred from the gNB to LMF

The assistance data that may be transferred from gNB to the LMF is listed in Table 8.10.2.3-1.

Table 8.10.2.3-1: Assistance data that may be transferred from gNB to the LMF

|  |
| --- |
| Information  |
| PCI, GCI, and TRP IDs of the TRPs served by the gNB |
| Timing information of TRPs served by the gNB |
| DL-PRS configuration of the TRPs served by the gNB |
| SSB information of the TRPs (the time/frequency occupancy of SSBs) |
| Spatial direction information of the DL-PRS Resources of the TRPs served by the gNB |
| Geographical coordinates information of the DL-PRS Resources of the TRPs served by the gNB |

====================== Unchanged parts omitted =====================

#### 8.10.2.4 Information that may be transferred from the LMF to gNBs

The requested UL-SRS transmission characteristics information that may be signalled from the LMF to the gNB is listed in Table 8.10.2.4-1.

Table 8.10.2.4-1: Requested UL-SRS transmission characteristics information that may be transferred from LMF to gNB.

|  |
| --- |
| Information  |
| Number Of Transmissions/duration for which the UL-SRS is requested |
| Bandwidth |
| Resource type (periodic, semi-persistent) |
| Number of requested SRS resource sets and SRS resources per set |
| Pathloss reference:  - PCI, SSB Index - DL-PRS ID, DL-PRS Resource Set ID, DL-PRS Resource ID |
| Spatial relation info - PCI, SSB Index - DL-PRS ID, DL-PRS Resource Set ID, DL-PRS Resource ID |

The TRP measurement request information that may be signalled from the LMF to the gNBs is listed in Table 8.10.2.4-2.

Table 8.10.2.4-2: TRP Measurement request information that may be transferred from LMF to gNBs.

|  |
| --- |
| Information  |
| TRP ID of the TRP to receive UL-SRS |
| UE-SRS configuration |
| UL timing information of the reference TRP (the serving TRP, on which the UE-SRS is configured), for reception of SRS by candidate TRPs |
| Report characteristics for the measurements |
| Measurement Quantities |

NEXT CHANGE

#### 8.11.2.3 Information that may be transferred from the gNB to LMF

The assistance data that may be transferred from gNB to the LMF is listed in table 8.11.2.3-1.

Table 8.11.2.3-1: Assistance data that may be transferred from gNB to the LMF

|  |
| --- |
| Information  |
| PCI, GCI, and TRP IDs of the TRPs served by the gNB |
| Timing information of TRPs served by the gNB |
| DL-PRS configuration of the TRPs served by the gNB |
| SSB information of the TRPs (the time/frequency occupancy of SSBs) |
| Spatial direction information of the DL-PRS Resources of the TRPs served by the gNB |
| Geographical coordinates information of the TRPs served by the gNB |

NEXT CHANGE

#### 8.12.2.3 Information that may be transferred from the gNB to LMF

The assistance data that may be transferred from gNB to the LMF is listed in Table 8.12.2.3-1.

Table 8.12.2.3-1: Assistance data that may be transferred from gNB to the LMF

|  |
| --- |
|  Information  |
| PCI, GCI, and TRP IDs of the TRPs served by the gNB |
| Timing information of TRPs served by the gNB |
| DL-PRS configuration of the TRPs served by the gNB |
| SSB information of the TRPs (the time/frequency occupancy of SSBs) |
| Spatial direction information of the DL-PRS Resources of the TRPs served by the gNB |
| Geographical coordinates information of the TRPs served by the gNB |

NEXT CHANGE

#### 8.13.2.3 Information that may be transferred from the LMF to gNBs

The requested UL-SRS transmission characteristics information that may be signalled from the LMF to the gNB is listed in Table 8.13.2.3-1.

Table 8.13.2.3-1: Requested UL-SRS transmission characteristics information that may be transferred from LMF to gNB.

|  |
| --- |
| Information  |
| Number Of Transmissions/duration for which the UL-SRS is requested |
| Bandwidth |
| Resource type (periodic, semi-persistent) |
| Pathloss reference:  - PCI, SSB Index, SSB configuration (time/frequency occupancy of SSBs) - DL-PRS ID, DL-PRS Resource Set ID, DL-PRS Resource ID |
| Spatial relation info - PCI, SSB Index, SSB configuration (time/frequency occupancy of SSBs) - DL-PRS ID, DL-PRS Resource Set ID, DL-PRS Resource ID |

The TRP measurement request information that may be signalled from the LMF to the gNB is listed in table 8.13.2.3-2.

Table 8.13.2.3-2: TRP Measurement request information that may be transferred from LMF to gNB.

|  |
| --- |
| Information  |
| TRP ID of the TRP to receive UL-SRS |
| UE-SRS configuration |
| UL timing information together with timing uncertainty, for reception of SRS by candidate TRPs |
| Report characteristics for the measurements |
| Measurement Quantities |

NEXT CHANGE

#### 8.14.2.3 Information that may be transferred from the LMF to gNB

The requested UL-SRS transmission characteristics information that may be signalled from the LMF to the gNB is listed in Table 8.14.2.3-1.

Table 8.14.2.3-1: Requested UL-SRS transmission characteristics information that may be transferred from LMF to gNB.

|  |
| --- |
| Information  |
| Number Of Transmissions/duration for which the UL-SRS is requested |
| Bandwidth |
| Resource type (periodic, semi-persistent) |
| Number of requested SRS resource sets and SRS resources per set |
| Pathloss reference:  - PCI, SSB Index, SSB configuration (time/frequency occupancy of SSBs) - DL-PRS ID, DL-PRS Resource Set ID, DL-PRS Resource ID |
| Spatial relation info - PCI, SSB Index, SSB configuration (time/frequency occupancy of SSBs) - DL-PRS ID, DL-PRS Resource Set ID, DL-PRS Resource ID |

The TRP measurement request information that may be signalled from the LMF to the gNB is listed in table 8.14.2.3-2.

Table 8.14.2.3-2: TRP Measurement request information that may be transferred from LMF to gNB.

|  |
| --- |
| Information  |
| TRP ID of the TRP to receive UL-SRS |
| UE-SRS configuration |
| UL timing information together with timing uncertainty, for reception of SRS by candidate TRPs |
| Report characteristics for the measurements |
| Measurement Quantities |

NEXT CHANGE

#### 8.13.2.0 Assistance Data that may be transferred from the gNB to the LMF

The assistance data that may be transferred from the gNB to the LMF is listed in Table 8.13.2.0-1.

Table 8.13.2.0-1: Assistance data that may be transferred from gNB to the LMF

|  |
| --- |
| Information |
| PCI, GCI, and TRP IDs of the TRPs served by the gNB |
| SSB information of the TRPs (the time/frequency occupancy of SSBs) |
| Geographical coordinates information of the DL-PRS Resources of the TRPs served by the gNB |

NEXT CHANGE

#### 8.14.2.0 Assistance Data that may be transferred from the gNB to the LMF

The assistance data that may be transferred from the gNB to the LMF is listed in Table 8.14.2.0-1.

Table 8.14.2.0-1: Assistance data that may be transferred from gNB to the LMF

|  |
| --- |
| Information |
| PCI, GCI, and TRP IDs of the TRPs served by the gNB |
| SSB information of the TRPs (the time/frequency occupancy of SSBs) |
| Geographical coordinates information of the DL-PRS Resources of the TRPs served by the gNB |

CHANGE END