**3GPP TSG-RAN WG2 Meeting #118-e *R2-22nnnnn***

**E-meeting, 09 May – 20 May 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **38.300** | **CR** | 0474 | **rev** | 1 | **Current version:** | **17.0.0** |  |
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| *For* [***HELP***](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 gNB ID length reporting in the NR CGI report [gNB\_ID\_Length] |
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| ***Source to WG:*** | Ericsson, Verizon, China Telecom, Bell Mobility, Samsung, Rogers, TELUS, Telecom Italia, T-Mobile USA, US Cellular, Deutsche Telekom, Nokia |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | TEI17 |  | ***Date:*** | 2022-05-17 |
|  |  |  |  |  |
| ***Category:*** | B |  | ***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 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)* |
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| ***Reason for change:*** | In case of NR cells, a gNB ID represents the (22..32) MSBs of the (36bits long) NR Cell IDs. In the current specifications there is no indication of the size of the gNB ID length in NR CGI or NR Cell Identity (NCI). At the same time NR CGI is assumed to be unique. If an operator wants to make use of different gNB ID lengths in its network it is not obvious how the operator can ensure that all resulting NR CGIs are unique. This has a major effect on the capability of an operator to exploit flexible NG-RAN Node ID lengths for a network with different levels of node densification and for future deployment densification.Thus, the feature of broadcasting gNB ID lengths by the NR cells is introduced. To ensure that this gNB ID length is reported as part of the CGI reporting procedure, one needs to include this newly added field in the NR CGI measurement report sent by the UE. |
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| ***Summary of change:*** | Addition of NR gNB ID length in the NR CGI measurement report. |
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| ***Consequences if not approved:*** | The network node that fetches the CGI report from the UE does not know how many bits out of the 36 bits of NR cell ID represents the length of the gNB ID. Hence for an NG based HO source RAN node may not be able to find the target RAN node and this leads to a RLF. |
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| ***Clauses affected:*** | 15.3.3.2 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 38.331 CR 3181TS 36.331 CR 4821TS 38.306 CR 0747TS 36.306 CR 1850TS 36.300 CR 1225TS 38.413 CR 0571 |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
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| ***This CR's revision history:*** | Revision 0 implementation of the agreement from RAN2 118 meeting before come back session |

/\*Start of first changes\*/

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#### 15.3.3.2 Intra-system Automatic Neighbour Cell Relation Function

ANR relies on NCGI (see clause 8.2) and ANR reporting of E-UTRA cells as specified in TS 36.300 [2].

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**Figure 15.3.3.2-1: Automatic Neighbour Relation Function**

Figure 15.3.3.2-1 depicts an example where the NG-RAN node serving cell A has an ANR function. In RRC\_CONNECTED, the NG-RAN node instructs each UE to perform measurements on neighbour cells. The NG-RAN node may use different policies for instructing the UE to do measurements, and when to report them to the NG-RAN node. This measurement procedure is as specified in TS 38.331[12] and TS 36.331 [29].

1. The UE sends a measurement report regarding cell B. This report contains Cell B's PCI, but not its NCGI/ECGI.

When the NG-RAN node receives a UE measurement report containing the PCI, the following sequence may be used.

2. The NG-RAN node instructs the UE, using the newly discovered PCI as parameter, to read all the broadcast NCGI(s) /ECGI(s), TAC(s), RANAC(s), PLMN ID(s)and, for neighbour NR cells, NR frequency band(s) and the gNB ID length(s). To do so, the NG-RAN node may need to schedule appropriate idle periods to allow the UE to read the NCGI/ECGI from the broadcast channel of the detected neighbour cell. How the UE reads the NCGI/ECGI is specified in TS 38.331 [12] and TS 36.331 [29].

3. When the UE has found out the new cell's NCGI(s) /ECGI(s), the UE reports all the broadcast NCGI(s)/ECGI(s) to the serving cell NG-RAN node. In addition, the UE reports all the tracking area code(s), RANAC(s), PLMN IDs and, for neighbour NR cells, NR frequency band(s), and the gNB ID length(s) that have been read by the UE. In case the detected NR cell does not broadcast SIB1, the UE may report *noSIB1* indication as specified in TS 38.331 [12].

4. The NG-RAN node decides to add this neighbour relation, and can use PCI and NCGI(s)/ECGI(s) to:

a. Lookup a transport layer address to the new NG-RAN node;

b. Update the Neighbour Cell Relation List;

c. If needed, setup a new Xn interface towards this NG-RAN node.

/\*Emd of first changes\*/