**3GPP TSG-RAN4 Meeting #97-e *R4-2017192***

**Electronic Meeting, 2 – 13 November, 2020**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **36.133** | **CR** | 6978 | **rev** | **1** | **Current version:** | **16.7.0** |  |
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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 | **X** | Radio Access Network |  | Core Network |  |

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| ***Title:***  | CR on CGI reading requirements 36.133 |
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| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | NR\_RRM\_Enh-Core |  | ***Date:*** | 2020-09-21 |
|  |  |  |  |  |
| ***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. SIB1 transmission is dynamically scheduled by PDCCH, so the actualy SIB1 transmission periodicty could be different from the default periodicity or SMTC periodicty.
2. The last sentence in 8.1.2.4.27.1 states that overall CGI delay includes the RRC procedure delay and the reporting delay in 8.1.2.4.27.3, while the reporting delay in 8.1.2.4.27.1 already includes RRC procedure delay, so the RRC procedure delay is counted twice.
3. The requirements in 8.1.2.4 are only applicable for UE in LTE SA but not EN-DC or NE-DC.
4. MIB decoding delay for FR2 should be 25 SMTC periods (24 plus 1 for AGC).
5. The side condition of -3dB for MIB and SIB1 decoding is not captured.
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| ***Summary of change:*** | 1. Clarify that SIB1 decoding delay is based on the periodicity with which SIB1 is actually transmited but not the SMTC periodicity.
2. Clarify that the overall CGI delay is defined in 8.1.2.4.27.3.
3. Correct the requirement applicability for LTE SA and EN-DC.
4. Correct the MIB decoding delay.
5. Add the side condition of -3dB.
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| ***Consequences if not approved:*** | CGI reading requirements are incomplete. |
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| ***Clauses affected:*** | 8.1.2.4.27~28 |
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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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

<Start of Change 1>

##### 8.1.2.4.27 E-UTRA FDD - NR measurements with autonomous gaps

8.1.2.4.27.1 Introduction

The requirements in this clause are specified for CGI identification of an NR target cell and are applicable for a UE:

- in RRC\_CONNECTED state, and

- configured with LTE-FDD standalone

The overall CGI reporting delay is defined in Clause 8.1.2.4.27.3.

8.1.2.4.27.2 CGI identification of an NR cell with autonomous gaps

The UE shall identify and report the CGI of a known NR target cell when requested by the network for the purpose of ‘reportCGI’. Only one cell is provided to the UE with *cellForWhichToReportCGI* for identifying the CGI. The UE may make autonomous gaps in both downlink reception and uplink transmission of both E-UTRA and NR serving cell(s) for receiving MIB and SIB1 message according to clause 5.5.3 of TS 38.331 [38]. Note that E-UTRAN does not configure si-RequestForHO if *reportConfig* is linked to a *measObject* set to *measObjectNR*. The UE shall be able to identify a new CGI of a known NR cell within:

 Tidentify\_CGI\_NR = ( TMIB\_NR + T SIB1\_NR) ms

Where:

 TMIB\_NR is the maximum time to acquire MIB message. TMIB\_NR = 6 \* TSMTC ms for NR cells on FR1 or 25 \* TSMTC ms, for NR cells on FR2.

 TSIB1\_NR is the maximuim time period to acquire SIB1 message. TSIB1\_NR = 6 \* TRMSI-scheduling ms, where TRMSI-scheduling is the periodicity with which the SIB1 is actually transmitted by the NR target cell.

The requirement for identifying the CGI of an NR cell within Tidentify\_CGI\_NR is applicable when no DRX is used as well as when any of the DRX or eDRX\_CONN cycles specified in [2] is used.

Within the time Tidentify\_CGI\_NR, over which the UE identifies the CGI of an NR cell, the UE shall fulfil interruption requirements specified in Clause 7.37.

In the requirement a cell is known if,

- During the last 5 seconds for FR1 or 3 seconds for FR2 before the reception of the report CGI command:

- The UE has sent a valid L3-RSRP measurement report with SSB index for the NR target cell and

- During MIB decoding at least reported SSBs remains detectable according to the SSB Es/Iot conditions specified in clause 9.2 or 9.3 of TS 38.133 [50], and

- During SIB1 decoding the SSB used for MIB decoding remains detectable according to the SSB Es/Iot conditions specified in clause 9.2 or 9.3 of TS 38.133 [50], and

- During MIB decoding, the SSB for MIB decoding remains detectable with SNR ≥ -3dB

- During SIB1 decoding, the PDSCH for SIB1 decoding remains detectable with SNR ≥ -3dB

8.1.2.4.27.3 CGI reporting delay

The CGI reporting delay is defined as the time between a command that will trigger a CGI report and the point when the UE starts to transmit the measurement report over the air interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty of 2 x TTIDCCH resulting when inserting the measurement report to the TTI of the uplink DCCH. This measurement reporting delay excludes any delay caused by lack of UL resources for UE to send the measurement report.

The CGI reporting delay shall be less than Tidentify\_CGI\_NR defined in clause 8.1.2.4.27.2 plus RRC procedure delay defined in clause 11 in TS 36.331 [2], and additional 20ms margin if NR target cell is on FR2.

##### 8.1.2.4.28 E-UTRA TDD - NR measurements with autonomous gaps

8.1.2.4.28.1 Introduction

The requirements in this clause are specified for CGI identification of an NR target cell and are applicable for a UE:

- in RRC\_CONNECTED state, and

- configured with LTE-TDD standalone

The overall CGI reporting delay is defined in Clause 8.1.2.4.28.3.

8.1.2.4.28.2 CGI identification of an NR cell with autonomous gaps

The requirements in clause 8.1.2.4.27.2 shall apply.

8.1.2.4.28.3 CGI reporting delay

The requirements in clause 8.1.2.4.27.3 shall apply.

<End of Change 1>