**3GPP TSG- WG3 Meeting #** ***R3-225104***

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.401** | **CR** | **0241** | **rev** | **1** | **Current version:** | **17.1.1** |  |
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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 |  |

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| ***Title:*** | Clarification to CG based SDT | | | | | | | | | |
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| ***Source to WG:*** | Google, Huawei | | | | | | | | | |
| ***Source to TSG:*** | RAN3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_SmallData\_INACTIVE-Core | | | | |  | ***Date:*** | | | 2022-08-09 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
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| ***Reason for change:*** | | * There was a mistake in RAN3#116e that the agreed CR R3-223845 contains a figure for 8.18.2-1 but it is not the one agreed in the latest version (V5). Therefore, the current Figure 8.18.2-1: CG based Small Data Transmission in RRC Inactive state is not aligned with the descriptions. | | | | | | | | |
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| ***Summary of change:*** | | * Fix Figure 8.18.2-1 to align the descriptions.   Impact Analysis:  Impact assessment towards the previous version of the specification (same release):  This CR has isolated impact with the previous version of the specification (same release).  The impact can be considered isolated because the change only clarifies the figure for the CG based SDT. | | | | | | | | |
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| ***Consequences if not approved:*** | | The specification is not correctly captured. | | | | | | | | |
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| ***Clauses affected:*** | | 8.18.2 | | | | | | | | |
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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:*** | | R0: R3-224337  R1: Fix coversheet problem and update reason for change | | | | | | | | |

8.18.2 CG based SDT

The procedure for CG based small data transmission in RRC Inactive is shown in Figure 8.18.2-1.



**Figure 8.18.2-1: CG based Small Data Transmission in RRC Inactive state.**

1. The gNB-CU decides to move UE into RRC\_INACTIVE state.

2. The gNB-CU-CP decides to configure CG-SDT, it sends UE CONTEXT MODIFICATION REQUEST message including a query indication for CG-SDT related resource configuration associated with the information of SDT Radio Bearer(s).

3. The gNB-DU sends the UE CONTEXT MODIFICATION RESPONSE message including the CG-SDT related resource configurations for the requested SDT Radio Bearer(s) within the *DU to CU RRC Information* IE.

4. The gNB-CU-CP sends the BEARER CONTEXT MODIFICATION REQUEST towards the gNB-CU-UP, with the suspend indication.

5. The gNB-CU-UP sends the BEARER CONTEXT MODIFICATION RESPONSE towards the gNB-CU-CP.

6. The gNB-CU-CP sends the UE CONTEXT RELEASE COMMAND message to the gNB-DU including an *RRCRelease* message to the UE with the CG-SDT information within suspend configuration. The gNB-CU notifies the gNB-DU to keep the SDT RLC config, F1-U tunnels, F1AP UE association, and store the CG resource for SDT when the UE is entering RRC\_INACTIVE state with an explicit CG-SDT kept indicator.

7. The gNB-DU sends the *RRCRelease* message to UE.

8. The gNB-DU sends UE CONTEXT RELEASE COMPLETE message. The gNB-DU keeps the SDT RLC config, F1-U tunnels, F1AP UE association, and stores the CG resource for SDT when the UE entering RRC\_INACTIVE. The gNB-DU also stores the C-RNTI, CS-RNTI, and which bearers are CG-SDT bearers.

After a period of time of the UE being in RRC\_INACTIVE state.

9. The UE decides to perform CG based SDT procedure, it sends the *RRCResumeRequest* message together with UL SDT data/UL NAS PDU.

10. The gNB-DU sends the UL RRC MESSAGE TRANSFER message including the *RRCResumeRequest* message to indicate the access due to CG-SDT.

11/12. The gNB-CU-CP initiates the BEARER CONTEXT MODIFICATION procedure to resume SDT DRBs.

13 – 13a. The gNB-DU sends the UL SDT data, if any, to the gNB-CU-UP, and/or sends the UL signalling, if any, to the gNB-CU-CP via the UL RRC MESSAGE TRANSFER message, in which any UL NAS PDU is delivered to AMF.

NOTE 1: When the SDT transmission is completed, the gNB-CU shall transmit the UE CONTEXT RELEASE COMMAND message to the gNB-DU. If CG-SDT is re-configured, the gNB-CU may request the gNB-DU to keep CG-SDT configuration and resources in the UE CONTEXT RELEASE COMMAND message.