**3GPP TSG-RAN WG3 Meeting #115-e *R3-222961***

**E-meeting, 21 Feb – 3 Mar 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **38.401** | **CR** | **0196** | **rev** | **1** | **Current version:** | **16.8.0** |  |
|  |
| *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 |  | Radio Access Network | **x** | Core Network |  |

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| ***Title:***  | CG-SDT BLCR to TS 38.401 |
|  |  |
| ***Source to WG:*** | Huawei, Nokia, Nokia Shanghai Bell, Intel Corporation |
| ***Source to TSG:*** | R3 |
|  |  |
| ***Work item code:*** | NR\_SmallData\_INACTIVE-Core |  | ***Date:*** | 2022-03-04 |
|  |  |  |  |  |
| ***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:*** | Support of CG based SDT. |
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| ***Summary of change:*** | * Introduce the procedure for CG based small data transmission in RRC Inactive.
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| ***Consequences if not approved:*** | CG-SDT cannot be supported. |
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| ***Clauses affected:*** | 8.x (new), 8.x.2 (new) |
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|  | **Y** | **N** |  |  |
| ***Other specs*** | **x** |  |  Other core specifications  | TS 38.470 CR 0081TS 38.473 CR 0833 |
| ***affected:*** |  | **x** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Initial version: capture agreed TP R3-221215. |

## 8.x Overall procedure for Small Data Transmission during RRC Inactive

### 8.x.2 CG based SDT

The procedure for CG based small data transmission in RRC Inactive is shown in Figure 8.x.2-1.



Figure 8.x.2-1: CG based Small Data Transmission in RRC Inactive state.

1. The gNB-CU decides to change 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 by 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 with an explicit CG-SDT kept indicator.

7. The gNB-DU sends *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 mode

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.

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