**3GPP TSG-RAN3 Meeting #107-e *R3-201364***

**E-Meeting, 24 February – 6 March, 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.470** | **CR** | **0059** | **rev** | **2** | **Current version:** | **16.0.0** |  |
|  | | | | | | | | |
| *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:*** | CR to TS 38.470 on support of NPN | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, China Telecom | | | | | | | | | |
| ***Source to TSG:*** | RAN3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NG\_RAN\_PRN | | | | |  | ***Date:*** | | | 2020-02-27 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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 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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | It was agreed to support non-public network (NPN) for RAN in [RP-191563], which includes both the Stand-alone Non-Public Network (SNPN) and Public network integrated NPN (PNI-NPN).  The agreements on NPN over F1 interface during RAN3#105 meeting were summarized in [R3-194686].  These should be captured in specifications for disaggregatred gNB | | | | | | | | |
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| ***Summary of change:*** | | * Add descriptions that the gNB-DU and gNB-CU are allowed to exchange their supported NID via F1 interface management * Whether NID could be provided from the gNB-CU to the gNB-DU in the UE Context Setup procedure is FFS. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | NPN is not supported in case of disaggregated gNB. | | | | | | | | |
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| ***Clauses affected:*** | | 5.2.1, 5.2.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

<<<<<<<<<<<<<<<<<<<< Changes Begin >>>>>>>>>>>>>>>>>>>>

## 5.1 General

The following clauses describe the functions supported over F1-C and F1-U.

## 5.2 F1-C functions

### 5.2.1 F1 interface management function

The error indication function is used by the gNB-DU or gNB-CU to indicate to the gNB-CU or gNB-DU that an error has occurred.

The reset function is used to initialize the peer entity after node setup and after a failure event occurred. This procedure can be used by both the gNB-DU and the gNB-CU.

The F1 setup function allows to exchange application level data needed for the gNB-DU and gNB-CU to interoperate correctly on the F1 interface, and exchange the intended TDD DL-UL configuration originating from the gNB-DU or destined to the gNB-DU. The F1 setup is initiated by the gNB-DU.

The gNB-CU Configuration Update and gNB-DU Configuration Update functions allow to update application level configuration data needed between gNB-CU and gNB-DU to interoperate correctly over the F1 interface, and may activate or deactivate cells. For cross-link interference mitigation, the gNB-CU may coordinate the exchange of intended TDD DL-UL configuration by merging, forwarding and selective forwarding of intended TDD DL-UL configuration(s) between its gNB-DUs, or between its gNB-DUs and other gNBs, gNB-CUs. With the gNB-CU Configuration Update function, energy saving with cell activation/deactivation can be supported as defined in TS 38.300 [8].

The F1 setup and gNB-DU Configuration Update functions allow to inform the S-NSSAI(s) and NID(s) supported by the gNB-DU.

The F1 setup and gNB-CU Configuration Update functions allow to inform the NID(s) supported by the gNB-CU.

The F1 resource coordination function is used to transfer information about frequency resource sharing between gNB-CU and gNB-DU. In case of split gNB architecture, the gNB-CU may consolidate the outgoing messages from multiple gNB-DUs and distribute the incoming messages to the involved gNB-DUs, to perform resource coordination.

The gNB-DU status indication function allows the gNB-DU to indicate overload status to gNB-CU.

Editor’s Note : Whether to include PNI-NPN info, i.e. CAG ID, needs to be further discussed.

<Unchanged Text Omitted>

### 5.2.3 F1 UE context management function

The F1 UE context management function supports the establishment and modification of the necessary overall UE context.

The establishment of the F1 UE context is initiated by the gNB-CU and accepted or rejected by the gNB-DU based on admission control criteria (e.g., resource not available).

The modification of the F1 UE context can be initiated by either gNB-CU or gNB-DU. The receiving node can accept or reject the modification. The F1 UE context management function also supports the release of the context previously established in the gNB-DU. The release of the context is triggered by the gNB-CU either directly or following a request received from the gNB-DU. The gNB-CU request the gNB-DU to release the UE Context when the UE enters RRC\_IDLE or RRC\_INACTIVE.

This function can be also used to manage DRBs and SRBs, i.e., establishing, modifying and releasing DRB and SRB resources. The establishment and modification of DRB resources are triggered by the gNB-CU and accepted/rejected by the gNB-DU based on resource reservation information and QoS information to be provided to the gNB-DU. For each DRB to be setup or modified, the S-NSSAI may be provided by gNB-CU to the gNB-DU in the UE Context Setup procedure and the UE Context Modification procedure. It is FFS the NID may be provided from the gNB-CU to the gNB-DU in the UE Context Setup procedure.

The mapping between QoS flows and radio bearers is performed by gNB-CU and the granularity of bearer related management over F1 is radio bearer level. For NG-RAN, the gNB-CU decides an aggregated DRB QoS profile for each radio bearer based on received QoS flow profile, and provides both aggregated DRB QoS profile and QoS flow profile to the gNB-DU, and the gNB-DU either accepts the request or rejects it with appropriate cause value. With this function, gNB-DU could also notify gNB-CU whether the QoS for already established DRBs is not fulfilled any longer or it is fulfilled again. To support packet duplication for intra-gNB-DU CA as described in TS 38.300 [8], one data radio bearer should be configured with two GTP-U tunnels between gNB-CU and a gNB-DU.

With this function, gNB-CU requests the gNB-DU to setup or change of the SpCell (as defined in TS 38.321 [10]) for the UE, and the gNB-DU either accepts or rejects the request with appropriate cause value.

With this function, the gNB-CU requests the setup of the SCell(s) at the gNB-DU side, and the gNB-DU accepts all, some or none of the SCell(s) and replies to the gNB-CU. The gNB-CU requests the removal of the SCell(s) for the UE.

With this function, the gNB-CU indicates the UL UE AMBR limit to the gNB-DU, and the gNB-DU enforces the indicated limit.

With this function, the gNB-DU indicates that a bearer, or a UE is inactive or active. The gNB-CU consolidates all the serving gNB-DUs for the UE and takes further action.

<<<<<<<<<<<<<<<<<<<< Changes End >>>>>>>>>>>>>>>>>>>>