**3GPP TSG-RAN WG2 Meeting*****R2-220xxxx***

**Electronic Meeting, 9th May – 20th May 2022**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.300** | **CR** | **2872** | **rev** | **-** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *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 | **x** | Radio Access Network | **x** | Core Network |  |

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| ***Title:*** | Indication on EPS fallback frequency | | | | | | | | | |
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| ***Source to WG:*** | vivo, China Telecom, CMCC, SoftBank, China Unicom, Vodafone | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17 | | | | |  | ***Date:*** | | | 2022-xx-xx |
|  |  | | | |  | |  | | |  |
| ***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 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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In order to support various deployment scenarios for obtaining IMS voice service, the UE and NG-RAN may support RAT fallback or EPS Fallback. And the EPS/RAT Fallback procedure may be triggered when the request for establishing the QoS flow for IMS voice reaches the supported NG-RAN. However, in the real network, the delay of IMS voice based on EPS Fallback is around 2s to 4s, which highly impacts the user experience.  To solve the above delay, it has been proposed that introducing indication for EPS fallback frequency which UE may do early measurement on. | | | | | | | | |
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| ***Summary of change:*** | | * In 6.3.2, introducing indications to indicate EPS/RAT Fallback carrier frequency.   **Impact analysis**  **Impacted 5G architecture options:**  NR SA, NR-DC, NE-DC  **Impacted functionality:**  Idle/inactive measurement  **Inter-operability analysis:**  1. If the network is implemented according to the CR and the UE is not, no inter-operability issues are expected.  2. If the UE is implemented according to the CR and the network is not, no inter-operability issues are expected. | | | | | | | | |
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| ***Consequences if not approved:*** | | The latency may be too long for IMS voice. | | | | | | | | |
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| ***Clauses affected:*** | | 5.2.2.4.12, 5.7.8, 6.3.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

Start of change

### 9.3.2 NR-E-UTRA mobility: From 5GC to EPC

#### 9.3.2.1 Cell Reselection

Cell reselection is characterised by the following:

- Cell reselection between NR RRC\_IDLE and E-UTRA RRC\_IDLE is supported;

- Cell reselection from NR RRC\_INACTIVE to E-UTRA RRC\_IDLE is supported.

#### 9.3.2.2 Handover and redirection

The source NG-RAN node decides between handover or redirection to EPS based on radio criteria and availability of the N26 interface.

NOTE: Information about the availability of the N26 interface may be configured by OAM at the NG-RAN.

Inter RAT handover is characterised by the following:

- The Source RAT configures Target RAT measurement and reporting.

- The source RAT decides on the preparation initiation and provides the necessary information to the target RAT in the format required by the target RAT.

- Radio resources are prepared in the target RAT before the handover.

- The RRC reconfiguration message from the target RAT is delivered to the source RAT via a transparent container, and is passed to the UE by the source RAT in the handover command.

- In-sequence and lossless handovers are not supported.

- Security procedures for handover to E-UTRA/EPC should follow E-UTRA handover procedures.

#### 9.3.2.3 Measurements

Inter RAT measurements in NR for this use case are limited to E-UTRA. For idle UE, UE can measure in advance for EPS Fallback due to the Voice call activities based on EPS frequency indication.

For a UE configured with E-UTRA Inter RAT measurements, a measurement gap configuration is always provided when:

- The UE only supports per-UE measurement gaps; or

- The UE supports per-FR measurement gaps and at least one of the NR serving cells is in FR1.

#### 9.3.2.4 Data Forwarding for the Control Plane

Control plane handling for inter-System data forwarding from 5GS to EPS follows the following key principles:

- Only forwarding of downlink data is supported.

- PDU session information at the serving NG-RAN node contains mapping information per QoS Flow to a corresponding E-RAB.

- At handover preparation, the source NG-RAN node shall decide which mapped E-RABs are proposed to be subject to data forwarding and provide this information in the source-to-target container to the target eNB. Based on availability of direct data forwarding path the source NG-RAN node may request to apply direct data forwarding by indicating direct data forwarding path availability to the 5GC.

- The target eNB assigns forwarding TEID/TNL address(es) for the E-RAB(s) for which it accepts data forwarding.

- In case of indirect data forwarding, a single data forwarding tunnel is established between the source NG-RAN node and UPF per PDU session for which at least data for a single QoS Flow is subject to data forwarding.

- In case of direct data forwarding, the source NG-RAN node receives a TEID/TNL address for each E-RAB accepted for data forwarding as assigned by the target eNB.

End of change