**3GPP TSG-RAN WG2 Meeting #117-e *R2-220xxxx***

**Electronic meeting, 21st Feb – 3rd Mar 2022**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  |
| *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:***  | UE capabilities for Rel-17 eIAB |
|  |  |
| ***Source to WG:*** | Intel Corporation |
| ***Source to TSG:*** | R2 |
|  |  |
| ***Work item code:*** | NR\_IAB\_enh-Core |  | ***Date:*** | 2021-01-11 |
|  |  |  |  |  |
| ***Category:*** |  |  | ***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)* *Rel-19 (Release 19)*  |
|  |  |
| ***Reason for change:*** | Introduction of Rel-17 eIAB related capabilities |
|  |  |
| ***Summary of change:*** | Following agreements are addressed in this CR:**From RAN2 #116bis agreement**: on UE capabilities for LCG Extension, BH RLF detection indication and recovery indicatoin, F1-C over NR RRC, BAP header rewriting based inter-donor CU routing:* [051] Confirm to define a new UE capability for LCG Extension in MAC-ParametersCommon as optional UE capability for IAB-MT.
* [051] Define a new UE capability (1 bit) for ‘BH RLF detection indication and BH RLF recovery indication’ as optional UE capability for IAB-MT.
* [051] Define a new UE capability ‘f1c-OverNR-RRC’ as optional UE capability for IAB-MT. The parent IE of this UE capability is NRDC-Parameters under UE-NR-Capability.
* [051] Define a new UE capability for BAP header rewriting based inter-donor CU routing as optional UE capability for IAB-MT.
* [051] The single UE capability is used for all UL local re-routing trigger conditions.
* [051] Define a new type of feature group for LCG extension.
* [051] Reuse ‘RLF handling’ FG for BH RLF detection and recovery indication in Rel-17 eIAB feature list section.
* [051] Define a new type of feature group for F1-C over NR RRC.

**From RAN2 #117 agreement:*** Proposal 1 [easy agreement]: Define a new UE capability for BAP header rewriting-based local re-routing (including inter-donor DU re-routing and inter-donor CU re-routing) as optional UE capability for IAB-MT.
* Proposal 2 [easy agreement]: If new UE capability for BAP header rewriting-based local re-routing is defined in Proposal 1, it is used for all local re-routing trigger conditions, e.g. flow control feedback (congestion), type-2/3 RLF indication, etc.
* Proposal 3 [easy agreement]: No need to differentiate “inter-donor CU routing” UE capability between “inter-donor CU partial migration” and “inter-donor CU routing for topology redundancy”.
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| ***Consequences if not approved:*** | Rel-17 eIAB feature is not completed |
|  |  |
| ***Clauses affected:*** |  |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **x** |  |  Other core specifications  | TS/TR 38.331 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:*** |  |

1. ***Modified section***

#### 4.2.15.2 General Parameters

| Definitions for parameters | Per | M | FDD-TDDDIFF | FR1-FR2DIFF |
| --- | --- | --- | --- | --- |
| ***bh-RLF-Indication-r16***Indicates whether the IAB-MT supports BH RLF indication handling as specified in TS 38.331 [9] and in TS 38.340 [23] | IAB-MT | No | No | No |
| ***bh-RLF-DetectionRecovery-Indicaiton-r17***Indicates whether the IAB-MT supports BH RLF detection indication and BH RLF recovery indication handling as specified in TS 38.331 [9] and in TS 38.340 [23] | IAB-MT | No | No | No |
| ***directSN-AdditionFirstRRC-IAB-r16***Indicates whether the IAB-MT supports direct SN addition in the first RRC connection reconfiguration after RRC connection establishment. | IAB-MT | No | No | No |

***2nd. Modified section***

#### 4.2.15.5 BAP Parameters

| Definitions for parameters | Per | M | FDD-TDDDIFF | FR1-FR2DIFF |
| --- | --- | --- | --- | --- |
| ***bapHeaderRewriting-InterDonorCURouting-r17***Indicates whether the IAB-MT supports BAP header rewriting based inter-donor CU routing, including inter-donor CU partial migration and inter-donor CU routing for topology redundancy, as specified in TS 38.340 [23]. | IAB-MT | No | No | No |
| ***bapHeaderRewriting-LocalRerouting-r17***Indicates whether the IAB-MT supports BAP header rewriting based inter-donor DU local re-routing and/or inter-donor CU re-routing, as specified in TS 38.340 [23].  | IAB-MT | No | No | No |
| ***flowControlBH-RLC-ChannelBased-r16***Indicates whether the IAB-MT supports flow control procedures and flow control feedback per backhaul RLC channel, as specified in TS 38.340 [23]. | IAB-MT | No | No | No |
| ***flowControlRouting-ID-Based-r16***Indicates whether the IAB-MT supports flow control procedures and flow control feedback per Routing ID, as specified in TS 38.340 [23]. | IAB-MT | No | No | No |

***3rd. Modified section***

#### 4.2.15.6 MAC Parameters

| Definitions for parameters | Per | M | FDD-TDDDIFF | FR1-FR2DIFF |
| --- | --- | --- | --- | --- |
| ***lcid-ExtensionIAB-r16***Indicates whether the IAB-MT supports extended Logical Channel ID space using two-octet eLCID, as specified in TS 38.321 [8]. | IAB-MT | No | No | No |
| ***lcg-ExtensionIAB-r17***Indicates whether the IAB-MT supports extended logical channel group as specified in TS 38.xyz. | IAB-MT | No | No | No |
| ***preEmptiveBSR-r16***Indicates whether the IAB-MT supports Pre-emptive BSR as specified in TS 38.321 [8]. | IAB-MT | No | No | No |

***4th. Modified section***

#### 4.2.15.X NR-DC Parameters

| Definitions for parameters | Per | M | FDD-TDDDIFF | FR1-FR2DIFF |
| --- | --- | --- | --- | --- |
| ***f1c-OverNR-RRC-r17***Indicates whether the IAB-MT supports F1-C signalling over *DLInformationTransfer* and *ULInformationTransfer* messages via MN when IAB-MT operates in NR-DC and MN is the non-F1-termination node or via SN when IAB-MT operates in NR-DC and SN is the non-F1-termination node, as specified in TS 37.401 [x] and TS 37.340 [7]. | IAB-MT | No | No | No |

***End of the modified section***

# Annex A: R2 feature list for this CR

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Features | Index | Feature group | Components | *Prerequisite feature groups* | *Field name in TS 38.331 [2]* | *Parent IE in TS 38.331 [2]* | Need of FDD/TDD differentiation | Need of FR1/FR2 differentiation | Note | Mandatory/Optional |
|  | xx-y1 | RLF handling | 1) Indicates whether the IAB-MT supports BH RLF detection indication handling as specified in TS 38.331 [9] and in TS 38.340 [23]2) Indicates whether the IAB-MT supports BH RLF receovery indicaiton handling as specified in TS 38.331 [9] and in TS 38.340 [23] |  | *bh-RLF-DetectionRecovery-Indication-r17* | *UE-NR-Capability-v17* | No | No |  | Optional with capability signalling for IAB-MT |
|  | xx-y2 | BAP Header Rewirting | 1) Indicates whether the IAB-MT supports BAP header rewriting based local rerouting, as specified in TS 38.340 [23].2) Indicates whether the IAB-MT supports BAP header rewriting based inter-donor CU routing, as specified in TS 38.340 [23]. |  | *1) bapHeaderRewriting-LocalRerouting-r17**2) bapHeaderRewriting-InterDonorCURouting-r17* | *BAP-Parameters-r17*  | No | No |  | Optional with capability signalling for IAB-MT |
|  | xx-y3 | LCG Extension | Indicates whether the IAB-MT supports extended logical channel group as specified in TS 38.xyz. |  | *lcg-ExtensionIAB-r17* | *MAC-ParametersCommon* | No | No |  | Optional with capability signalling for IAB-MT |
|  | xx-y4 | F1AP over NR RRC | Indicates whether the IAB-MT supports F1-C signalling over *DLInformationTransfer* and *ULInformationTransfer* messages via MN when IAB-MT operates in NR-DC and MN is the non-F1-termination node or via SN when IAB-MT operates in NR-DC and SN is the non-F1-termination node, as specified in TS 37.401 [x] and TS 37.340 [7]. |  | *f1c-OverNR-RRC-r17* | *NRDC-Parameters-v17* | No | No |  | Optional with capability signalling for IAB-MT |