**3GPP TSG-RAN WG2 Meeting #131 *R2-250xxxx***

**Bangalore, India, 25th – 29th Aug, 2025**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.306** | **CR** | **-** | **rev** | **-** | **Current version:** | **18.6.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network | **x** | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Introduction of AI air UE capability | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Xiaomi, OPPO | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_AIML\_air-Core | | | | |  | ***Date:*** | | | 2025-09-01 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Introduction of AI/ML for NR Air interface features in Rel-19. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Capture AI/ML for NR air interface UE capbility   * Applicability reporting * logged measurement of data collection for NW-side model | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | AI/ML for NR Air interface feature in Rel-19 will not be captured. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3, 4.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS38.300 CR 1006  TS38.321 CR 2104  TS38.331 CR 5437 | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

*START OF CHANGES*

# 3 Definitions, symbols and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

**eRedCap UE:** a UE with enhanced reduced capabilities as specified in clause 4.2.22.1.

**Fallback band combination:** A Uu band combination that would result from another Uu band combination (parent band combination) by releasing at least one SCell or uplink configuration of SCell, or SCG, or SUL. A PC5 band combination that would result from another PC5 band combination (parent band combination) by releasing at least one sidelink carrier. An intra-band non-contiguous band combination is not considered to be a fallback band combination of an intra-band contiguous band combination. A fallback band combination supports the same channel bandwidth(s) for each carrier as its parent band combination(s).

**Fallback per band feature set:** A feature set per band that has same or lower capabilities than the reported capabilities from the reported feature set per band for a given band.

**Fallback per CC feature set:** A feature set per CC that has same or lower capabilities than the capabilities of UE (e.g. supported MIMO layers, BW, modulation order) while keeping the numerology the same from the reported feature set per CC for a given carrier per band. The *supportedMinBandwidthDL*/*supportedMinBandwidthUL* defines the lower bound of the bandwidth supported by the UE.

**RedCap UE:** The UE with reduced capabilities as specified in clause 4.2.21.1.

**SON report(s):** A SON report corresponds to one report from UE such as Random Access report, Radio Link Failure report, Connection Establishment Failure report, Mobility History Information report, Successful Handover report, and Successful PSCell change report.

**Switching SCell (sSCell):** The SCell configured with cross-carrier scheduling to PCell/PSCell.

## 3.2 Symbols

For the purposes of the present document, the following symbols apply:

MaxDLDataRate: Maximum DL data rate

MaxDLDataRate\_MN: Maximum DL data rate in the MN

MaxDLDataRate\_SN: Maximum DL data rate in the SN

MaxULDataRate: Maximum UL data rate

MaxSLtxDataRate: Maximum SL data rate in transmission

MaxSLrxDataRate: Maximum SL data rate in reception

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

A-CSI Aperiodic-CSI

AI/ML Artificial Intelligence/Machine Learning

ATG Air To Ground

BAP Backhaul Adaptation Protocol

BC Band Combination

BPS Body Proximity Sensing

BT Bluetooth

CCS Cross Carrier Scheduling

CMR Channel Measurement Resource

CPAC Conditional PSCell Addition/Change

DAPS Dual Active Protocol Stack

DL Downlink

DSR Delay Status Report

EHC Ethernet Header Compression

FS Feature Set

FSPC Feature Set Per Component-carrier

GSO Geosynchronous Orbit

HSDN High Speed Dedicated Network

IAB-MT Integrated Access Backhaul Mobile Termination

IDC In-Device Coexistence

MAC Medium Access Control

MHI Mobility History Information

MBS Multicast/Broadcast Service

MCG Master Cell Group

MN Master Node

MO-SDT Mobile Originated Small Data Transmission

MRB MBS Radio Bearer

MR-DC Multi-Radio Dual Connectivity

MSD Maximum Sensitivity Degradation

MT-SDT Mobile Terminated Small Data Transmission

mTRP Multiple TRP

MUSIM Multi-Universal Subscriber Identity Module

NCJT Non-Coherent Joint Transmission

NCR Network Controlled Repeater

NCR-MT NCR Mobile Termination

NCSG Network Controlled Small Gap

NES Network Energy Savings

NGSO Non-Geosynchronous Orbit

NTN Non-Terrestrial Network

P-CSI Periodic CSI

PDCP Packet Data Convergence Protocol

PSI PDU Set Importance

QoE Quality of Experience

RLC Radio Link Control

RTT Round Trip Time

SCG Secondary Cell Group

SDAP Service Data Adaptation Protocol

SDL Supplementary Downlink

SN Secondary Node

sTRP Serving TRP

SUL Supplementary Uplink

TN Terrestrial Network

TRP Transmit/Receive Point

UDC Uplink Data Compression

UL Uplink

VSAT Very Small Aperture Terminal

WLAN Wireless Local Area Network

XR eXtended Reality

# 4 UE radio access capability parameters

## 4.2 UE Capability Parameters

<Omitted unrelated text>

### 4.2.xx AI/ML features

| Definitions for parameters | Per | M | FDD-TDD DIFF | FR1-FR2 DIFF |
| --- | --- | --- | --- | --- |
| ***applicabilityReportingCSI-r19***  Indicates whether the UE supports applicability reporting and/or its updates (via *RRCReconfigurationComplete* or via *UEAssistanceInformation* message) based on inference configuration provided via *CSI-ReportConfig*, as specified in TS 38.331 [9].  It is mandatory if UE supports at least one of *aiml-BM-Case1-r19*, *aiml-BM-Case2-r19* and *aiml-CSI-Prediction-r19*. | UE | CY | No | No |
| ***applicabilityReportingOther-r19***  Indicates whether the UE supports applicability reporting and/or its updates (via *RRCReconfigurationComplete* or via *UEAssistanceInformation* message) based on inference related configuration provided via *OtherConfig*, as specified in TS 38.331 [9]. The UE also supports providing updates of applicability reporting via UAI.  It is mandatory if UE supports at least one of *aiml-BM-Case1-r19* and *aiml-BM-Case2-r19*. | UE | CY | No | No |
| ***dataThresholdAvailabilityIndication-r19***  Indicates whether the UE supports triggering data availability indication via *UEAssistanceInformation* message when logged data for network data collection reaches a configured threshold.  A UE supporting this feature shall also indicate support of *loggedDataCollection-r19*. | UE | No | No | No |
| ***eventBasedLoggedDataCollection-r19***  Indicates whether the UE supports L3 measurement event-triggered logging of measurements for network data collection, as specified in TS 38.331 [9].  A UE supporting this feature shall also indicate support of *loggedDataCollection-r19* and *dataThresholdAvailabilityIndication-r19*. | UE | No | No | No |
| ***loggedDataCollection-r19***  Indicates whether the UE supports periodical logging of measuements for network data collection, as specified in TS 38.331 [9]. The UE also supports providing full buffer indication and low power indication via *UEAssistanceInformation* message.  The minimum memory size of logged measurement of network data collection is 64kB. | UE | No | No | No |

*END OF CHANGES*

# Annex: RAN2 UE capability feature list

According to the following agreements made in RAN2#129bis (R2-2502767), RAN2 determined UE capabilities in the feature list format for TR 38.822 is included.

The 306 CRs shall include an annex containing the RAN2 determined UE capabilities in the feature list format (similar to annex containing RAN2 agreements), for easy compilation into the TR38.822 in the later stage (as agreed in RAN2 #116-e). The annex of RAN2 determined UE capabilities feature list should align with field description.

### 8.2.x NR\_AIML\_air-Core

Table 8.2.x-1: Layer-2 and Layer-3 feature list for NR\_AIML\_air-Core

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 |
| X. NR\_AIML\_air-Core | x-1 | Applicability reporting | Indicates whether the UE supports applicability reporting and/or its updates (via *RRCReconfigurationComplete* or via *UEAssistanceInformation* message) based on inference configuration provided via *CSI-ReportConfig*, as specified in TS 38.331 [9].  It is mandatory if UE supports at least one of *aiml-BM-Case1-r19*, *aiml-BM-Case2-r19* and *aiml-CSI-Prediction-r19*. | at least one of RAN1 FG 58-1-2, 58-1-4, 58-3-1 | *applicabilityReportingCSI-r19* | *AIML-Parameters* | No | No |  | Conditional mandatory with capability signalling |
| Indicates whether the UE supports applicability reporting and/or its updates (via *RRCReconfigurationComplete* or via *UEAssistanceInformation* message) based on inference related configuration provided via *OtherConfig*, as specified in TS 38.331 [9]. The UE also supports providing updates of applicability reporting via UAI.  It is mandatory if UE supports at least one of *aiml-BM-Case1-r19* and *aiml-BM-Case2-r19*. | at least one of RAN1 FG 58-1-2, 58-1-4 | *applicabilityReportingOther-r19* | *AIML-Parameters* | No | No |  | Conditional mandatory with capability signalling |
| x-2 | network data collection | Indicates whether the UE supports periodical logging of measuements for network data collection, as specified in TS 38.331 [9]. The UE also supports providing full buffer indication and low power indication via *UEAssistanceInformation* message.  The minimum memory size of logged measurement of network data collection is 64kB. |  | *loggedDataCollection-r19* | *AIML-Parameters* | No | No |  | optional with capability signalling |
| Indicates whether the UE supports L3 measurement event-triggered logging of measurements for network data collection, as specified in TS 38.331 [9].  A UE supporting this feature shall also indicate support of *loggedDataCollection-r19* and *dataThresholdAvailabilityIndication-r19*. | x-2, x-4 | *eventBasedLoggedDataCollection-r19* | *AIML-Parameters* | No | No |  | optional with capability signalling |
| Indicates whether the UE supports triggering data availability indication via *UEAssistanceInformation* message when logged data for network data collection reaches a configured threshold.  A UE supporting this feature shall also indicate support of *loggedDataCollection-r19*. | x-2 | *dataThresholdAvailabilityIndication-r19* | *AIML-Parameters* | No | No |  | optional with capability signalling |