**3GPP TSG RAN Meeting #104 RP-24xxxx**

**June 17–20, 2024, Shanghai, China**

**Source: Moderator (RAN4 Vice Chair, China Telecom)**

**Title: New WID: Rel-19 High power UE (power class 1.5 or 2) for Dual Connectivity (DC) combinations of LTE band(s) and NR band(s)**

**Document for: Approval**

**Agenda Item: 9.1.5**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

## Title: Rel-19 High power UE (power class 1.5 or 2) for Dual Connectivity (DC) combinations of LTE band(s) and NR band(s)

## Acronym: HPUE\_DC\_LTE\_NR\_R19

## Unique identifier: TBD

|  |  |
| --- | --- |
| **This WID includes a Core part** | **X** |
| **This WID includes a Performance part** |  |

## 1 Impacts *{ For Normative work, identify the anticipated impacts. For a Study, identify the scope of the study.}*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | UICC apps | ME | AN | CN | Others (specify) |
| **Yes** |  | X |  |  |  |
| **No** | X |  | X | X |  |
| **Don't know** |  |  |  |  |  |

## 2 Classification of the Work Item and linked work items

### 2.1 Primary classification

This work item is a … *{Tick one box. "***Feature** */* **Building Block** */ Work Task" form a hierarchical structure. E.g. no Building Block can be proposed without a corresponding parent Feature. The full structure of all existing Work Items is shown in the 3GPP Work Plan in* *ftp://ftp.3gpp.org/Information/WORK\_PLAN* *}*

|  |  |
| --- | --- |
| X | Feature |
|  | Building Block |
|  | *Work Task* |
|  | Study Item |

### 2.2 Parent Work Item

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
|  |  |  |  |

## 3 Justification

This Work Item will focus on power class m (m<3) EN-DC band combinations, in which configurations for x LTE bands and y NR (xLTE+yNR) band DL with 1 LTE UL and 1TDD NR (1LTE+1TDD NR) band UL will be defined under this WI, where

* The downlink x is 1, 2, 3 or 4 and y is 1, or,
* The downlink x is 1, or 2 and y is 2
* The uplink is 1 LTE and 1 TDD NR

The preconditions shall ensure that the constituent of PC3 EN-DC configurations shall be completed and specified before or in the same meeting as High power UE configurations.

## 4 Objective

### 4.1 Objective of SI or Core part WI or Testing part WI

* High power UE EN-DC band combinations introduced by this WI will be introduced starting with REL-19.
* Specify the band-combination specific RF requirements for all listed NR EN-DC combinations for
	+ 2 (1LTE+1NR) different bands DL with 2 (1LTE+1TDD NR) bands UL, or
	+ 3 (2LTE+1NR) different bands DL with 2 (1LTE+1TDD NR) bands UL, or
	+ 4 (3LTE+1NR) different bands DL with 2 (1LTE+1TDD NR) bands UL, or
	+ 5 (4LTE+1NR) different bands DL with 2 (1LTE+1TDD NR) bands UL, or
	+ 3 (1LTE+2NR) different bands DL with 2 (1LTE+1TDD NR) bands UL, or
	+ 4 (2LTE+2NR) different bands DL with 2 (1LTE+1TDD NR) bands UL.
* including at least
	+ Applicable frequencies
	+ Applicable bandwidths and bandwidth sets
* Analyze combinations that have self-desensitization due to following reasons:
	+ TX Harmonic overlap of receive band
	+ TX signal overlap of receiver harmonic frequency
	+ TX frequency being in close proximity of one of the receive bands
	+ Any other identified reasons
* For the combination where self-desensitization exists, specify at least needed
	+ ∆TIB and ∆RIB
	+ Reference sensitivity excerptions
	+ UL RB restrictions for REFSENS test

Note：For the uplink FDD LTE + TDD NR band combinations, only 23dBm would be considered for FDD LTE band.

**An overview table of these DC configurations is provided in the appended Excel sheet.**

### 4.2 Objective of Performance part WI

CA combinations of this WI are introduced in a REL-independent way starting from REL-15 according to Table 8.1.2.1-0 of TS 38.307. However no changes to TS 38.307 are needed.

### 4.3 RAN time budget request (not applicable to RAN5 WIs/SIs)

NOTE: For all RAN related WIs/SIs which are not led by RAN WG5 the WI/SI rapporteur has to fill out the attached Excel table to request time budgets for corresponding RAN WG meetings.
The Excel table has to be filled out for all affected RAN WGs and up to the target date of the WI/SI.
One time unit (TU) corresponds to ~ 2 hours in the meeting.
If no TU is needed leave the field empty otherwise enter a number >0 in the field.

 For revisions of already approved WI/SI descriptions: Please remove the Excel table from the WID/SID's zip file. The time budgets are already recorded. If you want to modify them, then this has to be done via the status report and not via a revised WID/SID.

 If this WID is covering Core and Performance part, then please fill out one line for each part in the attached Excel table.

## 5 Expected Output and Time scale

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| --- |
| **New specifications** *{One line per specification. Create/delete lines as needed}* |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Remarks |
| *Internal TR* | *TBD* | *Rel-19 High power UE (power class 1.5 or 2) for Dual Connectivity (DC) combinations of LTE band(s) and NR band(s)*  | RAN#108 | TSG#109 | Core part |

|  |
| --- |
| **Impacted existing TS/TR** *{One line per specification. Create/delete lines as needed}* |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| 38.101-3 | Add High power UE EN-DC to User Equipment (UE) radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios | RAN#109 | Core part |

## 6 Work item Rapporteur(s)

Company:

Email:

## 7 Work item leadership

*RAN WG4*

## 8 Aspects that involve other WGs

*None*

## 9 Supporting Individual Members

*{At least 4 supporting Individual Members are needed. There is an expectation that these companies will provide resources to progress the work. Note that having 4 supporting companies is a necessary but not sufficient condition: the usual TSG approval process by consensus is needed for the WID approval.}*

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| Supporting IM name |
| AT&T |
| CHTTL |
| KDDI |
| NBN |
| Samsung |
| Softbank |
| Telstra |
| Verizon |