**3GPP TSG RAN Meeting #94e RP-21xxxx**

**Electronic Meeting, Dec. 6 - 17, 2021** (revision of RP-212717)

**Source: Xiaomi Communications**

**Title: New WID on IDC Enhancements**

**Document for: Approval**

**Agenda Item: xxx**

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: WID on IDC Enhancements

## Acronym: NR\_IDC\_Enh

## Unique identifier: *{A number to be provided by MCC at the plenary}*

NOTE: For new WIs/SIs leave the Unique identifier empty and make a proposal for an Acronym.

 For a revised WI/SI: Take Unique identifier and acronym as shown in 3GPP workplan.

 If this is a RAN WID including Core and Perf. part, then Title, Acronym and Unique identifier refer to the feature WI.

 Please tick (X) the applicable box(es) in the table below:

 Either:

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

 or:

|  |  |
| --- | --- |
| **This WID includes a Testing part** |  |
| **and it addresses the following 3GPP work area:** | **Radio Access** |  |
| **Core Network** |  |
| **Services** |  |

Potential target Release: Rel-18

Note that this field above indicates the proposed Release at the time of submission of the WID to TSG approval. It can later be changed without a need to revise the WID. The updated target Release is indicated in the Work Plan. NOTE: In case of contradiction with the target dates of clause 5, clause 5 determines the target release.

## 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 | x |  |  |
| **No** |  |  |  | x |  |
| **Don't know** |  |  |  |  |  |

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

### 2.1 Primary classification

This work item is a …

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

NOTE: Normally, Core/Perf./Testing parts in RAN WIDs are Building Blocks. Only if they are under an SA or CT umbrella, they are defined as work tasks. If you are in doubt, please contact MCC.

### 2.2 Parent Work Item

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

NOTE: RAN agreed some time ago, that it describes the feature WI + Core/Perf. part WI or Testing part WI in one WID. Therefore the table above should just include the feature WI data (In case the feature covers Core and Perf. part, please list under Working Group the leading WG of the Core part).

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work Items (if any) |
| Unique ID | Title | Nature of relationship |
|  |  | *{optional free text}*  |

NOTE: Also related or dependent WIs/SIs in other TSGs should be indicated.

**Dependency on non-3GPP (draft) specification**:

## 3 Justification

As a general assumption, IDC is assumed to work as follows:

1. The UE detects internal issue or the possibility of internal issue caused by coexistence related to usage of certain radio resources, that the UE cannot resolve by itself.
2. The UE provides information to the gNB to assist that the gNB may restrict radio resource usage to avoid the UE internal issue (or potential issue) caused by coexistence.

The current IDC solution in NR has the following limitations: It does not support well interference mitigation between 3GPP and other RAT, as e.g. the affected frequencies cannot be adequately indicated via the NR FDM solution. Introducing a TDM solution would make it possible to handle scenarios for which alternative non-interfered frequencies are not available. The TDM solution may be used to avoid the interference caused by simultaneous uplink transmission on the UL frequencies to non-3GPP RAT.

## 4 Objective

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

This WI expects to address Interference between 3GPP (including various MR-DC architectures, i.e. NR-DC and EN-DC) and non-3GPP RAT (e.g. WiFi).

* Enhancements to FDM solution, to allow more granular indication of affected frequencies (e.g. granularity of BWP or PRB level). (RAN2)

Note: Enhancements to FDM solution is prioritized.

* Introduction of TDM solution (e.g. indication of UE preferred TDM pattern for UL/DL). (RAN2, RAN4).
Note: The TDM solution is considered complementary to the FDM solution.

Note: LTE should be considered a baseline for the solutions developed in this WI.

### 4.2 Objective of Performance part WI

NOTE: Leave empty if the WI proposal does not contain a RAN performance part.

Specify the following requirements [RAN4]

* UE RRM performance requirements

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

NOTE: For all new 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, then 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.

**Additional comments to the time budget request in the attached Excel table:**

## 5 Expected Output and Time scale

|  |
| --- |
| **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 |
| *{Possible values:**“TS” or* *“Internal TR” or* *“External TR”. See Note 1}* | *{E.g.* *“22.XXX” or actual number if known}* | *{Title of the specification (as per TR 21.801 §6.1.1), to be aligned as much as possible with the WI/SI title}*  | *{E.g.* *“TSG#87”}* | *{E.g.* *“TSG#89”}* | *{e.g. rapporteur: <FamilyName>, <GivenName>, <Company>, <email address>}* |

*{Note 1: Only TSs may contain normative provisions. Study Items shall create or impact only TRs.
“Internal TR” is intended for 3GPP internal use only whereas “External TR” may be transposed by Ops.}*

NOTE: If this is a RAN WI including Core and Perf. Part, then all new Core part specs have to be listed first and then all new Perf. Part specs. Indicate “Core part” or “Perf. Part” under Remarks for each spec.
By default a new specs can only be new for one of both parts.

|  |
| --- |
| **Impacted existing TS/TR** *{One line per specification. Create/delete lines as needed}* |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| 38.300 | NR; Overall description; Stage-2: IDC-specific stage-2 description | RAN#100 | Core part |
| 38.331 | NR; Radio Resource Control (RRC); IDC-specific stage-3 details for NR | RAN#100 | Core part |
| 38.306 | NR; User Equipment (UE) radio access capabilitiesIDC-specific NR UE capability | RAN#100 | Core part |
| 37.340 | (E-UTRA) and NR; Multi-connectivityIDC-specific MR-DC stage-2 description | RAN#100 | Core part |
| 36.331 | (E-UTRA); Radio Resource Control (RRC); IDC-specific stage-3 details for EN-DC | RAN#100 | Core part |
| 36.306 | (E-UTRA); User Equipment (UE) radio access capabilitiesIDC-specific EN-DC UE capability | RAN#100 | Core part |
| 38.133 | NR; Requirements for support of radio resource managementIDC-specific performance requirement | RAN#102 | Core part |
| 38.133 | NR; Requirements for support of radio resource managementIDC-specific performance requirement | RAN#102 | Performance part |

NOTE: If this is a RAN WI including Core and Perf. part, then all new Core part specs have to be listed first and then all new Perf. part specs. Indicate "Core part" or "Perf. part" under Remarks for each spec.
If an existing spec is affected by both (Core part and Perf. part), then it has to be listed twice with appropriate approval dates.

## 6 Work item Rapporteur(s)

Yumin Wu

**Company:** Xiaomi

**Email:** wuyumin@xiaomi.com

## 7 Work item leadership

Primary: RAN2

Secondary: RAN4

## 8 Aspects that involve other WGs

None Identified yet

NOTE: For RAN WIs: Section 8 applies only to WGs outside of TSG RAN because RAN WG aspects have to be covered in section 4.

## 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| Xiaomi Communications |
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