3GPP TSG-RAN WG2 Meeting #122 R2-2xxxxxx

Incheon, Korea, May 22-26, 2023

Agenda: 8.8

Source: Session Chair (Intel)

Title: Report from IDC breakout session

Document for: Approval

**Organizational:**

* [AT122][650][IDC] Organizational Yi – IDC (Intel)

Scope:

* Share plans for the e-meetings and list/status of ongoing email discussions for the sessions.
* Share meeting notes and agreements for review and endorsement.

## 7.10 IDC enhancements for NR and MR-DC

(NR\_IDC\_enh-Core; leading WG: RAN2; REL-18; WID: RP-221281)

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

### 7.10.1 Organizational

LS in. Rapporteur Input, e.g. running CRs;

Including the outcome of email discussion [Post121][655][IDC] Discussion on Leftover issues for IDC (xiaomi).

R2-2305580 Summary of [Post121][655][IDC] Discussion on Leftover issues for IDC Xiaomi discussion Rel-18 NR\_IDC\_enh-Core

Discussion:

Proposal 1 (8/10): No extra UE behaviors need to be clarified on the starting slot for autonomousDenialValidity.

Proposal 2 (8/10): The LTE autonomous denial configuration is only for the LTE frequency in EN-DC, and no extra specification change is needed.

Proposal 3: RAN2 is kindly requested to select one option from the followings:

 Option 1 (5/10): The UE sums up the denied UL slots together across all CC(s) in the CG. RAN2 is requested to discuss whether this is captured in the Chair’s minutes or in a NOTE in the specification.

 Option 2 (2/10): The dropped UL slots across CCs at the same time are counted as a single slot. RAN2 is requested to discuss whether the “single slot” refers to PCell.

 Option 3 (1/10): The autonomous denial configuration is per CC.

Inter-node coordination:

Proposal 4 (5(No)/4(Yes)): RAN2 is kindly requested to discuss whether the inter-node coordination is needed for the IDC report from UE.

Proposal 5 (5(No)/4(Yes)): RAN2 is kindly requested to discuss whether additional coordination between MN and SN is needed when network configures IDC assistance information reporting or autonomous denial for the UE.

Others:

Proposal 6 (7/10): The FDM configuration/reporting and the TDM configuration/reporting can be provided independently. No extra specification change is needed.

Proposal 7 (10/10): The CG used for reporting the TDM assistance information is used as the timing reference. RAN2 is requested to discuss whether this is captured in a NOTE in the specification.

Proposal 8 (10/10): maxFreqIDC-r16 is reused.

Proposal 9 (9/10): interferenceDirection-r18 reuses the values of interferenceDirection-r16.

Proposal 10 (5/10): A unified solution is adopted for harmonic interference and IMD interference that interferenceDirection or victimSystemType is always reported with the affected frequency.

Propoal 11 (6/10): Value “whole” is removed for affectedBandwidth-r18 and candidateBandwidth-r18.

Proposal 12 (9/10): candidateBandwidth-r18 is always included for the Rel-18 IDC FDM configuration from the network.

Proposal 13 (8/10): affectedBandwidth-r18 is always included for the Rel-18 FDM assistance information reported from the UE.

R2-2305579 Draft LS on autonomous denial Xiaomi LS out Rel-18 NR\_IDC\_enh-Core To:RAN4

R2-2305578 38.331 running CR for introduction of IDC Xiaomi draftCR Rel-18 38.331 17.4.0 NR\_IDC\_enh-Core

R2-2305995 Introduction of In-Device Co-existence (IDC) enhancements for NR Huawei, HiSilicon CR Rel-18 38.300 17.4.0 0680 - B NR\_IDC\_enh-Core

R2-2306304 37.340 Running CR for Introduction of IDC ZTE Corporation, Sanechips draftCR Rel-18 37.340 17.4.0 B NR\_IDC\_enh-Core R2-2303884

R2-2305446 Introduction of Rel-18 IDC UE capabilities Intel Corporation CR Rel-18 38.306 17.4.0 0915 - B NR\_IDC\_enh-Core R2-2302979

R2-2305447 Introcution of Rel-18 IDC UE capabilities Intel Corporation CR Rel-18 38.331 17.4.0 4106 - B NR\_IDC\_enh-Core R2-2302980

### 7.10.2 FDM solution enhancements

Leftover issues and issues identified for running CRs on FDM solutions.

R2-2305978 Discussion on the handling IDC issue during the SDT procedure Huawei, HiSilicon discussion Rel-18 NR\_IDC\_enh-Core

Proposal 1- FDM solution enhancements introduced in Rel 18 should be applied to the SDT procedure to address IDC issue that happens during SDT and to avoid degradation of the overall system performance .

Proposal 2a- For the UE configured with R18 IDC Configuration during RRC\_CONNECTED State, the gNB can simply provide an indication for the UE to keep using the same IDC Config during SDT procedure in RRCRelease message when moving the UE to RRC\_INACTIVE state.

Proposal 2b- If the UE detects IDC issue during SDT, it reports the affected frequency range in the UE Assistance Information message during SDT procedure as usual. No changes are required for SDT.

Proposal 2c- On receiving IDC report, gNB applies scheduling restrictions to not schedule the UE in the affected frequency range during the SDT procedure.

R2-2305124 FDM Solutions in IDC Qualcomm Incorporated discussion Rel-18

Proposal 2: “uwb” is added as a field value in victimSystemType.

R2-2305034 More granular FDM indications Ericsson discussion Rel-18 NR\_IDC\_enh-Core

Proposal 1 Adopt at least 2 MHz as the smallest BW value for both candidateBandwidth-r18 and affectedBandwidth-r18.

R2-2305452 Open issues of FDM solution for IDC Intel Corporation discussion Rel-18 NR\_IDC\_enh-Core

Proposal 3: The granularity of affected bandwidth should not be smaller than 180 kHz.

Proposal 4: The affected bandwidth takes the following values {kzh200, khz400, khz600, khz800, mhz1, mhz2, mhz3, mhz4, mhz5, mhz6, mhz8, mhz10, mhz20, mhz30, mhz40, mhz50, mhz60, mhz80, mhz100, mhz200, mhz300, mhz400, spare…}.

R2-2305009 Discussion on inter-node coordination for IDC Samsung discussion Rel-18 NR\_IDC\_enh-Core

R2-2305035 IDC configuration and report in MR-DC Ericsson discussion Rel-18 NR\_IDC\_enh-Core

R2-2305581 Remaining issues for FDM Xiaomi discussion Rel-18 NR\_IDC\_enh-Core

R2-2305976 Discussion on inter-node coordination issue for NR IDC Huawei, HiSilicon discussion Rel-18 NR\_IDC\_enh-Core

R2-2305977 Leftover issues for FDM solution enhancement for NR IDC Huawei, HiSilicon discussion Rel-18 NR\_IDC\_enh-Core

R2-2306210 Discussion on the leftover issue for IDC FDM Solution vivo discussion Rel-18 NR\_IDC\_enh-Core

R2-2306305 Remaining Issues on the FDM solution enhancement ZTE Corporation, Sanechips discussion Rel-18 NR\_IDC\_enh-Core

R2-2306307 Further Consideration on the NR-DC IMD Interference Reporting ZTE Corporation, Sanechips discussion Rel-18 NR\_IDC\_enh-Core

R2-2306364 Common FDM and TDM aspects Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_IDC\_enh-Core

R2-2306366 Autonomous Denial Aspects Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_IDC\_enh-Core

### 7.10.3 TDM solution

Leftover issues and issues identified for running CRs on TDM solutions.

Note, common issues for FDM and TDM (e.g. inter-node coordination, independent configuration of FDM and TDM, etc) should be submitted under agenda item 7.10.2.

R2-2305125 TDM Solutions in IDC Qualcomm Incorporated discussion Rel-18

Proposal 4: Values 100ms and 96ms are added to the possible cycleLength-r18 in IDC-TDM-Assistance-r18 to cover WLAN and UWB, respectively.

R2-2305453 Open issues of TDM solution for IDC Intel Corporation discussion Rel-18 NR\_IDC\_enh-Core Withdrawn

R2-2305582 Remaining issues for TDM solutions Xiaomi discussion Rel-18 NR\_IDC\_enh-Core

R2-2306173 Leftover autonomous denial operation issues in IDC Apple discussion Rel-18 NR\_IDC\_enh-Core

R2-2306211 Discussion on the leftover issue for IDC TDM Solution vivo discussion Rel-18 NR\_IDC\_enh-Core

R2-2306306 Remaining Issues on the TDM solution enhancement ZTE Corporation, Sanechips discussion Rel-18 NR\_IDC\_enh-Core

R2-2306365 Interference direction for TDM Assistance Information for IDC Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_IDC\_enh-Core

### 7.10.4 UE capabilities

Including impact to TS 38.306 and TS 38.331.

R2-2305126 IDC UE Capabilities Qualcomm Incorporated discussion Rel-18

R2-2306212 Discussion on IDC UE Capabilities vivo discussion Rel-18 NR\_IDC\_enh-Core