3GPP TSG-RAN WG2 Meeting #129bis draft R2-2502982

Wuhan, China, Apr. 7th – 11th , 2025

Source: RAN2 Vice Chairman (CATT)

Title: Report from session on Rel-18 MIMO, Rel-19 MIMO, LPWUS, SBFD, NR Others

## Organizational email discussion

* [AT129bis][200] Organizational – Rel-18 MIMO, Rel-19 MIMO, LPWUS, SBFD, NR Others (RAN2 VC)

Scope:

a) Share plans for online/offline discussions during the meeting, and

b) Share draft session notes and agreements for review

#### 7.0.2.13 NR MIMO evolution

(NR\_MIMO\_evo\_DL\_UL-Core; leading WG: RAN1; REL-18; WID: [RP-233028](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_98e/Docs/RP-223276.zip))

R2-2501712 LS on RRC parameter for PRACH transmission in 2TA (R1-2501540; contact: CATT) RAN1 LS in Rel-18 NR\_MIMO\_evo\_DL\_UL-Core To:RAN2

* ?? Noted

R2-2501719 Reply LS on differentiation of sDCI mTRP, mDCI mTRP and sTRP (R1- 2501611; contact: CATT) RAN1 LS in Rel-18 NR\_MIMO\_evo\_DL\_UL-Core To:RAN2

* ?? Noted

R2-2501723 Reply LS on UL 8Tx (R1-2501636; contact: Samsung) RAN1 LS in Rel-18 NR\_MIMO\_evo\_DL\_UL-Core To:RAN2

* ?? Noted

8Tx

R2-2502810 Discussion on supporting 8Tx ASUSTeK discussion Rel-18 NR\_MIMO\_evo\_DL\_UL-Core

R2-2502811 Correction on supporting 8Tx in MAC specification ASUSTeK, Samsung, ZTE CR Rel-18 38.321 18.5.0 2068 - F NR\_MIMO\_evo\_DL\_UL-Core

=> Withdrawn

R2-2502812 Stage-2 Correction on UL 8Tx ASUSTeK CR Rel-18 38.300 18.5.0 0987 - F NR\_MIMO\_evo\_DL\_UL-Core

R2-2502835 Correction on supporting 8Tx in MAC specification ASUSTeK, Samsung, ZTE CR Rel-18 38.321 18.5.0 1990 2 F NR\_MIMO\_evo\_DL\_UL-Core R2-2500410

Other changes

R2-2502105 Corrections on simultaneousU-TCI-UpdateListx and RACH-ConfigTwoTA CATT CR Rel-18 38.331 18.5.1 5291 - F NR\_MIMO\_evo\_DL\_UL-Core

R2-2502855 Correction to 306 on PMI subband R value Ericsson CR Rel-18 38.306 18.5.0 1267 - F NR\_MIMO\_evo\_DL\_UL-Core

R2-2502987 Correction for UE capability on DMRS port Huawei, HiSilicon discussion Rel-18 NR\_MIMO\_evo\_DL\_UL

## 8.4 Low-power wake-up signal and receiver for NR (LP-WUS/WUR)

(NR\_LPWUS-Core; leading WG: RAN1; REL-19; WID [RP-241824](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_105/Docs/RP-241824.zip))

Time budget: 1 TU

Tdoc Limitation: 3 tdocs

### 8.4.1 Organizational

LS, Rapporteur input, including workplan, Running CRs, etc.

LS

R2-2501743 LS on LP-WUS UE RF (R4-2503003; contact: vivo) RAN4 LS in Rel-19 NR\_LPWUS-Core To:RAN1 Cc:RAN2

* ?? Noted

Running CRs

*Chair: Plan is to directly note these draft CRs, and update/endorse with post meeting email discussions. Also, we will discuss and prepare open issue lists (e.g., per spec) after this meeting.*

R2-2501954 Running 37.340 CR for LP-WUS ZTE Corporation, Sanechips draftCR Rel-19 37.340 18.5.0 NR\_LPWUS-Core

R2-2502913 Introduction of Low-Power Wake-Up Signal and Receiver for NR Ericsson draftCR Rel-19 38.300 18.5.0 NR\_LPWUS-Core

R2-2502141 38.304 Running CR for LP-WUS (CATT) CATT discussion Rel-19 NR\_LPWUS-Core

R2-2502153 RRC Running CR for LP-WUS WUR vivo (Rapporteur) draftCR Rel-19 38.331 18.5.1 B NR\_LPWUS-Core

R2-2502307 Running MAC CR for LP-WUS Apple draftCR Rel-19 38.321 18.5.0 B NR\_LPWUS-Core

Others

*Chair: plan is to discuss UE capabilities in the CB session, if time allows*

R2-2502098 Discussion on UE capability for LP-WUS Huawei, HiSilicon discussion Rel-19

R2-2502142 Summary of [Post129][212][LPWUS] Running CR for TS 38.304 (CATT) CATT discussion Rel-19 NR\_LPWUS-Core

R2-2502154 Whether/How to reduce the number of thresholds for LP-WUS monitoring and RRM relaxation/offloading vivo discussion Rel-19 NR\_LPWUS-Core

=> The above two contributions are moved to 8.4.3

R2-2501955 Summary of [Post129][213] LP-WUS in MR-DC ZTE Corporation, Sanechips discussion Rel-19 NR\_LPWUS-Core

=> Moved to 8.4.4

### 8.4.2 Procedure and configuration of LP-WUS in RRC\_IDLE/INACTIVE

Procedure and configuration of LP-WUS indicating paging monitoring triggered by LP-WUS, including at least configuration, sub-grouping, and entry/exit condition for LP-WUS monitoring

Sub-grouping related aspects

*Chair: plan is to start the discussions in the 1st session and then use offline to progress*

R2-2502324 Discussion on LP-WUS procedure and configuration OPPO discussion Rel-19 NR\_LPWUS-Core

*Proposal 5 Regarding the UE\_ID based subgrouping formula for LP-WUS, revise description of Np:*

*Np is the number of subgroupNumForUEID for PEI, if configured and UE supports could monitor PEI in this cell; otherwise, Np is 1.*

*Proposal 6 Support LP-WUS and subgrouping for both DRX and eDRX UEs.*

*Proposal 7 For UE-ID based subgrouping for LP-WUS, UE\_ID is defined as 5G-S-TMSI mod X, where X value is given as below.*

*<table>*

*Proposal 8 UE-ID based subgrouping for LP-WUS is not used when the UE has an active emergency PDU session.*

R2-2502910 LP-WUS in idle and inactive Ericsson discussion

*Proposal 1 LP-WUS is supported with eDRX without additional changes. I.e. the UE monitors LP-WUS during PTW instead of monitoring normal DRX during PTW as in regular eDRX.*

*Proposal 2 Ask RAN3 to provide 18 bits of the Hashed UE Identity Index Value IE for UE-ID based LP-WUS subgrouping in Rel-19.*

*Proposal 3 When the UE has an emergency PDU session LP-WUS is not used. Send an LS to CT1, RAN3 and SA2 to inform them.*

R2-2502143 LP-WUS in RRC\_IDLE/INACTIVE CATT discussion Rel-19 NR\_LPWUS-Core

LP-WUS with eDRX:

*Proposal 1: LP-WUS is supported to be operated with eDRX simultaneously.*

*Proposal 2: For UE\_ID based subgrouping for LP-WUS, UE\_ID = 5G-S-TMSI mod X, X needs to be 2^18 for DRX case and 2^20 for eDRX case if supported.*

*Proposal 3: Send LS to RAN3 (CC SA2/CT1) to ask their concern on the agreed formula of UE\_ID based subgrouping for LP-WUS.*

*Proposal 4: Confirm the principle that determines CN assigned subgrouping or UE\_ID based subgrouping for PEI is reused for LP-WUS subgrouping.*

* ?? [AT129bis][201][LPWUS] Proposals for UE ID based sub-grouping (xxxx)

Scope: Discuss remaining details for the formula of UE ID based sub-grouping, and also cover potential issue for emergency PDU session

 Intended outcome: Summary with proposals in R2-2503031.

 Deadline: Before Thursday CB

LPWUS configuration

R2-2502308 Procedure and configuration of LP-WUS in RRC\_IDLE/INACTIVE Apple discussion Rel-19 NR\_LPWUS-Core

*Proposal 9: The LP-WUS subgrouping configuration is provided in SIB1.*

R2-2502097 Discussion on procedure and configuration of LP-WUS in RRC\_IDLE/INACTIVE Huawei, HiSilicon discussion Rel-19

*Proposal 2: Dedicated configuration in RRC signaling is not needed for providing LP-WUS related configuration in RRC\_IDLE/INACTIVE modes.*

Entry/exit condition of LPWUS monitoring

R2-2502447 LP-WUS operation in IDLE/Inactive state Qualcomm Incorporated discussion NR\_LPWUS-Core

*Proposal 7 Use existing Srxlev/Squal for MR measurement based entry/exit condition evaluation.*

*Proposal 8 Introduce Srxlev\_lp/Squal\_lp for LR measurement based entry/exit condition evaluation. The formula to derive Srxlev/Squal from measured MR value can be used for deriving Srxlev\_lp/Squal\_lp from measured LR value.*

R2-2502143 LP-WUS in RRC\_IDLE/INACTIVE CATT discussion Rel-19 NR\_LPWUS-Core

*Proposal 5: Cell selection value, i.e., existing Srxlev/ Squal in TS 38.304, is used for serving cell quality by MR for conditions of LP-WUS monitoring, measurement relaxation and serving cell measurement offloading for LP-WUS UEs.*

*Proposal 6: Measured value is used for serving cell quality by LR for conditions of LP-WUS monitoring, measurement relaxation and serving cell measurement offloading for LP-WUS UEs.*

Other aspects (e.g., enabling/disabling, activation/deactivation, etc.)

R2-2502659 Discussion on LP-WUS operation in RRC\_IDLE/INACTIVE modes InterDigital, Inc. discussion Rel-19 NR\_LPWUS-Core

*Proposal 2: Support dedicated LP-WUS monitoring (de-)activation per UE via RRC release message.*

R2-2502097 Discussion on procedure and configuration of LP-WUS in RRC\_IDLE/INACTIVE Huawei, HiSilicon discussion Rel-19

*Proposal 3: The CN indicates whether LP-WUS capable UE(s) is/are allowed to use the LP-WUS functionality by NAS signalling; the absence of indication means UE is allowed to use LP-WUS functionality*

R2-2501831 LP-WUS in RRC\_IDLE/INACTIVE HONOR discussion Rel-19 NR\_LPWUS-Core

R2-2501893 Discussion on LP-WUS in RRC\_IDLE INACTIVE NEC discussion Rel-19 NR\_LPWUS-Core

R2-2501960 Procedure and configuration of LP-WUS for IDLE and INACTIVE mode ZTE Corporation, Sanechips discussion Rel-19 NR\_LPWUS-Core

R2-2501997 Procedure and Configuration of LP-WUS in RRC Idle Inactive Mode Samsung discussion Rel-19

R2-2502005 Remaining issues on LP-WUS paging monitoring Xiaomi Communications discussion

R2-2502014 IDLE/INACTIVE mode procedures for supporting LP-WUS Tejas Network Limited discussion Rel-19

R2-2502097 Discussion on procedure and configuration of LP-WUS in RRC\_IDLE/INACTIVE Huawei, HiSilicon discussion Rel-19

R2-2502143 LP-WUS in RRC\_IDLE/INACTIVE CATT discussion Rel-19 NR\_LPWUS-Core

R2-2502155 Discussion on LP-WUS WUR in RRC\_IDLE INACTIVE vivo discussion Rel-19 NR\_LPWUS-Core

R2-2502212 LP-WUS in IDLE and INACTIVE Nokia discussion Rel-19 NR\_LPWUS-Core

R2-2502227 Remaining issues on LP-WUS in RRC IDLE or INACTIVE LG Electronics Inc. discussion Rel-19 NR\_LPWUS-Core

R2-2502308 Procedure and configuration of LP-WUS in RRC\_IDLE/INACTIVE Apple discussion Rel-19 NR\_LPWUS-Core

R2-2502324 Discussion on LP-WUS procedure and configuration OPPO discussion Rel-19 NR\_LPWUS-Core

R2-2502447 LP-WUS operation in IDLE/Inactive state Qualcomm Incorporated discussion NR\_LPWUS-Core

R2-2502486 RAN2 aspects on LP-WUS/WUR in RRC Idle/Inactive mode Sony discussion Rel-19 NR\_LPWUS-Core

R2-2502597 Procedure and Configuration of LP-WUS in RRC IDLE/INACTIVE Lenovo discussion Rel-19 NR\_LPWUS-Core

R2-2502659 Discussion on LP-WUS operation in RRC\_IDLE/INACTIVE modes InterDigital, Inc. discussion Rel-19 NR\_LPWUS-Core

R2-2502743 Discussion on LP-WUS in RRC\_IDLE and RRC\_INACTIVE Sharp discussion Rel-19

R2-2502901 Further Consideration on LP-WUS operation in IDLE/INACTIVE CMCC discussion Rel-19 NR\_LPWUS-Core

R2-2502910 LP-WUS in idle and inactive Ericsson discussion

R2-2502976 Discussion on the LP-WUS handling for Emergency call back NTT DOCOMO INC.. discussion Rel-19 NR\_LPWUS-Core

R2-2502977 Discussion on the LP-WUS capability issue within non-homogeneous deployment NTT DOCOMO INC.. discussion Rel-19 NR\_LPWUS-Core

### 8.4.3 RRM measurement relaxation and offloading in RRC\_IDLE/INACTIVE

RRM relaxation of UE MR for both serving and neighbor cell measurements, and UE serving cell RRM measurement offloaded from MR to LP-WUR, including the necessary conditions

RRM measurement relaxation

Chair: plan is to start the discussions in the 1st session and then use offline to progress

R2-2502142 Summary of [Post129][212][LPWUS] Running CR for TS 38.304 (CATT) CATT discussion Rel-19 NR\_LPWUS-Core

*Proposal 1: General description and criteria of RRM relaxation and offloading for LP-WUS are captured in TS 38.304. Other details of RRM relaxation and offloading for LP-WUS are captured in RAN4.*

*Proposal 2: Send an LS to inform RAN4.*

R2-2501998 RRM measurement relaxation and offloading in RRC Idle Inactive Mode Samsung discussion Rel-19

*Proposal 3. For the entry/ exit conditions of serving cell measurement offloading and serving cell RRM measurement relaxation,*

*- Separate thresholds can be configured for OFDM-based and OOK-based WUR if a cell supports both types of LRs.*

R2-2502156 Discussion on RRM measurement relaxation and offloading in RRC\_IDLE/INACTIVE vivo discussion Rel-19 NR\_LPWUS-Core

*Proposal 9: The metrics for RRM measurement offloading/relaxation criteria include (LP-)RSRP and optional (LP-)RSRQ.*

R2-2501894 Discussion on LP-WUS RRM NEC discussion Rel-19 NR\_LPWUS-Core

*Proposal-1: introduce separate entry/exit condition, i.e., the LP-WUS UE performs relaxed MR serving cell measurement when entry condition is fulfilled and stops performing relaxed MR serving cell measurement when exit condition is fulfilled.*

*Entry condition: based on MR measurement results and optional LR measurement results;*

*Exit condition: based on LR measurement results.*

*Proposal-2: same criterion should be applied to both MR serving cell and neighbour cell measurement relaxation.*

*Proposal-3: once the criteria for MR serving cell measurement offloading is met, then both MR serving cell and neighbour cell measurements should be stopped.*

R2-2502351 RRM measurement relaxation and offloading in RRC\_IDLE/INACTIVE Lenovo discussion Rel-19

*Proposal 4: RAN2 to consider ‘not fulfilling the entry condition’ as the exit condition for serving cell measurement relaxation.*

*Proposal 5: The entry condition for serving cell RRM measurement relaxation is configured independently with the neighboring cell RRM measurement relaxation.*

R2-2502154 Whether/How to reduce the number of thresholds for LP-WUS monitoring and RRM relaxation/offloading vivo discussion Rel-19 NR\_LPWUS-Core

*Proposal 1: RAN2 to discuss whether/how to reduce the number of thresholds for LP-WUS/WUR WI considering the following one or more directions:*

*• Direction 1: Remove the LR based thresholds for all entry conditions in the above 4 RRM relaxation/offloading and LP-WUS monitoring procedures*

*• Direction 2: Merge the entry/exit condition for Serving Cell RRM measurement relaxation and Neighboring Cell RRM measurement relaxation*

*• Direction 3: Merge the entry/exit conditions for Serving Cell RRM measurement offloading or Serving Cell RRM measurement relaxation or Neighboring Cell RRM measurement relaxation and LP-WUS monitoring*

*• Direction 4: Merge the entry/exit conditions for Serving Cell RRM measurement offloading and the current threshold for stopping neighboring cell measurement*

* ?? [AT129bis][202][LPWUS] Proposals for RRM measurement relaxation (xxxx)

Scope: Discuss remaining aspects for RRM measurement relaxation, including definition of the thresholds/conditions, can also discuss how to reduce the number of thresholds

 Intended outcome: Summary with proposals in R2-2503032.

 Deadline: Before Thursday CB.

R2-2501894 Discussion on LP-WUS RRM NEC discussion Rel-19 NR\_LPWUS-Core

R2-2501967 Further discussion on the criteria for RRM measurement relaxation and offloading Huawei, HiSilicon discussion Rel-19 NR\_LPWUS-Core

R2-2501998 RRM measurement relaxation and offloading in RRC Idle Inactive Mode Samsung discussion Rel-19

R2-2502006 Discussion on RRM measurement relaxation for RRC\_IDLE\_INACTIVE Xiaomi Communications discussion

R2-2502144 RRM Relaxation and Offloading in RRC\_IDLE/INACTIVE CATT discussion Rel-19 NR\_LPWUS-Core

R2-2502156 Discussion on RRM measurement relaxation and offloading in RRC\_IDLE/INACTIVE vivo discussion Rel-19 NR\_LPWUS-Core

R2-2502213 RRM measurement relaxation in RRC\_IDLE/INACTIVE Nokia discussion Rel-19 NR\_LPWUS-Core

R2-2502228 Remaining issues on measurement offloading and relaxation LG Electronics Inc. discussion Rel-19 NR\_LPWUS-Core

R2-2502309 RRM measurement relaxation and offloading in RRC\_IDLE/INACTIVE Apple discussion Rel-19 NR\_LPWUS-Core

R2-2502325 Discussion on RRM measurement in RRC IDLE and INACTIVE OPPO discussion Rel-19 NR\_LPWUS-Core

R2-2502351 RRM measurement relaxation and offloading in RRC\_IDLE/INACTIVE Lenovo discussion Rel-19

R2-2502449 LP-WUS RRM measurement relaxation and offloading Qualcomm Incorporated discussion NR\_LPWUS-Core

=> Revised in R2-2502995

R2-2502995 LP-WUS RRM measurement relaxation and offloading Qualcomm Incorporated discussion NR\_LPWUS-Core

R2-2502660 Discussion on RRM measurement relaxation and offloading InterDigital, Inc. discussion Rel-19 NR\_LPWUS-Core

R2-2502722 Discussion on RRM measurement relaxation and offloading in RRC\_IDLE INACTIVE CMCC discussion Rel-19 NR\_LPWUS-Core

R2-2502744 Discussion on RRM measurement relaxation and offloading Sharp discussion Rel-19

R2-2502757 Discussion on neighboring cell measurement with LR InterDigital, Ericsson, Nokia, Sony, Vodafone, KT discussion Rel-19 NR\_LPWUS-Core

R2-2502760 Discussion on RRM measurement relaxation and offloading for RRC\_IDLE and INACTIVE China Telecom discussion

R2-2502911 LP-WUS and RRM measurements Ericsson discussion

R2-2502931 RRM measurement relaxation and offloading in RRC\_IDLE/INACTIVE ZTE Corporation, Sanechips discussion Rel-19 NR\_LPWUS-Core R2-2501090

### 8.4.4 Procedures for LP-WUS in RRC\_CONNECTED

Procedures to allow UE MR PDCCH monitoring triggered by LP-WUS including activation and deactivation procedure of LP-WUS monitoring.

On short DRX cycle

R2-2502477 LP-WUS in CONNECTED mode InterDigital discussion Rel-19 NR\_LPWUS-Core

*Proposal 6: For Option 1-1, when Short DRX cycle is used, the UE does not monitor LP-WUS outside the Active Time.*

*Proposal 7: For Option 1-2, the UE monitors LP-WUS outside the Active Time regardless of if Short DRX cycle or Long DRX cycle is used.*

R2-2502882 LP-WUS in RRC\_CONNECTED Nokia, Nokia Shanghai Bell discussion NR\_LPWUS-Core

*Proposal 1: For option 1-1, it is up to network configuring short DRX cycle with LP-WUS. Send an LS to RAN1 asking if LP-WUS is applicable to short DRX cycle as well as long DRX cycle for option 1-1.*

*Proposal 2: For option 1-2, it is up to network configuring short DRX cycle with LP-WUS. Send an LS to RAN1 asking if there are any technical concerns regarding configuring of short DRX cycle in option 1-2.*

R2-2502448 LP-WUS operation in CONNECTED state Qualcomm Incorporated discussion NR\_LPWUS-Core

*Proposal 1 For Option 1-1, short DRX can be configured, and UE will stop LP-WUS monitor when short DRX is started.*

*Proposal 2 For Option 1-2, short DRX is not configured.*

Other aspects related to the procedure (e.g., collision handling, UAI, etc.)

R2-2502157 Discussion on LP-WUS WUR in RRC\_Connected vivo discussion Rel-19 NR\_LPWUS-Core

*Proposal 3: For LP-WUS Option 1-2, during the timer triggered by LP-WUS is running, periodic CSI/L1-RSRP report and SP CSI report behaviour are the same as legacy drx-onDurationTimer duration without DCP configuration, i.e. always report.*

*Proposal 4: The preferred value of time offset between LP-WUS and PDCCH reported via UAI is expected to be longer than the value for the minimum time gap between LP-WUS and MR to start PDCCH monitoring corresponding to the SCS reported via UE capability.*

*Proposal 5: For LP-WUS Option 1-1 and Option 1-2, RAN2 should consider the UE behaviour when all LP-WUS occasion collides with C-DRX Active Time/ measurement gap/BWP switching interruption length/RAR for BFR.*

*Proposal 6: For LP-WUS Option 1-1 and Option 1-2, in case all the LP-WUS occasion of an LP-WUS collides with C-DRX Active Time/ measurement gap/BWP switching interruption length/RAR for BFR, UE starts the corresponding drx-onDurationTimer for LP-WUS Option 1-1 and the corresponding new timer for LP-WUS Option 1-2.*

*Proposal 7: For LP-WUS Option 1-1, in case UE cannot detect all LP-WUS occasion of a LP-WUS, RAN2 assumes it is up to the network configuration for UE to determine whether to start the corresponding drx-onDurationTimer, e.g. lpwus-Wakeup.*

R2-2502912 LP-WUS in connected Ericsson discussion

*Proposal 4 In Option 1-1, when the UE is not able to monitor the LP-WUS occasion the UE should start the drx-OnDurationTimer (as if LP-WUS was detected). FFS for Option 1-2.*

*Proposal 6 If configured, the UE can signal a preferred time offset via UAI signalling.*

Dual DRX group

R2-2501769 Discussing on LP-WUS monitoring in Connected mode Xiaomi discussion Rel-19 NR\_LPWUS-Core

*Proposal 5 In CA with dual DRX groups, LP-WUS can be configured per DRX group or for all serving cells.*

*Proposal 6 LP-WUS configured in a DRX group is used to trigger PDCCH monitoring in all serving cells in the same DRX group.*

*Proposal 7 Whether UE can monitor LP-WUS for two DRX groups is up to UE capability.*

R2-2501992 Remainng issues on LP-WUS in RRC\_CONNECTED LG Electronics Inc. discussion Rel-19 NR\_LPWUS-Core

*Proposal 2. RAN2 asks RAN1 whether LP-WUS and the secondary DRX group can be configured simultaneously, different from DCP.*

MRDC

R2-2501955 Summary of [Post129][213] LP-WUS in MR-DC ZTE Corporation, Sanechips discussion Rel-19 NR\_LPWUS-Core

*Proposal 1: For NR-DC, the LP-WUS can be configured to be monitored at least on the PCell and PSCell. Wait for RAN1 progress on whether to allow LP-WUS configuration and monitoring on other Cells.*

*Proposal 2: For NR-DC, the LP-WUS in MCG and SCG can be configured independently.*

*Proposal 3: Apart from NR-DC, LP-WUS can also be supported in NE-DC, EN-DC, NGEN-DC. And proposal 1 and 2 also apply to NE-DC, EN-DC, NGEN-DC.*

R2-2501769 Discussing on LP-WUS monitoring in Connected mode Xiaomi discussion Rel-19 NR\_LPWUS-Core

R2-2501832 Procedures for LP-WUS in RRC\_CONNECTED HONOR discussion Rel-19 NR\_LPWUS-Core

R2-2501895 Discussion on LP-WUS in RRC\_CONNECTED NEC discussion Rel-19 NR\_LPWUS-Core

R2-2501961 Procedures for LP-WUS in RRC\_CONNECTED ZTE Corporation, Sanechips discussion Rel-19 NR\_LPWUS-Core

R2-2501992 Remainng issues on LP-WUS in RRC\_CONNECTED LG Electronics Inc. discussion Rel-19 NR\_LPWUS-Core

R2-2501999 Procedures for LP-WUS in RRC Connected Mode Samsung discussion Rel-19

R2-2502016 LP-WUS operation in Connected mode Tejas Network Limited discussion Rel-19

R2-2502145 Analysis on LP-WUS for RRC\_CONNECTED CATT discussion Rel-19 NR\_LPWUS-Core

R2-2502157 Discussion on LP-WUS WUR in RRC\_Connected vivo discussion Rel-19 NR\_LPWUS-Core

R2-2502310 Procedures for LP-WUS in RRC\_CONNECTED Apple discussion Rel-19 NR\_LPWUS-Core

R2-2502326 Discussion on LP-WUS in RRC\_CONNECTED OPPO discussion Rel-19 NR\_LPWUS-Core

R2-2502448 LP-WUS operation in CONNECTED state Qualcomm Incorporated discussion NR\_LPWUS-Core

R2-2502471 Further discussion on LP-WUS for RRC\_CONNECTED mode Huawei, HiSilicon discussion Rel-19 NR\_LPWUS-Core

R2-2502477 LP-WUS in CONNECTED mode InterDigital discussion Rel-19 NR\_LPWUS-Core

R2-2502598 LP-WUS in RRC Connected Mode Lenovo discussion Rel-19 NR\_LPWUS-Core

R2-2502723 Discussion on LP-WUS operation in CONNECTED mode CMCC discussion Rel-19 NR\_LPWUS-Core

R2-2502882 LP-WUS in RRC\_CONNECTED Nokia, Nokia Shanghai Bell discussion NR\_LPWUS-Core

R2-2502912 LP-WUS in connected Ericsson discussion

## 8.11 Evolution of NR duplex operation: Sub-band full duplex (SBFD)

(NR\_duplex\_evo-Core; leading WG: RAN1; REL-19; WID: [RP‑241614](https://www.3gpp.org/ftp/meetings_3gpp_sync/ran/docs/RP-241614.zip))

Time budget: 0.5 TU

Tdoc Limitation: 2 tdocs

### 8.11.1 Organizational

Incoming LS, Rapporteur input, including workplan, running CRs, etc..

Output of email discussion [Post129][217].

LS

R2-2501713 Reply LS on CSI-RS measurement with SBFD operation (R1-2501560; contact: MediaTek) RAN1 LS in Rel-19 NR\_duplex\_evo-Core To:RAN4 Cc:RAN2

* ?? Noted

R2-2501731 SBFD information exchange among gNBs for CLI mitigation (R3-250888; contact: Huawei) RAN3 LS in Rel-19 NR\_duplex\_evo-Core To:RAN2 Cc:RAN1

* ?? Noted

R2-2501738 LS on L1 CLI measurement (R4-2502632; contact: Huawei) RAN4 LS in Rel-19 NR\_duplex\_evo-Core To:RAN1 Cc:RAN2

* ?? Noted

Running CRs

*Chair: Plan is to directly note these draft CRs, and update/endorse with post meeting email discussions. Also, we will discuss and prepare open issue lists (e.g., per spec) after this meeting.*

R2-2501851 TS 38300 Running CR for SBFD CATT draftCR Rel-19 38.300 18.5.0 NR\_duplex\_evo-Core

R2-2502279 TS38.304 impacts on supporting Rel-19 SBFD NEC discussion Rel-19 NR\_duplex\_evo-Core

R2-2502549 RRC running CR for Evolution of NR duplex operation (SBFD) Huawei, HiSilicon draftCR Rel-19 38.331 18.5.1 B NR\_duplex\_evo-Core

=> Revised in R2-2502978

R2-2502978 RRC running CR for Evolution of NR duplex operation (SBFD) Huawei, HiSilicon draftCR Rel-19 38.331 18.5.1 B NR\_duplex\_evo-Core

R2-2502591 MAC running CR for Evolution of NR duplex operation: SBFD Samsung draftCR Rel-19 38.321 18.5.0 B NR\_duplex\_evo-Core

R2-2502567 Introduction of SBFD UE capabilities (Running CR) Ericsson draftCR Rel-19 38.306 18.5.0 B NR\_duplex\_evo-Core

R2-2502568 Introduction of SBFD UE capabilities (Running CR) Ericsson draftCR Rel-19 38.331 18.5.1 B NR\_duplex\_evo-Core

Output of email discussion [Post129][217]

R2-2502210 Summary of [Post129][217][SBFD] List of open issues of RRC impact Huawei, HiSilicon (Rapporteur) discussion Rel-19 NR\_duplex\_evo-Core

*[Proposal 1] On RO type signaling for CFRA, discuss/conclude on:*

*1. For CFRA triggered by BFR, the RO type is indicated in BeamFailureRecoveryConfig.*

*2. For CFRA triggered by ReconfigurationwithSync, the RO type is indicated in RACH-ConfigDedicated.*

*3. Within the corresponding RACH configuration for the additional ROs, one bit is used to indicate the RO type for CFRA.*

*4. For CFRA triggered by PDCCH order including UL early sync, RAN2 can wait/follow RAN1 agreement.*

*[Proposal 2] Discuss option issue on the UE behaviour when the signalling on the RO type and RSRP threshold are absent. Consider solution options 1) either NT indication on RO type or on RSRP threshold is madatorily present. 2) When both NT indication on RO type and RSRP threshold are absent, the SBFD-aware UE should prioritize the additional RO over the legacy RO.*

*[Proposal 3] Choose one option below on whether confirm WA "Random access procedure in SBFD symbols is supported for all the existing RACH trigger events. " and discuss related RRC impact:*

*Option 1: Confirm the WA "Random access procedure in SBFD symbols is supported for all the existing RACH trigger events. ".*

*Option 2: Random access procedure in SBFD symbols is supported for all the existing RACH trigger events except for Position SI request and SI request.*

*[Proposal 4] RAN2 waits for conclusion from RAN3 and RAN1 on NZP CSI-RS resources configuration and SBFD frequency configuration information.*

### 8.11.2 Random access in SBFD

RAN2 impacts to support SBFD operation to support random access in SBFD symbols by UEs in RRC \_CONNECTED mode and RRC\_IDLE/INACTIVE mode.

On RSRP threshold for RO type selection (e.g., configuration, related procedure, etc.)

R2-2502316 Random Access Operation of SBFD Nokia Corporation discussion Rel-19 NR\_duplex\_evo-Core

*Proposal 1: For Option 2, in case the legacy ROs and the additional ROs have the same value for one of the RACH configuration mandatory parameters, only the legacy RACH configuration will be configured with this parameter. For Option 2, in case the SBFD aware UEs did not receive a dedicated mandatory parameter in the additional RACH configuration, the SBFD-aware UEs determine this dedicated parameter from the legacy RACH configuration.*

*Proposal 2: Since the RACH configuration Option 1 is focused on reducing the latency of RA for SBFD UEs in good coverage area, we propose SBFD UEs selects the additional RO for initial access when the measured RSRP is above the RSRP threshold.*

*Proposal 3: For RACH configuration Option 2, in case the additional prachConfigurationIndex indicates long PRACH preamble formats, the UE selects the additional ROs for initial access when the measured RSRP is below the RSRP threshold.*

R2-2501860 Random Access for SBFD Operation NEC discussion Rel-19 NR\_duplex\_evo-Core

*Proposal 1: The RO type (legacy RO or additional RO) indication is provided by SIB1 for the case of CBRA. FFS whether UE specific dedicated RRC signalling is needed.*

*Proposal 2: Selection of the additional RO type below and above the configured SSB RSRP are both supported.*

*Proposal 3: The network configures when the additional RO to apply, the SSB measurement result is either below or above the configured SSB RSRP threshold.*

R2-2502000 Random access in SBFD Samsung discussion Rel-19

*Proposal 2. NW may indicate whether the SBFD RO is selected when SSB RSRP are 'below' or 'above' the configured threshold.*

*Proposal 3. For RO type selection upon initiation of CBRA for a SBFD-aware UE, if both network indications of preferred RO type and thresholds for RO type selection are not configured, UE selects the first available RO regardless of RO type (legacy RO or additional RO) among all RACH resources valid to the UE. FFS NW indication for this behavior.*

RO type selection before or after RA type selection

R2-2501849 Random Access in SBFD symbols CATT discussion Rel-19 NR\_duplex\_evo-Core

*Proposal 1: For SBFD-aware UE, the selection of RO type is suggested to be performed before the selection of the set of Random Access resources.*

*Proposal 2: For SBFD-aware UE, whether msg1/3 repetition is applied is determined based on the selected RO type.*

R2-2501878 Impacts on the random access by the evolution of duplex operation Huawei, HiSilicon discussion Rel-19 NR\_duplex\_evo-Core

*Proposal 7: Support to select RO type after the RA type selection.*

On RO type fallback

R2-2501945 Discussion on Random Access in SBFD Sharp discussion Rel-19 NR\_duplex\_evo-Core

*Proposal 1 RO-Type change procedure on RO type selection from legacy RO to additional RO in SBFD symbols is supported when the number of PRACH transmission attempts exceed a threshold.*

R2-2502967 Random Access in SBFD Lenovo discussion Rel-19 NR\_duplex\_evo-Core

*Proposal 6: Switching from the PRACH resources in non-SBFD symbols to the PRACH resources in SBFD symbols is not supported.*

RA-RNTI collision

R2-2502495 Random access for SBFD Operation Sony discussion Rel-19 NR\_duplex\_evo-Core

*Proposal 6: Simply introduce a configurable offset for the symbol index (s\_id) in the RNTI equation, and the offset is signalled in SIB1 as a part of PRACH resource configuration for SBFD-aware UEs.*

R2-2502565 SBFD RA aspects Ericsson discussion Rel-19 NR\_duplex\_evo-Core

[*Proposal 10 No need to update the RA-RNTI formula for SBFD RA configuration.*](#_Toc193978711)

R2-2501797 Discussion on RACH in SBFD Xiaomi discussion Rel-19

R2-2501849 Random Access in SBFD symbols CATT discussion Rel-19 NR\_duplex\_evo-Core

R2-2501860 Random Access for SBFD Operation NEC discussion Rel-19 NR\_duplex\_evo-Core

R2-2501878 Impacts on the random access by the evolution of duplex operation Huawei, HiSilicon discussion Rel-19 NR\_duplex\_evo-Core

R2-2501945 Discussion on Random Access in SBFD Sharp discussion Rel-19 NR\_duplex\_evo-Core

R2-2502000 Random access in SBFD Samsung discussion Rel-19

R2-2502082 Discussion on random access procedure in SBFD ZTE Corporation discussion Rel-19 NR\_duplex\_evo-Core

R2-2502316 Random Access Operation of SBFD Nokia Corporation discussion Rel-19 NR\_duplex\_evo-Core

R2-2502387 Discussion on random access procedure in SBFD vivo discussion Rel-19 NR\_duplex\_evo-Core

R2-2502394 Remaining issues of SBFD RACH procedure OPPO discussion Rel-19 NR\_duplex\_evo-Core

R2-2502495 Random access for SBFD Operation Sony discussion Rel-19 NR\_duplex\_evo-Core

R2-2502510 Remaining issues for RACH in SBFD Apple discussion Rel-19 NR\_duplex\_evo-Core

R2-2502565 SBFD RA aspects Ericsson discussion Rel-19 NR\_duplex\_evo-Core

R2-2502566 CSI-RS measurements and SBFD operation in CA and DC Ericsson discussion Rel-19 NR\_duplex\_evo-Core

R2-2502588 Views on random access for SBFD Qualcomm Incorporated discussion NR\_duplex\_evo-Core

R2-2502642 Discussion on Random Access operation in SBFD InterDigital, Inc. discussion Rel-19 NR\_duplex\_evo-Core

R2-2502706 Discussion on random access in SBFD CMCC discussion Rel-19 NR\_duplex\_evo-Core

R2-2502850 Discussion on Random Access procedure for SBFD LG Electronics Inc. discussion Rel-19 NR\_duplex\_evo-Core

R2-2502967 Random Access in SBFD Lenovo discussion Rel-19 NR\_duplex\_evo-Core

### 8.11.3 Other aspects

Other RAN2 impacts with SBFD if not covered by the previous agenda items.

R2-2502083 Discussion on multiple carrier and measurements in SBFD ZTE Corporation discussion Rel-19 NR\_duplex\_evo-Core

*Proposal 1: Support SBFD cell(s) to be configured in DC, including NR-DC, (NG)EN-DC and NE-DC.*

*Proposal 2: RAN2 supports the following:*

* In EN-DC and NGEN-DC, only the SN can configure SBFD;*

* In NE-DC, only the MN can configure SBFD;*

* In NR-DC, both the MN and the SN can configure SBFD.*

R2-2502318 Other impacts by the evolution of duplex operation Huawei, HiSilicon discussion Rel-19 NR\_duplex\_evo-Core

*Proposal 1: Send an LS to RAN1 on whether SBFD can work with DC case and if yes, whether any special handling is needed.*

R2-2501850 Discussion on other aspects of SBFD CATT discussion Rel-19 NR\_duplex\_evo-Core

R2-2501883 Other aspects of SBFD Xiaomi discussion Rel-19 NR\_duplex\_evo-Core

R2-2502083 Discussion on multiple carrier and measurements in SBFD ZTE Corporation discussion Rel-19 NR\_duplex\_evo-Core

R2-2502318 Other impacts by the evolution of duplex operation Huawei, HiSilicon discussion Rel-19 NR\_duplex\_evo-Core

R2-2502388 SBFD other aspects vivo discussion Rel-19 NR\_duplex\_evo-Core

R2-2502395 Discussion on the SBFD related measurement and BFR OPPO discussion Rel-19 NR\_duplex\_evo-Core

R2-2502589 Other aspects of SBFD Qualcomm Incorporated discussion NR\_duplex\_evo-Core

R2-2502644 Discussion on resource configuration in SBFD InterDigital, Inc. discussion Rel-19 NR\_duplex\_evo-Core

R2-2502801 Other Aspects of SBFD Samsung discussion Rel-19 NR\_duplex\_evo-Core

R2-2502851 Other aspects on SBFD LG Electronics Inc. discussion Rel-19 NR\_duplex\_evo-Core

R2-2502918 Other aspects of SBFD Nokia discussion Rel-19 NR\_duplex\_evo-Core

## 8.12 NR MIMO Phase 5

(NR\_MIMO\_Ph5-Core; leading WG: RAN1; REL-19; WID: [RP-242394](http://ftp.3gpp.org/tsg_ran/TSG_RAN/TSGR_105/Docs/RP-242394.zip))

Time budget: 0.5 TU

Tdoc Limitation: 2 tdocs

### 8.12.1 Organizational

LSs and rapporteur input, including workplan, running CRs, etc.

Output of email discussion [Post129][208].

LS

R2-2501705 LS to RAN2 on MAC impacts for Rel-19 NR MIMO Ph5 (R1-2500846; contact: Samsung) RAN1 LS in Rel-19 NR\_MIMO\_Ph5 To:RAN2

* ?? Noted

Work plan

R2-2502715 Work Plan for Rel-19 on NR MIMO Phase 5 CMCC,Samsung,MediaTek Work Plan Rel-19 NR\_MIMO\_Ph5-Core

* ?? Noted

Running CRs

*Chair: Plan is to directly note these draft CRs, and update/endorse with post meeting email discussions. Also, we will discuss and prepare open issue lists (e.g., per spec) after this meeting.*

R2-2502545 Running CR for MIMO Phase 5 Ericsson CR Rel-19 38.331 18.5.1 5306 - B NR\_MIMO\_Ph5-Core

R2-2502664 Introduction of Rel-19 MIMO Samsung draftCR Rel-19 38.321 18.5.0 B NR\_MIMO\_Ph5-Core

R2-2502716 Draft Running 38300 CR for Rel-19 MIMO Phase 5 CMCC,Samsung,MediaTek draftCR Rel-19 38.300 18.5.0 B NR\_MIMO\_Ph5-Core

=> Revised in R2-2502988

R2-2502988 Draft Running 38300 CR for Rel-19 MIMO Phase 5 CMCC draftCR Rel-19 38.300 18.5.0 B NR\_MIMO\_Ph5-Core

Output of email discussion [Post129][208]

R2-2502546 Report of [Post129][208][ MIMO\_Ph5] Ericsson discussion

=> Moved to 8.12.3

### 8.12.2 Asymmetric DL sTRP/UL mTRP

RRC/MAC aspects related to asymmetric DL sTRP/UL mTRP

Remaining aspects on MAC CE design

*Number of TCI states*

R2-2502713 Discussion on Asymmetric DL sTRP/UL mTRP CMCC discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal 1：We can add a maximum number restriction of the TCI states indicated by the PL offset MAC CE.*

R2-2502834 Discussion on remaining issues on Asymmetric DL sTRP/UL mTRP Huawei, HiSilicon discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal 1: Select one from the following two options for the new MAC CE format.*

*- Option1: Use 1-bit reserved field in the new MAC CE to indicate whether the next TCI State/PL offset exists, as shown in Figure 3.*

*- Option2: Use a new field in the new MAC CE to indicate the exact number of PL offsets, as shown in Figure 4.Proposal 2: The new MAC CE for PL offset update includes the impacted TCI State ID(s).*

*Applicable channels*

R2-2502146 Discussion on Asymmetric DL sTRP UL mTRP CATT discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal 1: The PL offset update MAC CE is at least applicable to PUCCH, PUSCH, SRS, and PDCCH-order PRACH.*

*Whether a note is need in the MAC spec*

R2-2502392 Discussion on the remaining issues of the pathloss offset update OPPO discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal 1: To clarify the NOTE 1 in 5.4.6 of TS 38.321 that the pathloss used for triggering PHR includes both the measurement result of the pathloss reference and the pathloss offset.*

R2-2501993 Consideration on Asymmetric DL sTRP/UL mTRP LG Electronics Inc. discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal 1. RAN2 consider to revert the following agreement in the last meeting.*

* RAN2 understands that if a joint/UL TCI state is configured with a PL offset, PHR trigger is based on the PL change of the PL-RS associated to the joint/UL TCI, where the PL change takes into account the PL offset. FFS whether/how to capture this.*

*WA of PL update*

R2-2502665 Discussion on Asymmetric DL sTRP/UL mTRP Samsung discussion Rel-19 NR\_MIMO\_Ph5

*Proposal 2: RAN2 assumes that UE applies the latest PL offset value received in RRC or MAC CE*

R2-2502866 Consideration on the Remaining Issues of PL Offset MAC CE ZTE Corporation discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal 1: RAN2 to discuss how to capture the working assumption that the “UE applies the latest PL offset value received in RRC or MAC CE.”*

*Proposal 1a: RAN2 to indicate the working assumption that the “UE applies the latest PL offset value received in RRC or MAC CE.” to RAN1 and to confirm with RAN1 whether this would be captured in RAN1 spec.*

On 2TA

R2-2502665 Discussion on Asymmetric DL sTRP/UL mTRP Samsung discussion Rel-19 NR\_MIMO\_Ph5

*Proposal 4: For 2TA in asymmetric DL sTRP/UL mTRP scenario, Rel-18 2TA operation is applied with the following RRC changes:*

*• remove the restriction that RRC field tag2 is configured only if coresetPoolIndex is configured with more than one value;*

*• a single n-TimingAdvanceoffset is configured, i.e., n-TimingAdvanceOffset2 is not configured for 2TA in asymmetric DL sTRP/UL mTRP scenario.*

On RACH

R2-2502834 Discussion on remaining issues on Asymmetric DL sTRP/UL mTRP Huawei, HiSilicon discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal 6: For PRACH transmission, PL offset is applied only to PDCCH-order CFRA, and no further MAC impact is needed.*

R2-2501943 Discussion on Asymmetric DL sTRP/UL mTRP Xiaomi discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal 2: When PDCCH-order indicates the pathloss offset, RSRP used for the selection of RACH procedure combines both RSRP measured for pathloss reference and pathloss offset.*

R2-2502317 RAN2 Aspects of Asymmetric DL sTRP/UL mTRP Nokia Corporation discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal 3: Discuss the impact of PL offsets on UL transmissions of RACH procedures, such as PRACH, Msg3 (for the 4-step RACH procedure) and MsgA (for the 2-step RACH procedure).*

*Proposal 4: If RAN2 determines that PL offset impacts the RACH procedures, then RAN2 should examine whether the PL offset affects the RSRP comparison in RA resource selection.*

R2-2501943 Discussion on Asymmetric DL sTRP/UL mTRP Xiaomi discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2501993 Consideration on Asymmetric DL sTRP/UL mTRP LG Electronics Inc. discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502063 Further discussion on asymmetric DL sTRP and UL mTRP SHARP Corporation discussion NR\_MIMO\_Ph5-Core

R2-2502146 Discussion on Asymmetric DL sTRP UL mTRP CATT discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502167 Discussion on MAC CE impact for asymmetric DL sTRP/UL mTRP scenarios vivo discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502304 Asymmetric DL/UL mTRP user plane impacts Ericsson discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502317 RAN2 Aspects of Asymmetric DL sTRP/UL mTRP Nokia Corporation discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502373 Discussion on PL offset Lenovo discussion Rel-19

R2-2502392 Discussion on the remaining issues of the pathloss offset update OPPO discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502496 Enhancement for Asymmetric DL sTRP/UL mTRP Sony discussion Rel-19 NR\_MIMO\_Ph5

R2-2502536 Discussion on asymmetric DL sTRP/UL mTRP China Telecommunications Corp. discussion

R2-2502543 Discussion on UL only mTRP Qualcomm Incorporated discussion

R2-2502665 Discussion on Asymmetric DL sTRP/UL mTRP Samsung discussion Rel-19 NR\_MIMO\_Ph5

R2-2502713 Discussion on Asymmetric DL sTRP/UL mTRP CMCC discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502827 Discussion on PL offset value for Asymmetric DL sTRP/UL mTRP ASUSTeK discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502834 Discussion on remaining issues on Asymmetric DL sTRP/UL mTRP Huawei, HiSilicon discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502866 Consideration on the Remaining Issues of PL Offset MAC CE ZTE Corporation discussion Rel-19 NR\_MIMO\_Ph5-Core

### 8.12.3Others

Other issues if not covered by the previous agenda items.

UE initiated beam report

*DRX*

R2-2501986 Enhancements for UE-initiated/event-driven beam management Ofinno, LLC discussion

*Proposal 1: In Mode A of UE-initiated CSI reporting, the active time of a DRX operation includes the time when a new UCI for UE-initiated beam reporting is sent on first PUCCH.*

*Proposal 2: To discuss whether UE transmits UE-initiated CSI report outside of DRX active time.*

R2-2502314 Discussion on UE-initiated Beam Reporting Apple discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal 3: There may be some impact on CDRX operation if the event triggered BR is triggered outside DRX active time.*

*UL Skipping*

R2-2502393 Clarification on the uplink grant used for the UE initiated beam report OPPO discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal: RAN2 is kindly requested to confirm the understandings that the pre-configured CG PUSCH for the UE initiated beam report in Mode-B does not carry MAC PDU.*

R2-2502666 Discussion on UE-initiated Beam Reporting and CSI enhancement Samsung discussion Rel-19 NR\_MIMO\_Ph5

*Proposal 5: The current UL skipping procedure already exclude UEI BR since it is transmitted in UCI, no additional MAC impact.*

*Proposal 6: The type-1 CG allocated for the mode-B UEI BR is transparent to MAC and excluded from MAC UL-SCH transmission procedure.*

*BWP*

R2-2502833 Enhancements for UE-initiated/event-driven beam management Huawei, HiSilicon discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal 7: The UE continues to perform CSI measurements for the UEIBM procedure when the active BWP is the dormant BWP.*

*Proposal 8: If the BWP in an SCell is a dormant BWP, the UE should not report mode-A beam measurement results. The UE cannot perform mode-B beam reporting on this BWP.*

R2-2502828 Discussion on MAC impact regarding UEI reporting ASUSTeK discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal: For UE-initiated/event-driven beam reporting Mode-B, the MAC entity shall start or restart bwp-InactivityTimer associated with the Cell where the CG-PUSCH resource of a CSI report configuration is configured if the MAC entity performs the PUCCH transmission of the CSI report configuration.*

*Coordination btw R1&R2 work*

*Chair: plan is to treat this topic in CB session*

R2-2501994 Discussion on UEI beam reporting impact LG Electronics Inc. discussion Rel-19 NR\_MIMO\_Ph5-Core

*Proposal 1. RAN2 does not discuss to capture the event evaluation procedure in MAC specification.*

R2-2502544 Discussion on UE Initiated Beam Report Qualcomm Incorporated discussion

*Proposal 1. RAN2 confirms the following working assumption:*

*“RAN2 assume the event evaluation for UE-initiated beam reporting is captured in 38.321, where the evaluation is based on indications from measurements described in a RAN1 specification. The final decision is up to RAN1, we can revisit this if R1 has a different decision.”*

*Proposal 2. If event evaluation is handled by MAC layer, it contains the following steps:*

*PHY send indication per new beam at each evaluation occasion*

*MAC decides whether the event is triggered*

*If event is triggered, MAC indicates PHY to send the UCI and a CSI report on PUSCH.*

RRC impact

R2-2502546 Report of [Post129][208][ MIMO\_Ph5] Ericsson discussion

*Proposal 1 FFS whether UEI BM parameters should be moved to CSI-MeasConfig.*

*Proposal 2 enabledCurrentBeamReport-r19 is added as an optional need-R field.*

*Proposal 3 Reuse resourcesForChannelMeasurement in CSI-ReportConfig. Clarify in the field description that for UEI BM, the new beam to be measured is either CSI-RS (nzp-CSI-RS-ResourceSetList) or SSB (csi-SSB-ResourceSetList).*

*Proposal 4 Discuss which option to use for the signaling of typeI-CBSR and typeII-CBSR and typeI-softScalingRank:*

*Option 2: (N1, N2) can be signaled as a separate parameter, and CBSR can be signaled as a CHOICE of (X1, X2) and a CHOICE of N1N2;*

*Option 3: (N1, N2) is signaled as a separate parameter, and CBSR is optionally signaled as a variable BIT STRING.*

*Proposal 5 ng-n1-n2-r19, cri-typeI-SinglePanel-ri-restriction-r19/cri-typeII-ri-restriction-r19 and cri-typeI-SinglePanel-CBSR-r19/cri-typeII-CBSR-r19 in the same way as corresponding legacy fields i.e.:*

*ng-n1-n2-r19 is defined in the same way as ng-n1-n2 in R15 typeI-multiPanel*

*cri-typeI-SinglePanel-ri-restriction-r19/cri-typeII-ri-restriction-r19 are defined in the same way as legacy RI restrictions*

*cri-typeI-SinglePanel-CBSR-r19/cri-typeII-CBSR-r19 are defined in the same way as n1-n2-codebookSubsetRestriction-r18.*

*Proposal 6 mrSelectedResources is defined as a SEQUENCE structure containing two fields with integer values from one to eight.*

*Proposal 7 delayOffsetCompensation can be located under CSI-AperiodicTriggerState and outside of CSI-AssociatedReportConfigInfo and that the parameter triggeringScheme is not needed.*

*Proposal 8 Define numberofSubbandsPO as a list (with size up to the number of subbands) where each element is an integer value within the maximum size of a BWP.*

R2-2502547 Impacts from other NR MIMO Phase 5 objectives Ericsson discussion

[*Proposal 2 CSI-typeI/II group based CBSR is defined as option 2 i.e. (N1, N2) can be signaled as a separate parameter, and CBSR can be signaled as a CHOICE of (X1, X2) and a CHOICE of N1N2.*](#_Toc193999565)

[*Proposal 3 The same structure defined for CBSR CSI-typeI/II is also used for typeI-softScalingRank.*](#_Toc193999566)

R2-2501944 Discussion on open issues of RRC spec impact Xiaomi discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2501986 Enhancements for UE-initiated/event-driven beam management Ofinno, LLC discussion

R2-2501994 Discussion on UEI beam reporting impact LG Electronics Inc. discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502065 Further discussion on UE-initiated/event-driven beam management SHARP Corporation discussion NR\_MIMO\_Ph5-Core

R2-2502147 Discussion on UE-initiated Beam Reporting and CSI Enhancement CATT discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502168 Discussion on UE-initiated/event-driven beam management vivo discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502267 Discussion on UE initiated beam reporting China Telecommunications Corp. discussion NR\_MIMO\_Ph5

R2-2502314 Discussion on UE-initiated Beam Reporting Apple discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502319 RAN2 Aspects of the NR MIMO Nokia Corporation discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502374 Discussion on UEIBR Lenovo discussion Rel-19

R2-2502393 Clarification on the uplink grant used for the UE initiated beam report OPPO discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502544 Discussion on UE Initiated Beam Report Qualcomm Incorporated discussion

R2-2502547 Impacts from other NR MIMO Phase 5 objectives Ericsson discussion

R2-2502666 Discussion on UE-initiated Beam Reporting and CSI enhancement Samsung discussion Rel-19 NR\_MIMO\_Ph5

R2-2502714 Discussion on UE-initiated/event-driven beam management CMCC discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502828 Discussion on MAC impact regarding UEI reporting ASUSTeK discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502833 Enhancements for UE-initiated/event-driven beam management Huawei, HiSilicon discussion Rel-19 NR\_MIMO\_Ph5-Core

R2-2502867 Consideration on the UEIBM and Other Issues ZTE Corporation discussion Rel-19 NR\_MIMO\_Ph5-Core

## 8.19 NR Others

Tdoc limit: 2

Specific items may be allocated to a breakout session for treatment.

Impacts from Other RAN WGs and TSGs that has no separate TU budget in RAN2. LS ins for Rel-19 specific WIs/SIs that has no RAN WI.

Additional tdocs on top of limit can be allowed for co-sourced contribution with 3 or more companies

Number of UEs in RRC\_INACTIVE with data transmission

R2-2501758 Reply to RAN2 LS on Number of UEs in RRC\_INACTIVE state with data transmission (S5-250827; contact: China Telecom) SA5 LS in Rel-19 PM\_KPI\_5G\_Ph4 To:RAN2 Cc:RAN3

* ?? Noted

R2-2501910 Discussion on the number of SDT UEs (LS S5-250827) CATT discussion Rel-19 PM\_KPI\_5G\_Ph4

R2-2502248 Introduction of number of UEs in RRC\_INACTIVE state with data transmission [KPI\_SDT\_SA5] China Telecom, Huawei, HiSilicon, ZTE Corporation, Sanechips, CATT CR Rel-19 38.314 18.0.0 0034 - B TEI19

Support of 7Mhz channel bandwidth

R2-2501744 LS on Signalling for 7 MHz Channel Bandwidth (R4-2503017; contact: T-Mobile) RAN4 LS in Rel-19 NR\_FR1\_7MHz\_BW-Core To:RAN2 Cc:RAN3

* ?? Noted

R2-2501911 Discussion on signalling for 7 MHz Channel Bandwidth (LS R4-2503017) CATT discussion Rel-19 NR\_FR1\_7MHz\_BW-Core

R2-2502635 Discussion on 7MHz bandwidth capabilities Nokia discussion Rel-19 NR\_FR1\_7MHz\_BW-Core

R2-2502809 RAN2 impacts for 7 MHz Channel Bandwidth Huawei, HiSilicon discussion Rel-19 NR\_FR1\_7MHz\_BW-Core

R2-2502869 Consideration on Supporting 7M Channel Bandwidth ZTE Corporation discussion Rel-19 NR\_FR1\_7MHz\_BW-Core

R2-2502569 Introduction of 7MHz channel bandwidth Ericsson, T-Mobile CR Rel-17 38.306 17.12.0 1257 - B NR\_FR1\_7MHz\_BW-Core, TEI17

R2-2502570 Introduction of 7MHz channel bandwidth Ericsson, T-Mobile CR Rel-18 38.306 18.5.0 1258 - A NR\_FR1\_7MHz\_BW-Core, TEI18

R2-2502571 Introduction of 7MHz channel bandwidth Ericsson, T-Mobile CR Rel-17 38.331 17.12.0 5307 - B NR\_FR1\_7MHz\_BW-Core, TEI17

R2-2502572 Introduction of 7MHz channel bandwidth Ericsson, T-Mobile CR Rel-18 38.331 18.5.1 5308 - A NR\_FR1\_7MHz\_BW-Core, TEI18

On CSSF optimization

R2-2501739 LS on CSSF optimization for NR RRM Phase 5 (R4-2502662; contact: Apple) RAN4 LS in Rel-19 NR\_RRM\_Ph5-Core To:RAN2

* ?? Noted

R2-2501972 Discussion on CSSF optimization for NR RRM Phase 5 vivo discussion Rel-19 NR\_RRM\_Ph5-Core

R2-2502313 RAN2 impact on CSSF optimization Apple, Ericsson, CATT discussion Rel-19 NR\_RRM\_Ph5-Core

Others

R2-2501742 LS on switching periods for low-low band switching (R4-2502877; contact: AT&T) RAN4 LS in Rel-19 NR\_LBCA\_Sw-Core To:RAN1 Cc:RAN2

* ?? Noted

R2-2501760 LS on Vendor Specific Trace Record (S5-251089; contact: Ericsson) SA5 LS in Rel-19 TraceQoE\_OAM To:RAN3 Cc:RAN2

* ?? Noted

*The following documents will be treated in other breakout sessions.*

R2-2501753 Reply LS on Satellite IDs for store-and-forward operation (S2-2502450; contact: CICT Mobile, CATT) SA2 LS in Rel-19 5GSAT\_Ph3-ARC To:RAN2 Cc:RAN3

R2-2501718 Reply LS on Ku band numerology (R1-2501609; contact: Eutelsat) RAN1 LS in Rel-19 NR\_NTN\_Ku\_bands-Core To:RAN4 Cc:RAN, RAN2

R2-2501759 Reply LS on AI/ML UE sided data collection (S5-250828; contact: Intel, NEC, Huawei) SA5 LS in Rel-19 AIML\_MGT\_Ph2 To:RAN, RAN2 Cc:SA, SA2, SA3

## List of post meeting email discussions

*Template (will be deleted in the final report)*

* [AT129bis][20x][MIMOevo/LPWUS/SBFD/MIMO\_Ph5/NR\_Others] Proposals for xxxxx (xxxx)

Scope: xxx

 Intended outcome: Summary/Proposals in R2-25xxxxx for xxxx.

 Deadline: xxx

* [Post129bis][20x][MIMOevo/LPWUS/SBFD/MIMO\_Ph5/NR\_Others] xxxxx (xxxx)

Scope: xxx

Intended outcome: Summary/Proposals for xxxx

Deadline: xxx