**3GPP TSG-RAN WG4 Meeting #110bis R4-2405266
Changsha, China, 15th – 19th April, 2024**

**Title:** Topic summary for [110bis][113] NR\_3Tx-4Rx\_WI

**Source:** Moderator (OPPO)

**Agenda item:** 5.2

**Document for:** Information

# Introduction

This summary cover Tdoc submitted in this meeting under agenda 4.2.3 (3T4R maintenance) and 5.22 (3Tx basket WI). The discussions below will be split into two sections with each topic.

Topic #1: 3T4R maintenance

Topic #2: 3Tx basket WI

# Topic #1: 3T4R maintenance

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2404507 | Huawei, HiSilicon | Discussion on 3Tx SAR solution for inter-band CA with PC1.5Observation 1: For 3Tx inter-band UL CA with UL MIMO and with Tx diversity in power class 1.5, if the field of UE capability maxUplinkDutyCycle-interBandCA-PC2 is absent, the UE shall apply all requirements for the power class 1.5.Observation 2: The definition of the default state for UE capability maxUplinkDutyCycle-interBandCA-PC2 is contradicted to the case in 3Tx inter band UL CA in power class 1.5.Observation 3: To resolve the contradiction of the applicable power class for 3Tx inter-band UL CA in PC1.5 between RAN2 and RAN4, both modifying Rel-18 RAN2 spec to accommodate RAN4 design and improve RAN4 spec in sub-clause 6.2H.3.1 and 6.2L.3.1 are workable.Proposal 1: Modify UE capability maxUplinkDutyCycle-interBandCA-PC2 in Rel-18 RAN2 spec to accommodate RAN4 design for 3Tx inter-band UL CA in power class 1.5. Either to remove ‘shall work on power class regardless of UL duty cycle’, or to add ‘For PC2 band combination,’ could be workable. |
| R4-2404606 | LG Electronics | draft CR on typo correction of higherpowerlimit for EN-DC |
| R4-2405490 | E-surfing Digital | draftCR on correction of condition for 3Tx SAR solution |
| R4-2405693 | E-surfing Digital | On the mutual relationship of conditions of SAR solution for 3Tx HPUE |

## Open issues summary

### Sub-topic 1-1

**Issue 1-1-1: Default behaviour when UE capability *maxUplinkDutyCycle-interBandCA-PC2* is absent**

* Proposal1: Modify UE capability *maxUplinkDutyCycle-interBandCA-PC2* in Rel-18 RAN2 spec to accommodate RAN4 design for 3Tx inter-band UL CA in power class 1.5. Either to remove ‘shall work on power class regardless of UL duty cycle’, or to add ‘For PC2 band combination,’ could be workable. (Huawei)



* **Recommendation**:
	+ Add the clause and table titles to 38.306. Consider LS RAN2 for the changes.
* Proposal 2a: Change the mutual relationship between the UE capability *maxUplinkDutyCycle-interBandCA-PC2* and network configuration 10log10 ∑ pEMAX,c or PEMAX,CA of SAR solution, from inclusion and under inclusion status to the same level, referring to the corresponding requirements for PC2 UL CA. (E-surfing Digital)



* Proposal 2b: Improve RAN4 spec in sub-clause 6.2H.3.1 and 6.2L.3.1 to avoid the contradiction between the default state for the capability *maxUplinkDutyCycle-interBandCA-PC2* that UE shall work on power class 2 and the else state that is specified for 3Tx inter band UL CA in power class 1.5. Take the case of 3Tx inter-band UL CA with UL MIMO in PC1.5 as an example,



* **Recommendation: TBA**
	+ For proposal 2a, the change marks of shifting the sections to the left are missing, need to be kept.

## CRs

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| --- | --- | --- | --- |
| **T-doc** | **Company** | **Title** | **Recommendation** |
| R4-2404606 | LG Electronics | draft CR on typo correction of *higherpowerlimit* for EN-DC |  |
| R4-2405490 | E-surfing Digital | draftCR on correction of condition for 3Tx SAR solution |  |

# Topic #2: 3Tx basket WI

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| R4-2404992 | Samsung | TP for TR 38.880\_CA\_n26A-n77A with 3Tx |
| R4-2405180 | OPPO | Draft CR 38101-1 Clarification of MIMO and TxD capability for PC3 |
| R4-2405181 | OPPO | Draft CR 38101-3 Clarification of MIMO and TxD capability for PC3 |
| R4-2405235 | ZTE | Correct the MOP tables for 3Tx band combination |

## TPs

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| **T-doc number** | **Company** | **Title** | **Recommendation** |
| R4-2404992 | Samsung | TP for TR 38.880\_CA\_n26A-n77A with 3Tx |  |

Moderator note: below new T-docs are needed for this WI in the post meeting process.

* Big CR for 3Tx NR inter-band UL CA and EN-DC basket WI (38.101-1)
* TR 38.880 for 3Tx band combinations
* Revised WID for 3Tx NR inter-band UL CA and EN-DC basket WI

## CRs

|  |  |  |  |
| --- | --- | --- | --- |
| **T-doc number** | **Company** | **Title** | **Recommendation** |
| R4-2405180 | OPPO | Draft CR 38101-1 Clarification of MIMO and TxD capability for PC3 |  |
| R4-2405181 | OPPO | Draft CR 38101-3 Clarification of MIMO and TxD capability for PC3 |  |
| R4-2405235 | ZTE | Correct the MOP tables for 3Tx band combination |  |