**3GPP TSG-RAN Meeting #104 RP-241602**

**Shanghai, China, June 17-20, 2024**

**Title:** Moderator summary for Rel-19 RAN4 Baskets

**Agenda item:** 9.1.5

**Source:** RAN4 Chair (Huawei)

**Document for:** Report

# Introduction

This contribution summarizes the offline draft session discussions for Rel-19 RAN4 basket WIs.

# Disucssions on how to consolidate the basket WIs

The proposals from RAN4 Chair were summarized below. And the RP-240894 was endorsed in prinicple on Monday session in RAN#104 meeting. The corresonding table capturing the idea for consolication is copied below.

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| **Category** | **Rel-18 basket WIs** | | **Rel-19 basket WIs proposal** | | **TR** | **Scope** |
| EN-DC basket | 6 items | DC\_R18\_1BLTE\_1BNR\_2DL2UL (RP-241218)  DC\_R18\_2BLTE\_1BNR\_3DL2UL (RP-241246)  DC\_R18\_xBLTE\_1BNR\_yDL2UL (RP-241167)  DC\_R18\_xBLTE\_2BNR\_yDL2UL (RP-241331)  DC\_R18\_xBLTE\_yBNR\_zDL2UL (RP-241228)  DC\_R18\_xBLTE\_yBNR\_zDL3UL (N/A) | **DC\_R19\_xBLTE\_yBNR**   * Obj#1: DC\_R19\_1BLTE\_1BNR\_2DL2UL * Obj#2: DC\_R19\_xBLTE\_yBNR\_3DL2UL (x+y=3) * Obj#3: DC\_R19\_xBLTE\_yBNR\_zDLqUL (x+y>3, 3<z≤6, 2≤q≤3) * Obj#4: DC\_R19\_LTE\_NR\_SUL\_combos | 1 item | Yes  Yes  No  No | Incl. 2Tx/3Tx Incl. 2Tx/3Tx Incl. 2Tx/3Tx |
| NR CA/DC/SUL basket | 6 items | NR\_CA\_R18\_Intra (RP-241141)  NR\_CADC\_R18\_2BDL\_xBUL (RP-241227)  NR\_CADC\_R18\_3BDL\_xBUL (RP-241092)  NR\_CADC\_R18\_yBDL\_xBUL (RP-241329)  NR\_SUL\_combos\_R18 (RP-241249)  NR\_2SUL\_cell\_combos\_R18 (RP-241204) | **NR\_CADC\_SUL\_R19**   * Obj#1: NR\_CA\_R19\_Intra * Obj#2: NR\_CADC\_R19\_2BDL\_xBUL * Obj#3: NR\_CADC\_R19\_3BDL\_xBUL * Obj#4: NR\_CADC\_R19\_yBDL\_xBUL (y>3) * Obj#5: NR\_SUL\_combos\_R19 | 1 item | Yes  Yes  Yes  Yes | Incl. 2Tx/3Tx, UL-MIMO/TxD+CA  Incl. 2Tx/3Tx, 3Tx UL-MIMO/TxD+CA  Incl. 2Tx/3Tx, 3Tx UL-MIMO/TxD+CA  Incl. 2Tx/3Tx, 3Tx UL-MIMO/TxD+CA |
| LTE basket | 1 item | LTE\_CA\_R18\_xBDL\_yBUL (RP-241243) | **LTE\_CA\_R19\_xBDL\_yBUL** | 1 item | Yes |  |
| V2X/SL | 1 item | NR\_LTE\_V2X\_PC5\_combos\_R18 (N/A) | N/A |  |  |  |
| HPUE basket | 7 items | HPUE\_NR\_FR1\_TDD\_R18 (RP-241203)  HPUE\_NR\_FR1\_FDD\_R18 (RP-241321)  LTE\_NR\_HPUE\_FWVM\_R18 (RP-240944) | **HPUE\_NR\_FR1\_bands\_R19** | 4 items | Yes  Yes  Yes  Yes | PC1/1.5/2, single F/T band, PC1 for FWVM  PC1/1.5/2, single LTE, PC1 for FWVM  PC1.5/2, 2Tx/3Tx  PC1.5/2, 2Tx/3Tx |
| LTE\_NR\_HPUE\_FWVM\_R18 (RP-240944) | **HPUE\_LTE\_bands\_R19** |
| HPUE\_FR1\_DC\_LTE\_NR\_R18 (RP-241145) | **HPUE\_DC\_LTE\_NR\_R19** |
| HPUE\_NR\_FR1\_TDD\_intra\_CA\_R18 (RP-241255)  HPUE\_FR1\_TDD\_NR\_CADC\_SUL\_R18 (RP-241310)  HPUE\_FR1\_FDD\_NR\_CADC\_R18 (RP-241322) | **HPUE\_NR\_CADC\_SUL\_R19** |
| Other basket | 8 items | NR\_bands\_UL\_MIMO\_R18 (RP-241261, RP-241231/2, RP-241332)  4Rx\_NR\_bands\_R18 (RP-241229, RP-241230, RP-241048)  NR\_FDD\_bands\_R18\_redcap (N/A) | **NR\_bands\_xFeature\_R19** | 4 items | No  Yes  Yes  No | Incl. UL-MIMO, 4Rx, 8Rx, RedCap |
| DL\_intrpt\_combos\_TxSW\_R18 (RP-241311) | **DL\_intrpt\_combos\_TxSW\_R19** |
| LTE\_NR\_Simult\_RxTx\_R18 (RP-241252) | **LTE\_NR\_Simult\_RxTx\_R19** |
| NR\_bands\_R18\_BWs (RP-241176) | **NR\_bands\_R19\_BWs** |
| R18\_3Tx\_NR\_CA\_ENDC (RP-241085/6)  LTE\_bands\_R18\_M1\_M2\_NB1\_NB2 (Ericsson) |  |

According to offline discussions, the following issues need be discussed further:

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| **Issue #1: how to handle HPUE band combination WIs**   * Whether to merge HPUE EN-DC/NR-CA basket WIs into normal basket WIs (Nokia, Ericsson, AT&T) |

**Discussions:**

**Agreements:**

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| **Issue #2: How to handle 3Tx**   * How to capture 3Tx, in normal basket + HPUE basket or in HPUE basket only with fallback mode (OPPO) |

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| **Issue #3: Whether and how to handle non-block approval aspects**   * A separate objective could be added to handle band combos under none-block approval process if necessary in the same basket, e.g., NR\_CADC\_SUL\_R19 (CATT) |

In the moderator’s view, which topic within the WI will be treated in non-block approval approach could be decided in RAN4 level. And in Rel-18 all the HPUE basket WIs were treated in non-block approval manner. There seems no need to have a dedicated objective for non-block approval process in WID.

**Discussions:**

**Agreements:**

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| **Issue #4: Detailed objectives for each Rel-19 potential WIs**   * Detailed objectives are provided in the table below for discussions. |

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| **Category** | **Rel-18 basket WIs** | | **Rel-19 basket WIs proposal** | | **TR** |
| EN-DC basket | 6 items | DC\_R18\_1BLTE\_1BNR\_2DL2UL (RP-241218)  DC\_R18\_2BLTE\_1BNR\_3DL2UL (RP-241246)  DC\_R18\_xBLTE\_1BNR\_yDL2UL (RP-241167)  DC\_R18\_xBLTE\_2BNR\_yDL2UL (RP-241331)  DC\_R18\_xBLTE\_yBNR\_zDL2UL (RP-241228)  DC\_R18\_xBLTE\_yBNR\_zDL3UL (N/A) | **DC\_R19\_xBLTE\_yBNR**   * Obj#1: DC\_R19\_1BLTE\_1BNR\_2DL2UL * Obj#2: DC\_R19\_xBLTE\_yBNR\_3DL2UL (x+y=3) * Obj#3: DC\_R19\_xBLTE\_yBNR\_zDLqUL (x+y>3, 3<z≤6, 2≤q≤3) * Obj#4: DC\_R19\_LTE\_NR\_SUL\_combos | 1 item | Yes  Yes  No  No |
| NR CA/DC/SUL basket | 6 items | NR\_CA\_R18\_Intra (RP-241141)  NR\_CADC\_R18\_2BDL\_xBUL (RP-241227)  NR\_CADC\_R18\_3BDL\_xBUL (RP-241092)  NR\_CADC\_R18\_yBDL\_xBUL (RP-241329)  NR\_SUL\_combos\_R18 (RP-241249)  NR\_2SUL\_cell\_combos\_R18 (RP-241204) | **NR\_CADC\_SUL\_R19**   * Obj#1: NR\_CA\_R19\_Intra * Obj#2: NR\_CADC\_R19\_2BDL\_xBUL * Obj#3: NR\_CADC\_R19\_3BDL\_xBUL * Obj#4: NR\_CADC\_R19\_yBDL\_xBUL (y>3) * Obj#5: NR\_SUL\_combos\_R19 | 1 item | Yes  Yes  Yes  Yes |
| LTE basket | 1 item | LTE\_CA\_R18\_xBDL\_yBUL (RP-241243) | **LTE\_CA\_R19\_xBDL\_yBUL** | 1 item | Yes |
| V2X/SL | 1 item | NR\_LTE\_V2X\_PC5\_combos\_R18 (N/A) | N/A |  |  |
| HPUE basket | 7 items | HPUE\_NR\_FR1\_TDD\_R18 (RP-241203)  HPUE\_NR\_FR1\_FDD\_R18 (RP-241321)  LTE\_NR\_HPUE\_FWVM\_R18 (RP-240944) | **HPUE\_NR\_FR1\_bands\_R19**   * Obj#1: TDD band with PC1/1.5/2, PC1 for FWVM if needed, and including 2Tx/3Tx * Obj#2: FDD band with PC1/1.5/2, PC1 for FWVM if needed, and including 2Tx/3Tx | 4 items | Yes  Yes  Yes  Yes |
| LTE\_NR\_HPUE\_FWVM\_R18 (RP-240944) | **HPUE\_LTE\_bands\_R19**   * Obj: PC1/1.5/2, single LTE, PC1 for FWVM |
| HPUE\_FR1\_DC\_LTE\_NR\_R18 (RP-241145) | **HPUE\_DC\_LTE\_NR\_R19**   * Obj: follow RP-241145 |
| HPUE\_NR\_FR1\_TDD\_intra\_CA\_R18 (RP-241255)  HPUE\_FR1\_TDD\_NR\_CADC\_SUL\_R18 (RP-241310)  HPUE\_FR1\_FDD\_NR\_CADC\_R18 (RP-241322) | **HPUE\_NR\_CADC\_SUL\_R19, include 2T and 3T with HPUE [and normal PC]**   * Obj#1: Intra-band FDD or TDD HPUE * Obj#2: Inter-band combination with HPUE on TDD band with or without SUL * Obj#3: Inter-band combination with HPUE on FDD band * Obj#4: inter-band combination with HPUE both on TDD and FDD bands (PC1.5) |
| Other basket | 8 items | NR\_bands\_UL\_MIMO\_R18 (RP-241261, RP-241231/2, RP-241332)  4Rx\_NR\_bands\_R18 (RP-241229, RP-241230, RP-241048)  NR\_FDD\_bands\_R18\_redcap (N/A) | **NR\_bands\_xFeature\_R19**   * Obj#1: UL-MIMO * Obj#2: RedCap/eRedCap(?) * Obj#3: 4Rx * Other objective can be added in the future if agreeable. | 4 items | No  Yes  Yes  No |
| DL\_intrpt\_combos\_TxSW\_R18 (RP-241311) | **DL\_intrpt\_combos\_TxSW\_R19**   * Obj: follow RP-241311 |
| LTE\_NR\_Simult\_RxTx\_R18 (RP-241252) | **LTE\_NR\_Simult\_RxTx\_R19**   * Obj: follow RP-241252 |
| NR\_bands\_R18\_BWs (RP-241176) | **NR\_bands\_R19\_BWs**   * Obj: follow RP-241176 or revised RP-241176 with adding CBW for n48 |
| R18\_3Tx\_NR\_CA\_ENDC (RP-241085/6)  LTE\_bands\_R18\_M1\_M2\_NB1\_NB2 (Ericsson) |  |

**Discussions:**

**Agreements:**

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| **Issue #5**   * For potential new NR single band, now HPUE(PC2+) is considered,  perhaps PC3 can also be considered into baskets (CATT) |

The clarificaiton on the proposal would be needed.

**Discussions:**

**Agreements:**

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| **Issue #6**   * Anything else? |

# Recommended WF

The recommended WF is as follows.