**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.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **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 | YesYesNoNo | Incl. 2Tx/3TxIncl. 2Tx/3TxIncl. 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 | YesYesYesYes | Incl. 2Tx/3Tx, UL-MIMO/TxD+CAIncl. 2Tx/3Tx, 3Tx UL-MIMO/TxD+CAIncl. 2Tx/3Tx, 3Tx UL-MIMO/TxD+CAIncl. 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 | YesYesYesYes | PC1/1.5/2, single F/T band, PC1 for FWVMPC1/1.5/2, single LTE, PC1 for FWVMPC1.5/2, 2Tx/3TxPC1.5/2, 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 | NoYesYesNo | 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)
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**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 | YesYesNoNo |
| 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 | YesYesYesYes |
| 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 | YesYesYesYes |
| 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 UL FDD or TDD HPUE, intra-band DL FDD or TDD HPUE with single UL for high power
* 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 | NoYesYesNo |
| 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)
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The clarificaiton on the proposal would be needed.

**Discussions:**

**Agreements:**

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

The recommended WF is as follows.