**3GPP TSG RAN WG1 #110bis-e R1-22xxxxx**

**e-Meeting, October 10th – 19th, 2022**

**Title:** [Draft] LS on UE capability and gNB configuration for UL Tx switching across 3 or 4 bands in Rel-18

**Response to:**

**Release:** Rel-18

**Work Items:** NR\_MC\_enh-Core

**Source:** NTT DOCOMO, INC. [RAN WG1]

**To:** RAN WG2

**CC:** RAN WG4

**Contact Person:**

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**1. Overall Description:**

Based on the discussion in the RAN1#110bis-e meeting, RAN1 made following agreements and working assumptions.

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| **Proposed agreement 3.1****If Rel-18 UL Tx switching for 3 or 4 bands with dual UL is supported, UE is allowed to support only some of band pairs for concurrent UL transmission based on UE capability*** + **The supported band pair for concurrent transmission requires the support of UL CA** **on the corresponding band pair(s) by the UE**
	+ **Details on the UE capability such as how to report the support of dual UL and the supported band pair(s) for concurrent UL transmission are further discussed**
	+ **Details on the gNB configuration/indication such as how to indicate the band pair(s) UE should expect for concurrent UL transmission are further discussed**
	+ **Note: UE is also allowed to support all band pairs for concurrent transmission, and the design of Rel-18 UL Tx switching for 3 or 4 bands with dual UL does not impose any restriction**

**Proposed working assumption 5.1*** **Specify UL Tx switching schemes across up to 4 bands in Rel-18**

**Proposed working assumption 5.2*** **If Rel-18 UL Tx switching for 3 or 4 bands is supported, both Switched UL and Dual UL are supported**

**Proposed agreement 3.6*** **Confirm the following working assumption made at the RAN1#110 meeting.**

**Working Assumption*** If Rel-18 UL Tx switching is supported, following switching mechanism is considered as baseline for the Rel-18 UL Tx switching across 3 or 4 bands
	+ Alt.1: Dynamic Tx carrier switching can be across all the supported switching cases by the UE and based on the UL scheduling, i.e., via dynamic grant and/or RRC configuration for UL transmission

**Updated Proposed agreement 3.1.3*** **Ask RAN2 to consider following alternatives for UE capability reporting about the supported UL Tx switching options**
	+ **Alt.1: report {switchedUL, dualUL, both} for each band pair in the band combination**
	+ **Alt.2: report {switchedUL, dualUL, both} for the band combination and report supported band pair for concurrent transmission for the band combination**
		- **Note：If there is no report on the supported band pair(s) for concurrent transmission while the UE reports “dualUL” or “both” for the band combination, gNB may assume that the UE supports concurrent transmission on all the band pairs within the band combination**
	+ **Alt.3: report {dualUL} for each band pair in the band combination**
		- **Note: Within the band combination, the UE shall be capable of being operated in switched UL mode for all band pairs**

**Updated Proposed agreement 3.1.4*** **Ask RAN2 to consider following alternatives and specify gNB configuration**
	+ **Alt.1: configure {switchedUL, dualUL} for all serving cells (i.e., for the band combination)**
	+ **Alt.2: configure {switchedUL, dualUL} for combination(s) of serving cells (i.e., for each band pair in the band combination)**
	+ **Alt.3: configure {switchedUL, dualUL} for all serving cells (i.e., for the band combination), and configure combination(s) of serving cells (i.e., as supported serving cell pair(s) for each band pair** **in the band combination) for concurrent transmission**
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As in the last two agreements, RAN1 would like to respectfully ask RAN2 to consider listed alternatives for UE reporting and gNB configuration regarding UL Tx switching options (switched UL and dual UL) for Rel-18 UL Tx switching across 3 or 4 bands.

**2. Actions:**

**To RAN WG2**

**ACTION:**

* RAN WG1 would like to respectfully ask RAN WG2 to consider above agreements for RAN2 work on UE capability and gNB configuration for Rel-18 UL Tx switching across 3 or 4 bands.

**3. Date of Next RAN WG1 Meetings:**

TSG-RAN WG1 Meeting #111 14th November – 18th November 2022 Toulouse, FR.