**Ap3GPP TSG-RAN WG1 Meeting #119 R1-240XXXX**

**Orlando, USA, November 18-22, 2024**

**Agenda Item: 7**

**Source: Moderator (Huawei)**

**Title: Summary of discussion on skipping uplink transmission in case of BWP switching**

**Document for: Discussion and Decision**

# Introduction

This document is created to collect company views on the proposals in [1] and [2].

# Problem description

NR specification supports UE can skip UL transmission for an uplink grant if there is no data available for UE, when *skipUplinkTxDynamic* or *enhancedSkipUplinkTxDynamic-r16* is configured as true. Also, UL DCI-based BWP switching can be implemented by gNB to trigger UE changing a new active BWP quickly. Generally, gNB can rely on whether to receive a PUSCH in new BWP to judge whether the BWP switching is completed or not. However, if UL DCI triggers a BWP switching with scheduling a PUSCH in the new BWP, and skipping UL transmission is enabled simultaneously, UE may skip the PUSCH transmission if it has no data to transmit. In this case, gNB may get two understandings of UE’s active BWP without receiving UL transmission after an uplink grant indicating an active BWP switching is transmitted. The two understandings are shown as follows:

* **Understanding 1:** UE has switched to the new active BWP. The reason of no data received by gNB is that UE has received the uplink grant but there is no data to transmit.
* **Understanding 2:** UE still works on the legacy BWP. The reason of no data received by gNB is that UE misses the detection of the uplink grant.

The two understandings may cause the ambiguity of active BWP between gNB and UE.

# 1st round Discussion

## Companies’ view

**Q1: How to resolve the ambiguity** **of active BWP between gNB and UE, and why?**

**Possible solutions:**

* When skipping UL transmission is enabled, UL grant-based BWP switching is avoided.
* gNB triggers a BWP switching only when it knows UE has data to transmit, i.e., based on SR or BSR
* Skipping UL transmission is temporarily disabled when active BWP is changed by UL grant
* Others are not precluded

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| **Company** | **Which understanding?** | **Comment** |
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## Summary of 1st round discussion

To be updated.

# Conclusions

To be updated.

# References

1. R1-2410601, Discussion on skipping uplink transmission in case of BWP switching, Huawei, HiSilicon
2. R1-2410602, Correction on skipping uplink transmission in case of BWP switching, Huawei, HiSilicon

# Appendix A. TS 38.213 v17.11.0, Clause 12, Draft TP

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| 12 Bandwidth part operation < Unchanged parts are omitted >  A UE does not expect to detect a DCI format with a BWP indicator field that indicates an active DL BWP or an active UL BWP change with the corresponding time domain resource assignment field providing a slot offset value for a PDSCH reception or PUSCH transmission that is smaller than a delay required by the UE for an active DL BWP change or UL BWP change, respectively [10, TS 38.133].  If a UE detects a DCI format indicating an active UL BWP change for a cell, and if a UE is configured with *skipUplinkTxDynamic* with value *true*, the UE transmits a PUSCH indicated by that DCI with the assumption of *skipUplinkTxDynamic* value as *false*.  If a UE detects a DCI format with a BWP indicator field that indicates an active DL BWP change for a cell, the UE is not required to receive or transmit in the cell during a time duration from the end of the third symbol of a slot where the UE receives the PDCCH that includes the DCI format in a scheduling cell until the beginning of a slot indicated by the slot offset value of the time domain resource assignment field in the DCI format or determined by the slot offset value corresponding to the first PDSCH of the more than one PDSCH scheduled by the DCI format for the cell.  < Unchanged parts are omitted > |