3GPP TSG RAN WG1 #101 R1-200xxxx

e-Meeting, May 20th – June 5th, 2020

Source: Moderator (OPPO)

Title: Text Proposal for TS 38.213 in [101-e-NR-eMIMO-multiTRP-02]

Agenda Item: 7.2.6.2

Document for: Discussion and Decision

1. Introduction

Rel-16 enhancement on MIMO WID includes objectives of enhancing multi-TRP/Panel transmission with ideal and non-ideal backhaul. During the work of rel-16, designs for multiple-PDCCH based and single-PDCCH based multi-TRP/Panel transmission were discussed and specified. This document provides the Text Proposal for the agreement made for Issue #b-2 in multi-TRP email thread 2:

* The issue# b-2 to Clarify the relationship between *RepetitionNumber-r16*/*RepSchemeEnabler* and *pdsch-AggregationFactor*, and also clarify the repetitions are in *RepNum16* consecutive slots in Scheme 4.
1. Text Proposal

*Reason for changes:*

In RAN1#101 e-Meeting, we made the following agreement:

**Agreement**

* **When a UE is configured with*repetitionNumber-r16*, the UE does not expect to be configured with *AggregationFactor***
* **When a UE is configured by *repetitionSchemeConfig-r16* set to one of '*FDMSchemeA*', '*FDMSchemeB*' and '*TDMSchemeA*', the UE does not expect to be configured with AggregationFactor.**
* **Clarify that in scheme 4, PDSCH is repeated in *RepNumR16* consecutive slots**

Thus, the parameters ***repetitionNumber-r16*** and ***AggregationFactor*** are not configured simultaneously.

Summary of changes:

In TS 38.213, remove the description of “no entry in *pdsch-TimeDomainAllocationList* includes *RepNumR16* in *PDSCH-TimeDomainResourceAllocation*”.

**Specs/Sections impacted:**

TS 38.213 V16.1.0 /9.1.2

Consequences if not approved:

The UE behavior on determining $N\_{PDSCH}^{repeat}$ could be ambiguous.

The text proposal for TS 38.213 is:

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| 9.1.2 Type-1 HARQ-ACK codebook determination\*\*\* Unchanged text is omitted \*\*\*If the UE is provided *pdsch-AggregationFactor*, $N\_{PDSCH}^{repeat}$ is a value of *pdsch-AggregationFactor*; otherwise $N\_{PDSCH}^{repeat}=1$. The UE reports HARQ-ACK information for a PDSCH reception- from slot $n-N\_{PDSCH}^{repeat}+1$ to slot $n$, if $N\_{PDSCH}^{repeat}>1$, or - from slot $n-RepNumR16+1$ to slot $n$, if the Time domain resource assignment field in the DCI format scheduling the PDSCH reception indicates an entry in *pdsch-TimeDomainAllocationList* containing *RepNumR16,* or - in slot $n$, otherwise \*\*\* Unchanged text is omitted \*\*\* |

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| Company | Views and comments |
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1. Reference
2. R1-2003397 On remaining issues on M-TRP vivo
3. R1-2003469 Maintenance of multi-TRP enhancements ZTE
4. R1-2003531 Remaining issues on multi-TRP in R16 Huawei, HiSilicon
5. R1-2003627 Discussion on remaining issues of multi-TRP/panel transmission CATT
6. R1-2003660 Remaining issues on multi-TRP transmission MediaTek Inc.
7. R1-2003742 Corrections to multi-TRP Intel Corporation
8. R1-2003819 Remaining issues on multi-TRP/panel transmission Lenovo, Motorola Mobility
9. R1-2003881 On Rel.16 multi-TRP/panel transmission Samsung
10. R1-2003928 Text proposals on enhancements on multi-TRP/panel transmission LG Electronics
11. R1-2003954 Remaining issues on multi-TRP/panel transmission CMCC
12. R1-2003987 Discussion on remaining issues of multi-TRP operation Spreadtrum Communications
13. R1-2004047 Text proposals for enhancements on multi-TRP and panel Transmission OPPO
14. R1-2004229 Remaining issues for Multi-TRP enhancement Apple
15. R1-2004265 Maintenance of Rel-16 Multi-TRP operation Nokia, Nokia Shanghai Bell
16. R1-2004311 Remaining issues on multi-TRP transmission NEC
17. R1-2004395 Remaining issues on multi-TRP/panel transmission NTT DOCOMO, INC
18. R1-2004432 Remaining issues on Multi-TRP/Panel Transmission Ericsson
19. R1-2004463 Multi-TRP Enhancements Qualcomm Incorporated
20. R1-2004592 Clarification on Multi-TRP URLLC Scheme 4 Convida Wireless
21. R1-2004719 FL summary #2 for Multi-TRP/Panel Transmission Moderator (OPPO)