**3GPP TSG RAN WG1 #100bis R1-200xxxx**

**e-Meeting, April 20th – 30th, 2020**

Source: moderator (vivo)

Title: Feature lead summary on ULFPTx-02

Agenda Item: 7.2.6.4

Document for: Discussion and Decision

1. Introduction

Following email thread is assigned for discussion:

[100b-e-NR-eMIMO-ULFPTx-02] Email discussion on Issue #3 in R1-2002746: UE feature/capability related issues. By 4/24 and corresponding TP (if any) by 4/30– Rakesh (vivo)

1. Discussion on issue 3[1]
	1. Issue 3: UE feature/capability related issues
		1. TP on applicability of Rel-16 UL full power TX and codebooksubset

**TS 38.214**

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6.1.1.1 Codebook based UL transmission

<Omitted>

When multiple SRS resources are configured by *SRS-ResourceSet* with *usage* set to 'codebook', the UE shall expect that higher layer parameters *nrofSRS-Ports* in *SRS-Resource* in *SRS-ResourceSet* shall be configured with the same value for all these SRS resources.

A UE reporting its UE capability of ''fullyAndPartialAndNonCoherent' transmission shall not expect to be configured with *ULFPTx or ULFPTxModes*.

A UE can be configured to operate in either Mode 1 or Mode 2 upon reception of the higher layer parameters *ULFPTx=’enabled’* and *ULFPTxModes*.

<Omitted>

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**TS 38.213**

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7.1 Physical uplink shared channel

For a PUSCH transmission on active UL BWP , as described in Clause 12, of carrier  of serving cell , a UE first calculates a linear value  of the transmit power , with parameters as defined in Clause 7.1.1. For a PUSCH transmission scheduled by a DCI format or configured by *ConfiguredGrantConfig* or *semiPersistentOnPUSCH*, if *txConfig* in *PUSCH-Config* is set to 'codebook',

- if ULFPTx in PUSCH-Config is provided and the UE reports its UE capability as 'nonCoherent' or 'partialAndNonCoherent' ~~codebookSubset in PUSCH-Config is set to nonCoherent or partialAndNonCoherent~~, the UE scales $\hat{P}\_{PUSCH,b,f,c}(i,j,q\_{d},l)$ by $s$ where:

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Please provide your views/comments in the table below

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| --- | --- |
| Company/organization | comments |
| OPPO | we have some comments on the above TPs1. TP should be updated to align with TS 38.331

ul-FullPowerTransmission-r16 ENUMERATED {fullpower, fullpowerMode1, fullpoweMode2} OPTIONAL -- Need R1. If TP for TS 38.214 is approved, the TP for TS 38.213 is not needed since full coherent UE cannot be configured with “ul-FullPowerTransmission-r16”
2. The TP does not use the latest version v16.1.0

Thus we suggest to revise the TP for TS 38.214 as follows (and TP for TS 38.213 is not needed)**TS 38.214**---------------------------------------------------------------------------------6.1.1.1 Codebook based UL transmission<Omitted>Except when higher layer parameter *ULFPTxModes* is set to 'Mode 2', when multiple SRS resources are configured by *SRS-ResourceSet* with *usage* set to 'codebook', the UE shall expect that higher layer parameters *nrofSRS-Ports* in *SRS-Resource* in *SRS-ResourceSet* shall be configured with the same value for all these SRS resources.A UE reporting its UE capability of ''fullyAndPartialAndNonCoherent' transmission shall not expect to be configured with *~~ULFPTx or ULFPTxModes~~* *ul-FullPowerTransmission-r16* When higher layer parameter *ULFPTxModes* is set to 'Mode 2', <Omitted>--------------------------------------------------------------------------------- |
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* + 1. Additional UE capability signaling, e.g. mode0, mode1, mode2, TPMI in mode2
		- new UL codebook set(s) when the UE reports mode1 as its capability
		- TPMI group signalling when the UE reports mode2 as its capability
		- Separate capability signalling for mode0, mode1, and mode2
		- Multiple modes signalling is *not supported*, e.g., mode1AndMode2

Please provide your views/comments in the table below

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| Company/organization | comments |
| OPPO | Topic 1: not neededTopic 2: okTopic 4: Not support signaling of multiple modes for a UE |
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# References

[1] R1-2002746, Summary of prep email discussion on ULFPTx, RAN1#100b-e