**3GPP TSG RAN WG1 #114** **R1-230xxxx**

**Toulouse, France, August 21st – 25th, 2023**

**Agenda item:** 9.17

**Source:** Samsung

**Title:** Summary of email discussions [114-R18-38.213-NR\_NTN\_enh]

**Document for:** Discussion and decision

# Introduction

The purpose of this document is to collect inputs/comments on the draft CR for TS 38.213 [draftCR\_38213 NTN](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_114/Inbox/drafts/9.17%28Other%29/%5B38.213%20draft%20CRs%5D/NR_NTN_enh/R1-230xxxx%20draftCR_38213%20NTN.docx) on the introduction of NR NTN enhancements. If a comment on a particular aspect has been made by another company, please do not repeat it until, if needed, after a response.

The first checkpoint is on September 5, UTC 13:00.

# First Round Discussion

Please provide your comments on the draft CR for TS 38.213 [draftCR\_38213 NTN](https://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_114/Inbox/drafts/9.17%28Other%29/%5B38.213%20draft%20CRs%5D/NR_NTN_enh/R1-230xxxx%20draftCR_38213%20NTN.docx).

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| Company | Comments |
| DCM | We think that according to the following agreement reached in this meeting, “a capability or a request” should be “a capability” only.

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| AgreementThe working assumption at the RAN1#112 meeting is superseded by the following agreement:For PUCCH repetition for Msg4 HARQ-ACK,* A RSRP threshold can be configured via SIB when the number of repetitions is configured by SIB.
	+ If the RSRP threshold is configured,
		- UE capable of PUCCH repetition for Msg4 HARQ-ACK reports the capability of PUCCH repetition for Msg4 HARQ-ACK only if measured RSRP is lower than the configured RSRP threshold.
	+ If the RSRP threshold is not configured,
		- UE capable of PUCCH repetition for Msg4 HARQ-ACK reports the capability of PUCCH repetition for Msg4 HARQ-ACK
	+ Alt B: New RSRP threshold is introduced.
		- Note: the same value between the new RSRP threshold and the RSRP threshold for R17 Msg3 repetition can be configured by gNB implementation.
		- The range of RSRP threshold for PUCCH repetition for Msg4 HARQ-ACK is the same as the range of the RSRP threshold for R17 Msg3 repetition.
			* FFS signaling details, e.g. whether RSRP threshold for PUCCH repetition for Msg4 HARQ-ACK is signaled as a relative or absolute value
* Note: UE incapable of PUCCH repetition for Msg4 HARQ-ACK transmits neither repetition request nor capability report
* Note 2: RAN1 considers that there is no difference between “repetition request” and “capability report” in earlier RAN1 agreements
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Thus, an update is suggested as below.

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| 9.2.6 PUCCH repetition procedureA UE that does not have dedicated PUCCH resource configuration and indicates a capability ~~or a request~~ to transmit with repetitions a PUCCH with HARQ-ACK information [11, TS 38.321], determines a number of $N\_{PUCCH}^{repeat}$ slots for repetitions of a PUCCH transmission with HARQ-ACK information based on an indication by *numberOfPUCCHforMsg4HARQACK-RepetitionsList*. If *numberOfPUCCHforMsg4HARQACK-RepetitionsList* provides more than one values, the DAI field in a DCI format 1\_0 with CRC scrambled by a TC-RNTI scheduling a PDSCH reception that includes a UE contention resolution identity indicates $N\_{PUCCH}^{repeat}$ from the more than one values. The UE transmits each repetition of the PUCCH using frequency hopping as described in Clause 9.2.1. … |

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