**3GPP TSG RAN#89e RP-20xxxx**

**e-Meeting, September 14th – 18th, 2020**

**Agenda item:**

**Source:** 3GPP TSG RAN1 Chairman

**Title:** Handling overlapped objectives in Rel-17 RAN1 items

**Document for:** Discussion/Decision

# Introduction

In this document, we will provide a summary on how to handle overlapped objectives in Rel-17 RAN1 items based on the following two contributions:

* RP-201658 Handling of overlapping discussion across WI/Sis vivo
* RP-201760 On overlapping focus of PUCCH repetition enhancements across Rel-17 SI/WIs Nokia, Nokia SB

# Proposals

In total, there are three proposals presented in RP-201658 and RP-201760, which are discussed below.

## HARQ-ACK on PUCCH

As proposed in RP-201658:

* ***Proposal 1:*** *To treat the following enhancements for HARQ-ACK on PUCCH in URLLC/IIOT\_enh WI and do not consider them further in Cov\_enh item.*
	+ *UCI size reduction for HARQ-ACK on PUCCH*
	+ *Rel-16 PUSCH-repetition-Type-B like PUCCH repetition*
	+ *Short/mini-slot/sub-slot based PUCCH repetition*
	+ *Dynamic PUCCH repetition factor indication*
	+ *Power control enhancements for PUCCH carrying HARQ-ACK*

In RP-201760, it was observed that:

* *Observation: Discussions & studies on PUCCH repetition enhancements are, besides in the Rel-17 IIoT & URLLC Enhancements WI, also taking place in the Rel-17 SI on Coverage Enhancements and in the M-TRP enhancements in the Rel-17 MIMO WI with the same proposed enhancements. Overlapping discussions and potentially the specification of competing solutions in more than one Rel-17 WI is clearly inefficient and should be prevented.*

Conseqeuently, it was proposed that:

* ***Proposal 2:*** *Studies on TDMed PUCCH (i.e. PUCCH repetition) to be continued for the multi-TRP case based on RAN1#102-e agreements in the Rel-17 feMIMO WI, with the aim that if specified to also support the special case of having only a single TRP.*
	+ *Related studies and discussions in the Rel-17 IIoT & URLLC WI including sub-slot or sub-slot type of PUCCH repetition, PUCCH TPC enhancements as well as support of dynamic repetition indication and repetition of all (incl. short) PUCCH formats are to be minimized.*
	+ *Studies on the same techniques in the ongoing Rel-17 Coverage Enhancements SI are to be minimized for the rest of the SI phase or at least RAN should take this into account when defining the objectives of the follow-up Coverage Enhancements WI in one of the next RAN meetings.*

Questions:

* Do you agree with proposal 1 and proposal 2?
	+ Please elaborate the detailed thoughts
* Any other thoughts?

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| **Company** | **Views** |
| Nokia, NSB | We support proposal 2 for the reasons described in RP-201670 (Nokia).  |
| FUTUREWEI | Between proposal 1 and 2, we prefer proposal 1. Furthermore, in FeMIMO WI, the related work should be on mTRP perspective and not on generic PUCCH repetition work. |

Propoals:

* TBD

## Coverage enhancement features involving Rel-17 RedCap and CovEnh SIs

As proposed in RP-201658:

* ***Proposal 3****: we suggest the following work split between Cov\_enh and RedCap item for coverage enhancement features*
	+ *During “coverage problem” identification process, to carry on coverage study for bottleneck channel identification for normal UE and RedCap UE individually together with the target for improvement*
	+ *During the “technical enhancement” process*
		- *To discuss UL channel relate enhancement techniques (if any) in Cov\_enh for both normal UE and RedCap UEs*
		- *To discuss DL channel related enhancement techniques (if any) in RedCap for both normal UE (if applicable) and RedCap UEs.*

Questions:

* Do you agree with proposal 3?
	+ Please elaborate the detailed thoughts
* Any other thoughts?

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| **Company** | **Views** |
| Nokia, NSB | Given that those are both SIs with a similar timeline, we do not see significant concern on the related coverage studies, as to our understanding the underlying assumptions for those UEs are different enough to justify separate studies. Potential sinergies can be further considered when moving to a WID phase.  |
| FUTUREWEI | The proposal is not needed at this point. We can discuss how to align the normative work when converting them to WIs. |

Propoals:

* TBD

## Other Aspects

Questions:

* Any other thoughts?

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| **Company** | **Views** |
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Propoals:

* TBD

# Conclusion

Based on the email discussion, the following are proposed:

* TBD

# References

RP-201658 Handling of overlapping discussion across WI/Sis vivo

RP-201760 On overlapping focus of PUCCH repetition enhancements across Rel-17 SI/WIs Nokia, Nokia SB