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Views on Rel-18 Coverage Enhancement

RWS-210220

Agenda Item: 4.1
3GPP TSG Rel-18 Workshop
Electronic Meeting, June 28 - July 2, 2021

Rel-17 coverage enhancement

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- In Rel-17 SI, the following UL channels were identified as bottleneck channels: [1]
  - PUSCH for eMBB
  - PUSCH for VoIP
  - PUSCH of msg3
  - PUCCH format 1
  - PUCCH format 3 with 11 bits
  - PUCCH format 3 with 22 bits
  - PRACH format B4
- In the above, only PRACH B4 is not included in the scope of Rel-17 coverage enhancement

[1] TR38.830 v17.0.0 Study on NR coverage enhancements

Target in Rel-18 coverage enhancement

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- Remaining channels to be addressed would be
  - ➢PRACH format B4

- Further, it has been discussed that PUCCH format 2 requires more coverage for FR2
  - ➢It is used for the following cases:
    - ✓Beam cycling for each short PUCCH
    - ✓PUCCH transmissions in special slots

- Therefore, PUCCH format 2 should be also enhanced in Rel-18

Summary

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- Potential techniques
  - ➢PRACH format B4
    - ✓Support for repetition
  - ➢PUCCH format 2
    - ✓Sequence-based PUCCH (e.g., Zadoff-Chu sequence)

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