3GPP TSG RAN Meeting #95-e

Electronic Meeting, March 17th - 23rd, 2022

Agenda Item 9.1.4.1

RP-220537

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Views on FR1 RF Enhancements

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Introduction

- RF Enhancement work should continue in Rel.18 to enable new features/capabilities for NR evolution
- Following slides present the items which should be included the FR1 RF Enhancements WI for Rel.18

Requirements for 8Rx in FR1

Expanding high-end device capabilities in FR1

- We see market demand for 8Rx performance requirements for different form factors (mainly FWA)
- Proposal to introduce requirements for 8Rx
  - define support for bands **n41, n77, n78 and n79**
    - Other bands can be added any time based on proposals from operators
- Proposed objectives are in-line with the 8Rx work for LTE (see RP-202630)
  - UE RF requirements – Definition of REFSENS (based on LTE methodology)
  - Demod and CSI requirements
    - Maximum rank, from the set {4, 6, 8}, to be determined in the WID definition phase
  - No impact to RRM requirements
    - If needed, changes to RLM/BFD testing methodology to allow RLM based on 8Rx can be introduced (same handling as 4Rx)

MSD Improvements for CA/EN-DC

- RAN4 has discused the feasibility and framework of introducing an improved MSD capability for some band combinations (see R4-213006)
- It was agreed that this work would be stopped in Rel.17 and continued in Rel.18
- Improving the performance of CA/EN-DC combinations is very important to enable better NR system throughput/capacity

6Rx For Smartphones

- 8Rx would be very challenging to support in a smartphone form factor, however, 6Rx could be feasible
  - Smartphones have many different sizes, larger size devices could be suitable to contain additional hardware
- 6Rx could increase the peak throughput and system capacity
- Work would be mostly a subset of the work on 8Rx, hence, the additional specification work is relatively low
- The work could be started with a study item phase to consider the implementation feasibility

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Thank you

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