

3GPP TSG RAN Meeting #96

RP-221274

Electronic Meeting, June 06-09, 2022

Discussion for clarification on Rel-18 Multi-Rx scope RF and RRM

Source: vivo

Document for: Discussion & Decision

Agenda Item: 9.3.4.4

RF scope discussion

- In RAN #95, WI: Requirement for NR FR2 multi-Rx chain DL reception has been approved in RP-220974
- For RF part, the following note requires further discussions

Specify RF requirements, mainly spherical coverage requirements, for devices with simultaneous reception from different directions with different QCL TypeD RSs

- *revisit in RAN#96: RAN4 shall specify the multi-panel spherical coverage requirements based on the directions that are within top N%-tile (N% = 50% for PC3)*

In RAN#95-e discussion, the bullet for spherical coverage was added mainly for reducing RAN4 efforts on spherical coverage percentile, which is highly related to different UE implementations, summarized in RP-220973.

- To align with previous PC3 agreements, 50% percentile was tentatively selected.

However, there are following issues may need further considerations:

- The definition of spherical coverage for multi-direction beams is not clear
- The percentile value should be further based on clear deriving process of CDF
- The core requirement definition also depends on testability discussions

RF scope discussion

- Performance criteria for multi-Rx spherical coverage is a new area in RAN4, which may need more discussions with simulation and analysis. RAN plenary would not be the best place to define the detailed spherical coverage definition.
- In addition, the percentile value for the CDF is highly dependent on how to derive the CDF curve, so it is still questionable and premature to fix a value as 50%
- There are different understandings of restrictions related to 50%
 - Unlike inter-band CA, “common” spherical coverage is difficult to be defined and verified for multi-Rx.
 - It is still unclear how to define the “spherical coverage” for multi-panel cases, thus 50% percentile restriction on top of unclear spherical coverage definition is reasonable or not, can not be confirmed.
 - These questions are heavily depend on the details of requirements and test methodology and are more suitable for a WG level discussion
- In short, we propose to further discuss the performance criteria for multi-Rx spherical coverage in RAN4

Proposal: Remove the notes in WID and leave the detailed spherical coverage requirements discussions in RAN4 in WI phase.

RRM scope discussion

- According to moderator summary RP-220973,

- 4.5.2.2 RRM part
 - The views are split regarding the handling of L3 measurements, however, most companies agree that only impact coming from changes on L1-RSRP should be considered and some small changes were proposed

- The only controversial part is the handling of L3 measurements, which needs further study considering following online discussion in RAN#95-e.

- **Proposal 1: Update objectives of RRM part as below.**

- Introduce necessary requirement(s) for enhanced FR2 UEs with simultaneous DL reception from different directions with different QCL TypeD RSs on a single component carrier
 - Enhanced RRM requirements:
 - The following requirements should be ~~studied and~~ specified if necessary:
 - L1-RSRP measurement delay
 - ~~L3 measurement delay (both cell detection delay and measurement period can be considered)~~
 - ~~» The starting point is the enhancements related to L1-RSRP measurement enhancements~~
 - RLM and BFD/CBD requirements
 - Scheduling/measurement restrictions
 - TCI state switching delay with dual TCI
 - Receive timing difference between different directions (different QCL Type D RSs)
 - The following requirements should be studied and specified if necessary:
 - L3 measurement delay (both cell detection delay and measurement period can be considered)
 - » The starting point is the enhancements related to L1-RSRP measurement enhancements

NOTE:

- The case of single TCI is handled as a second priority. Additional aspects related to single TCI can be further revisited.

THANK YOU.

谢谢。