**3GPP TSG-RAN5 Meeting #95-e Draft\_R5-2223635  
Electronic Meeting, 9th May – 20th May 2022**

**Title:** LS on *ModifiedMPR-Behaviour* clarification for different power classes

**Response to:**

**Release:** Release 16

**Work Item:** NR\_RF\_FR2\_req\_enh-UEConTest

**Source:** TSG RAN WG5

**To:** TSG RAN WG4

**Cc:** N/A

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**Attachments:**

**1. Overall Description:**

RAN5 has been discussing the introduction of Rel-16 FR2 MPR enhancements added in NR\_RF\_FR2\_req\_enh work item. Analysing Rel-16 core requirements, the following observations were made:

* Power class 2, 4 and 5 FR2 MPR requirements refer to power class 3 FR2 MPR core requirement.
* FR2 MPR enhancements requirements were added to power class 3 FR2 MPR core requirement (extension of Inner Region 1 and additional granularity in MPRnarrow requirements).
* Annex H.1 contains the definitions of the bits in the field *modifiedMPR-Behavior* indicated per supported NR band in the IE RF-Parameters by a UE supporting an MPR or A-MPR modified in a given version of this specification.
  + Bit 0 for each band is defined for FR2 power class 3 MPR as defined in clause 6.2.2.3 of 38.101-2 v16.2.0.
  + This annex was firstly added in [1].
* *modifiedMPR-Behaviour* is defined per band in 38.306.
* *modifiedMPR-Behaviour* is used either in FR1 and in FR2
* *modifiedMPR-Behaviour* bits have different meaning in FR1 (Annex L.1 in 38.101-1) and in FR2 (Annex H.1 in 38.101-2)
* The only reference to *modifiedMPR-Behaviour* in 38.307 in Annex B.4.1 refers to FR1.
* *modifiedMPR-Behaviour* is defined in Rel-15 signalling as BIT STRING (SIZE (8)) in 38.331 [11].
* *modifiedMPR-Behaviour* indicates support of MPR defined in Rel16 and can be used by Rel15 UE to optionally indicate support of MPR from a later release. It is however not clear what is expected from a Rel16 UE and forward.

When defining test specification for FR2 MPR enhancements, RAN5 faced some concerns as listed below:

1. For Rel-15 PC3 UE, is the MPR as defined in 38.101-2 v16.2.0 applicable if the UE supports *modifiedMPR-Behaviour* bit 0 UE capability?
2. For Rel-15 PC2 and 4 UEs, is *modifiedMPR-Behaviour* bit 0 capability applicable?
3. For Rel-16 PC3 UE, is the MPR as defined in 38.101-2 v16.2.0 mandatory or optional? Also, is the Rel-16 UE expected to signal *modifiedMPR-Behaviour* bit 0=true?
4. For Rel-16 PC2, 4 and 5 UEs, is the PC3 MPR as defined in 38.101-2 v16.2.0 applicable? Also, is *modifiedMPR-Behaviour* bit 0 capability applicable?
5. Is any kind of Rel-16 UE supposed to support MPR as defined in 38.101-2 version v16.11.0?
6. For Rel-17 PC3 UE, is the MPR as defined in 38.101-2 v16.2.0 applicable if the UE signals *modifiedMPR-Behaviour* bit 0=true?
7. For Rel-17 PC3 UE, what is the MPR requirement if the UE signals *modifiedMPR-Behaviour* bit 0=false?

**2. Actions:**

**To RAN4 group.**

**ACTION:** RAN5 respectfully requests RAN4 group to provide feedback on the questions raised above.

**3. Date of Next TSG-RAN WG5 Meetings:**

TSG-RAN5 Meeting#96 15th – 26th August 2022 Online

TSG-RAN5 Meeting#97 14h – 18th November 2022 Canada

References

1. R4-2009169, “Indication of modified MPR behaviour for FR2 MPR enhancement”, Nokia, Nokia Shanghai Bell, RAN4#95, May 2020