

3GPP TSG RAN#101

Bangalore, India, September 11th – 15th, 2023

RP-232315

Agenda Item 9.3.2.9

was RP-231319, RP-230642

On 4Rx to 2Rx relaxation for XR devices

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Background and Discussion

- A proposal was made in [1] to allow some “form-factor limited” XR devices that require “high demanding XR services” to be exempt from the mandated requirement for 4Rx ports for bands n7, n38, n41, n77, n78, n79
- A set of questions were agreed at RAN#98-e in [2] to better characterize how to enable such an XR device type supporting such exemption while taking into account concerns raised:
 - On whether further relaxations such as “BW reduction” are required, we see no clear rationale for further relaxations, so no relaxation of the 100MHz channel BW mandate and no CA restriction for this device type due to their need to support high-end applications
- It was also raised (by more than one company) during the NWM discussion that led to [2] at RAN#98-e that *such a new 3GPP UE type should be clearly distinguished from existing 3GPP UE types (especially RedCap), because creating yet another 3GPP RedCap capability could cause industry confusion about RedCap*
 - This means that “Technical capability”, “3GPP naming”, “Identifying itself to networks” need to be differentiated from especially RedCap
- Hence, on the question of “identifying this UE to NW”, we believe it to be feasible to use a mechanism based on that of “vehicular” UE
 - but propose to specify an additional new Rel-18 UE capability to enable UE type to be identified explicitly to RAN

Proposal

To address the points in the previous slide, we propose to include the following aspects in a new objective to the XR WID:

- *[RAN4, RAN2] Specify mechanism to support new device type (not "RedCap UE", not "Vehicular UE", not R15/general UE capability):*
 - that is only mandated to support 2Rx antenna ports and 2 DL MIMO layers in the NR bands in which 4Rx antenna ports is mandated in legacy UE, with no further relaxations.
 - No relaxation to 100MHz mandated channel bandwidth, and CA support not restricted.
 - The UE shall identify itself to NW using:
 - Definition of new UE type in TS38.101 with 4Rx exception; and associated new Rel-18 UE capability IE defined in TS38.306, and signalled to the network being accessed
 - New SPID value defined in TS38.300 (similar to vehicular UE approach)

References

- [1] RP-223208, Way forward on the support of 2Rx for XR device for Rel-18 XR WI, (*Apple, ABS, APT, ASR, CATT, FGI, Google, HONOR, Lenovo, Meta, New H3C, Qualcomm, Samsung, Tencent, Verizon, vivo, Xiaomi*)
- [2] RP-223504, Summary and Way Forward on XR, (*Moderator - Nokia*)