3GPP TSG RAN#102
Edinburgh, Scotland, December 11th-15th, 2023

RP-233264
Agenda Item 9.3.2.9

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
- Latest status can be found in [2].
- While the definition of the new device type is progressing, the remaining aspect is how to inform the network that the present device is the new device type with 2Rx antennas.
- While the SPID concept adopted for “vehicular UE” can be extended for “form-factor limited XR devices, we believe that an additional UE capability report direct to RAN would provide extra insurance that the RAN serving this device obtains the information about the device type.

Proposal

- To appropriately support 2Rx devices for high end XR applications, we propose to define a new UE capability signalling from UE to RAN to inform the network that the UE is of the “High-end XR form-factor limited” device type (once defined by RAN4).
- We also propose to agree the following as the objective for specification work:
  - “[RAN4, RAN2] Specify mechanism to support new device type (not "RedCap UE", not "Vehicular UE", not R15/general UE capability):
    - that is 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 or capability reduction vs R15 (i.e. general) UE required capabilities
    - The UE shall identify itself to network using the same mechanism as for "vehicular UE" with appropriate <u>new</u> "device type" definition (38.101-1), but also with <u>new</u> UE capability IE and <u>new</u> SPID value (38.306/38.300) defined.”

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-232657, Summary and Way Forward on XR, *(Moderator - Nokia)*