**3GPP TSG-RAN WG2 Meeting #112-e R2-2011065**

**Online meeting, 2nd - 13th November, 2020**

**Title: [DRAFT]** **Reply** LS on questions to RAN WGs on dual Radio UE (2Rx/2Tx or 2Rx/1Tx) support for simultaneous communication with both SNPN and PLMN

**Response to:** S2-2007827

**Release:** Release 17

**Work Item:** FS\_eNPN

**Source:** Futurewei [TSG RAN WG2]

**To:** TSG SA2

**Cc:** TSG RAN WG4

**Contact Person:**

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**Attachments:** n/a

**1. Overall Description:**

RAN2 would like to thank SA2 for the LS in S2-2007827 (R2-2010691). RAN2 has discussed support for simultaneous communication with both SNPN and PLMN for the following dual Radio UE architectures:

1. Dual radio UE using independent Rx/Tx per network (SNPN and PLMN)
2. Dual radio UE using independent Rx per network (SNPN and PLMN) and a single Tx for one of the two networks only, e.g. the SNPN (whereby UL user-plane and NAS traffic for the other network is tunnelled via the first network using existing IP-based OTT mechanisms)

RAN2 has the following feedback on SA2’s questions:

Q1: is a) technically feasible without any new Access-Stratum mechanism and standardization?

A1: For scenario a) dual radio UE using independent Rx/Tx per network, RAN2 concluded that it is technically feasible for the UE to simultaneous communicate with both SNPN and PLMN without new AS mechanisms and standardization.

This assumes that the UE’s RF frontend is able to operate independently on the carrier frequencies/bands in use in each network, without this operation resulting in significant interference between the two radios. This is done by UE implementation without requiring standard impact.

Q2: is b) technically feasible taking into account the uplink Access Stratum activity in each network?

A2: For scenario b) dual radio UE using independent Rx per network (SNPN and PLMN) and a single Tx for one of the two networks only, RAN2 reiterated that if the UE’s RRC state is RRC\_CONNECTED in one network (e.g. PLMN) then its RRC state cannot also be RRC\_CONNECTED in the other network (e.g. SNPN). The UE may be in RRC\_IDLE or RRC\_INACTIVE state with respect to the other network (e.g. SNPN), which would enable it to only receive broadcast traffic via the air interface of this second network.

Q3: whether in case of b) is it feasible to achieve a very low PER for **low latency multicast traffic** without sending access stratum feedback to the network (e.g. the SNPN RAN)?

A3: RAN working groups are currently considering two delivery modes for MBS: One is used by UEs in RRC\_CONNECTED to support high QoS services, and the other to support low QoS services where the UE can also receive data in RRC\_INACTIVE/RRC\_IDLE.

To receive multicast traffic RAN2 has agreed that the UE should use the high QoS mode (reliability, latency), and AS feedback is normally required to support reliable reception of multicast traffic, i.e. the UE needs to be in RRC\_CONNECTED mode.

To receive broadcast traffic, the UE can only use the low QoS mode, for which AS feedback is not necessary . Whether the low QoS mode is applicable to multicast sessions has not been agreed by RAN2.

To summarize, it cannot be guaranteed that UEs can achieve a very low PER for **low latency multicast traffic** without sending access stratum feedback to the network.

**2. Actions:**

**ACTION:** RAN2 respectfully asks SA2 to take into account RAN2 feedback to the questions raised in LS S2-2007827.

**3. Date of Next TSG-RAN WG2 Meetings:**

3GPP RAN2#113-e 25th of Jan – 5th of Feb 2021 Electronic Meeting

3GPP RAN2#113-bis-e 12th of April – 20th of April 2021 Electronic Meeting