**3GPP TSG RAN WG2 Meeting #117-e R2-220xxxx**

**Online, 21 Feb– 03 Mar, 2022**

**Title: [Draft]** LS on EPS fallback enhancements

**Response to:**

**Release:** Rel-17

**Work Item:** TEI17

**Source:** [To be RAN WG2]

**To:** SA2, CT1, SA3

**Cc:**

**Contact Person:**

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**Attachments:**

**1. Overall Description:**

RAN2 is discussing solutions to reduce EPS fallback latency for IDLE/INACTIVE UE in TEI17. The motivation is that some operators and venders feel the current EPS fallback procedure is relative long which has negative impact on UE experience of voice service, thus prefer to reduce the latency.

However, considering legacy EPS fallback procedure involves both of core network and RAN, there are concerns that the candidate solutions discussed in RAN2 may create impact on upper layer signalling or core network procedures which is not RAN2’s intention for TEI17.

The solutions includes two aspects, i.e. enhancements for MT case, and enhancements for MO case. The brief introduction is as blow:

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| 1. MT case:  When network indicates EPS fallback for voice service, the idle/inactive UE goes directly to E-UTRA for connection establishment upon paging in NR. There are two candidate alternatives for the EPS fallback indication, i.e.  Alt 1: The EPS fallback indication is included in paging message. Upon gNB receiving paging indicating voice service type from core network (as same as agreed for MUSIM), gNB can decide to perform EPS fallback for the UE, and indicate EPS fallback in Uu paging message. (see details in R2-2202818.)  Alt 2: The EPS fallback indication is included in SIB. The detailed indication could be VoNR support indication (see details in R2-2202505) or E-UTRA frequency information (see details in R2-2202791). When EPS fallback is indicated in SIB and voice service type is indicated in Uu paging message, the idle/inactive UE can assume network triggering EPS fallback for it.  2. MO case:  The EPS fallback indication in SIB as proposed in Alt 2 can apply to MO case, i.e. when idle/inactive UE initiating MO call, if EPS fallback is indicated in SIB, it goes directly to E-UTRA for connection establishment. |

In RAN2 discussion there is no consensus whether SA2/CT1 existing procedures and specification can support these candidate solutions without any change, therefore RAN2 would like to request SA2 and CT1 to evaluate and inform RAN2 whether there is any impact foreseen. If there is, indicating the detailed impact would be helpful to RAN2.

In RAN2 discussion there are also concerns raised that adding paging cause/SIB indication for EPS fallback will have security issues. RAN2 would like to request SA3 to evaluate and inform RAN2 whether there is security issues if there is a new EPS fallback indicator included in paging or SIB.

**2. Actions:**

**To:** SA2, CT1, SA3

**ACTION:** RAN2 kindly asks SA2, CT1 and SA3 to take into consideration the information above and provide answers to the questions above.

**3. Date of Next TSG-RAN2 Meetings:**

RAN2#118-e 16 May – 27 May 2022 Online

RAN2#119 22 Aug – 26 Aug 2022 Toulouse, FR