**3GPP TSG RAN WG1 #101-e R1-200xxxx**

**e-Meeting, May 25th – June 5th, 2020**

**Title: [Draft]** LS to RAN4 on Phase noise and other RF Impairment modelling

**Release:** Rel-17

**Work Item:** FS\_NR\_52\_to\_71GHz

**Source:** Ericsson

**To:** 3GPP TSG-RAN WG4

**Contact Person:**

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**Attachments:** None

1. **Overall Description:**

During the discussions in RAN1 on Evaluation Methodology for the Study on supporting NR from 52.6 GHz to 71 GHz, companies discussed the applicable RF impairments and appropriate modelling approaches.

* All companies considered phase noise (PN) modelling as necessary in the RAN1 evaluation of applicable numerology including subcarrier spacing and channel BW. Two PN models developed during the Rel-15 NR study item are provided in TR 38.803 (Ex-1 and Ex-2). However, some companies expressed concerns on the applicability of these models to the study on supporting NR from 52.6 GHz to 71 GHz.
* Modelling of the power amplifier (PA), either directly or approximately via EVM injection, and other RF impairments, such as I/Q imbalance and frequency offset, were optionally considered in the RAN1 evaluation.

RAN1 respectfully requests RAN4 to provide feedback on appropriate/applicable phase noise and other RF impairment modelling and associated parameters.

**2. Actions:**

**To RAN4 groups:**

**ACTION:** RAN WG1 respectfully requests timely feedback from RAN WG4 on appropriate/applicable phase noise and other RF impairment modelling in order that RAN WG1 may study applicable numerology including subcarrier spacing and channel BW (including maximum BW).

**3. Date of Next TSG-RAN WG4 Meetings:**

TSG-WG1 Meeting #102 24th – 28th August 2020 e-Meeting

TSG-WG1 Meeting #102bis 12th – 16th October 2020 e-Meeting