**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). Some companies suggested to respectfully request RAN4 feedback on the applicability of these models to NR from 52.6 GHz to 71 GHz. In case models are not applicable, RAN1 kindly asks RAN4 to provide applicable models.
* 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.

**2. Actions:**

**To RAN4 groups:**

**ACTION:** RAN WG1 respectfully requests timely feedback from RAN WG4 on applicability of TR 38.803 (Ex-1 and Ex-2) PN models to NR from 52.6 GHz to 71 GHz. In case models are not applicable, RAN1 kindly asks RAN4 to provide applicable models. RAN WG1 also respectfully requests RAN WG4 to provide feedback on other RF impairment modelling and associated parameters.

**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