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

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

**Title: [Draft]** LS to RAN4 on RF Impairments 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, companies expressed concerns on the appropriateness of these models to the Study on supporting NR from 52.6 GHz to 71 GHz and would appreciate feedback from RAN4.
* 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 considered optional in the RAN1 evaluation by a majority of the companies in the RAN1 email discussion.

In order to proceed in the RAN1 evaluation, RAN1 respectfully requests RAN4 to provide feedback on appropriate RF impairment modelling and associated parameters.

**2. Actions:**

**To RAN4 groups:**

**ACTION:** RAN WG1 respectfully requests timely feedback from RAN WG4 on appropriate/applicable 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