Nokia Solutions and Networks US LLC

Address: 600 Mountain Ave Murray Hill, NJ 07974

RE: Antenna Registration: Directional Antenna Information and Description Of testing License Service Application, File 0779-EX-CN-2020

This is the exhibit for the directional antenna Fixed/Base Stations:

- Integrated Antenna; 128 elements, Dual Polarized 8x8 Arrays
- 12° Min BW, Horizontal and Vertical
- Horizontal Scanning Angle: 90° (3 dB)
  - Vertical Scanning Angle: 30° (3 dB)

Nokia proposes to operate initially using 64 and 256 QAM modulation. BPSK modulation may be used in later phases.

Narrative/Use -

Used for 5G NR testing in preparation to supply 5G Radio network for US operators.

5G growth is extremely crucial for US mobile network revolution. Band n257 plays a vital role in adding high speed access network. Nokia needs STA to test and operationalize the solutions using expanded 28GHz spectrum.

If you have any questions, please let me know.

Yours Sincerely, Glenn A. Steitz Senior Manager 5G Demonstrations and Solutions Nokia Solutions and Networks Genn.steitz@nokia-bell-labs.com 973-214-0028