

**Ericsson**

**Exhibit to Experimental License Application, File No. 0629-EX-PL-2015**

**Date Filed: October 7, 2015**

Description of the Experiment and Objectives to be Accomplished

Mobile data traffic is expected to grow ten times from 2013 to 2019. Throughout the telecommunications industry, it is widely recognized that future solutions commercialized beyond 2020 should be able to meet a one thousand factor increase in capacity demand. A key component for increased capacity is more spectrum and so using frequencies beyond 6 GHz for mobile communications will be necessary to fulfill the requirements.

As a step towards the development of future products meeting the increased demands, Ericsson seeks an experimental license to conduct research and trials of new 5G radio access technologies. The trial activities will test and evaluate new radio access technologies including higher carrier frequencies to enable the use of larger bandwidths, reduced latency to provide improved user experience and enable new use cases such as mission critical and machine type communications and advanced antenna system to further improve spectral efficiency. The trials will also include demos of these technologies.

The Commission has previously granted Ericsson an experimental license at our facility in Plano, Texas to conduct 5G operation using a subset of the spectrum and nearly the same technical parameters requested here.<sup>1</sup> The current experiment will use one experimental 5G base stations and one piece of experimental 5G mobile user equipment. This equipment will be located inside the Verizon Innovation Lab on the Verizon campus at 690 Sylvan Road, Waltham, MA 02451. The transmissions will be at no more than [REDACTED] EIRP, and testing will only be conducted indoors in the Verizon Lab. Because of the indoor location and use of the equipment, the experiment will not interfere with existing users. Out of an abundance of caution for the government systems in the requested band, we are nonetheless providing a 24 hour emergency contact to turn off any transmissions should interference be detected. The contact information is: Hiep Pham, 925-216-8068 and hiep.pham@ericsson.com.

Ericsson requests authorization to transmit on 14.5-15.35 GHz only because the experimental equipment was built to function on this spectrum for initial testing in Sweden. Ericsson has no intention of requesting that this spectrum being repurposed for commercial use.

The experiment will contribute to the expansion and utilization of the radio art by enabling the development of a new generation of wireless technology, which will be necessary to handle the increase in data traffic coming in the relatively near future.

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<sup>1</sup> On November 21, 2014, the Commission granted Ericsson an experimental license for 5G experimentation under call sign WH2XMQ. See File Number 0765-EX-PL-2014.

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Call Sign Waiver Request

The experimental 5G base station is not built to transmit a call sign. While we have determined that we would be able to modify the base stations to transmit a call sign in simple Morse code should the Commission not grant the waiver, Ericsson requests that the requirement to transmit a call sign be waived for this experiment. We will be experimenting with new modulations, and other parties will not have receivers that can decode the call signs. Users near our transmission would have been notified of the experiment and should they notice any interference, can contact the 24-hour emergency contact to request shutting off transmissions.

Directional Antenna Information

The antenna parameters will be:

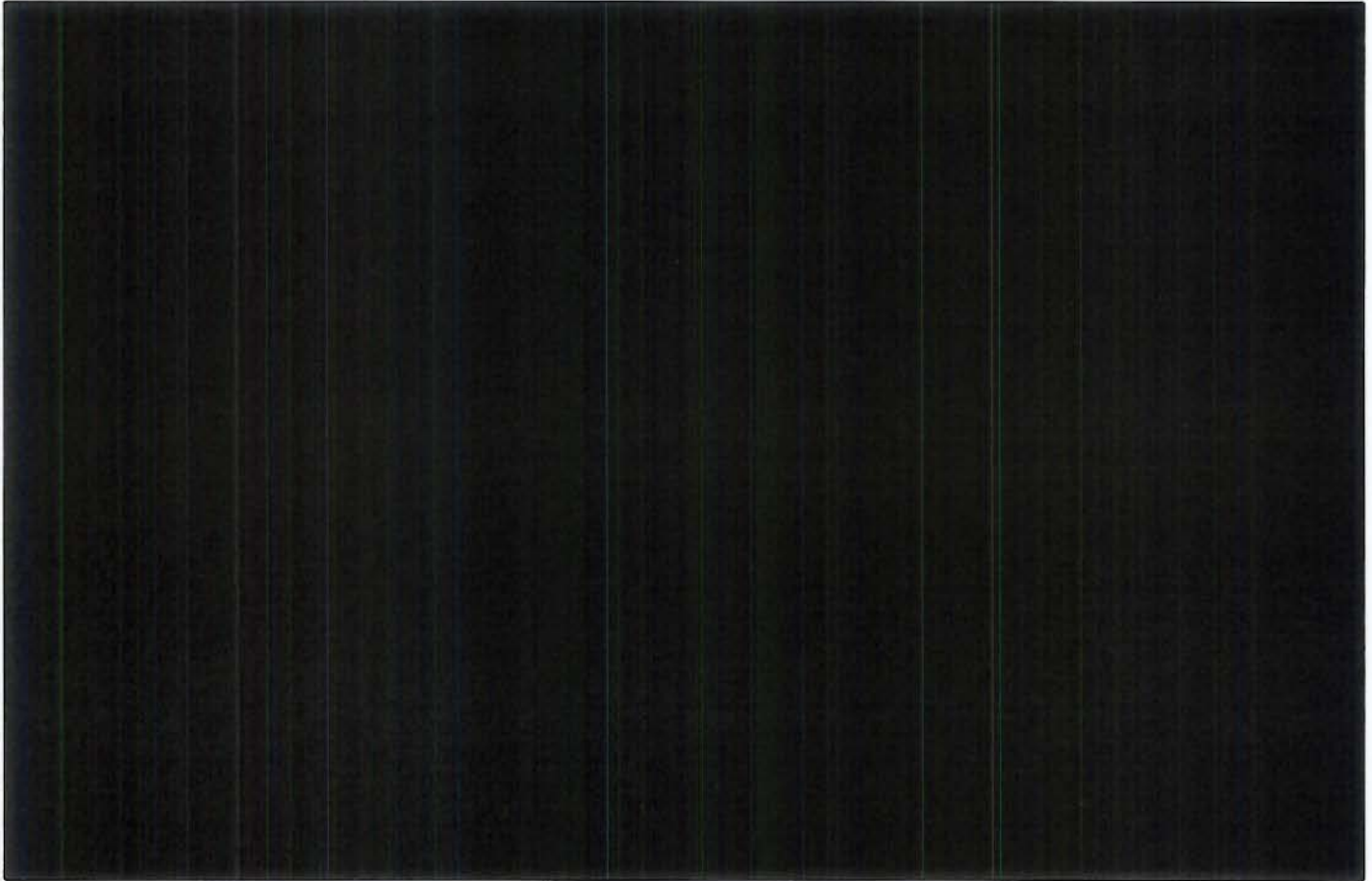
Polarization: [REDACTED]  
Horizontal HPBW: [REDACTED]  
Vertical HPBW: [REDACTED]  
Antenna gain: [REDACTED]  
EIRP: [REDACTED]  
Electrical tilt: [REDACTED]  
Mechanical tilt: [REDACTED]

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**Diagram for the V-pol antenna elements: azimuth**



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**Diagram for the V-pol antenna elements: elevation.**

