

**PUBLIC REDACTED VERSION**

**Ericsson**

**Exhibit to Experimental License Application, File No. 0765-EX-PL-2014**

**Date Filed: 10/27/2014**

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 experiment will use two experimental 5G base stations and one piece of experimental 5G mobile user equipment.<sup>1</sup> The base stations will be located on Ericsson's campus and positioned [REDACTED]. The antennas will each have a [REDACTED]. The transmissions will be at no more than [REDACTED] EIRP, and testing will only be conducted within a 1 km radius of the base stations. Because of the [REDACTED] of the antennas, the direction of the antennas, and their location on the Ericsson campus, 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: Keith Shank, 214-679-4362.

We are requesting the license to start on January 2, 2015, and to run for 12 months. If the review process is not completed by January 2, 2015, we are still requesting the 12 month license to be issued upon conclusion of the Commission's review.

Ericsson requests authorization to transmit on 14.7-15.1 GHz because the experimental equipment was built to function on this spectrum for initial testing done in Sweden. Ericsson has no intention of requesting that this spectrum being repurposed for commercial use. While we have requested our preferred bands, if for some reason that is not possible, we would request a license be granted for [REDACTED] within the 14.5-15.35 GHz band.

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<sup>1</sup> The equipment used for the UE is constructed in a trailer towed by an Ericsson employee.

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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.

Additional Technical Information

As we are requesting confidentiality for the channel size and output power, we are stating the channel bandwidth, full emissions designator and EIRP only in the Exhibit to the application.

The channel bandwidth will be [REDACTED]

The emissions designator will be [REDACTED]

The maximum EIRP will be [REDACTED]

Call Sign Waiver Request

The experimental 5G base stations are 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 two base stations, which have directional antennas, will be located on the Ericsson campus, at 33.075406, -96.831529 and 33.075612, -96.832222.<sup>2</sup> The antennas will be positioned

[REDACTED]  
[REDACTED]. The antennas will have a [REDACTED].

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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<sup>2</sup> 33° 4' 31.4616", -96° 49' 53.5044" and 33° 4' 32.2026", -96° 49' 55.9992"



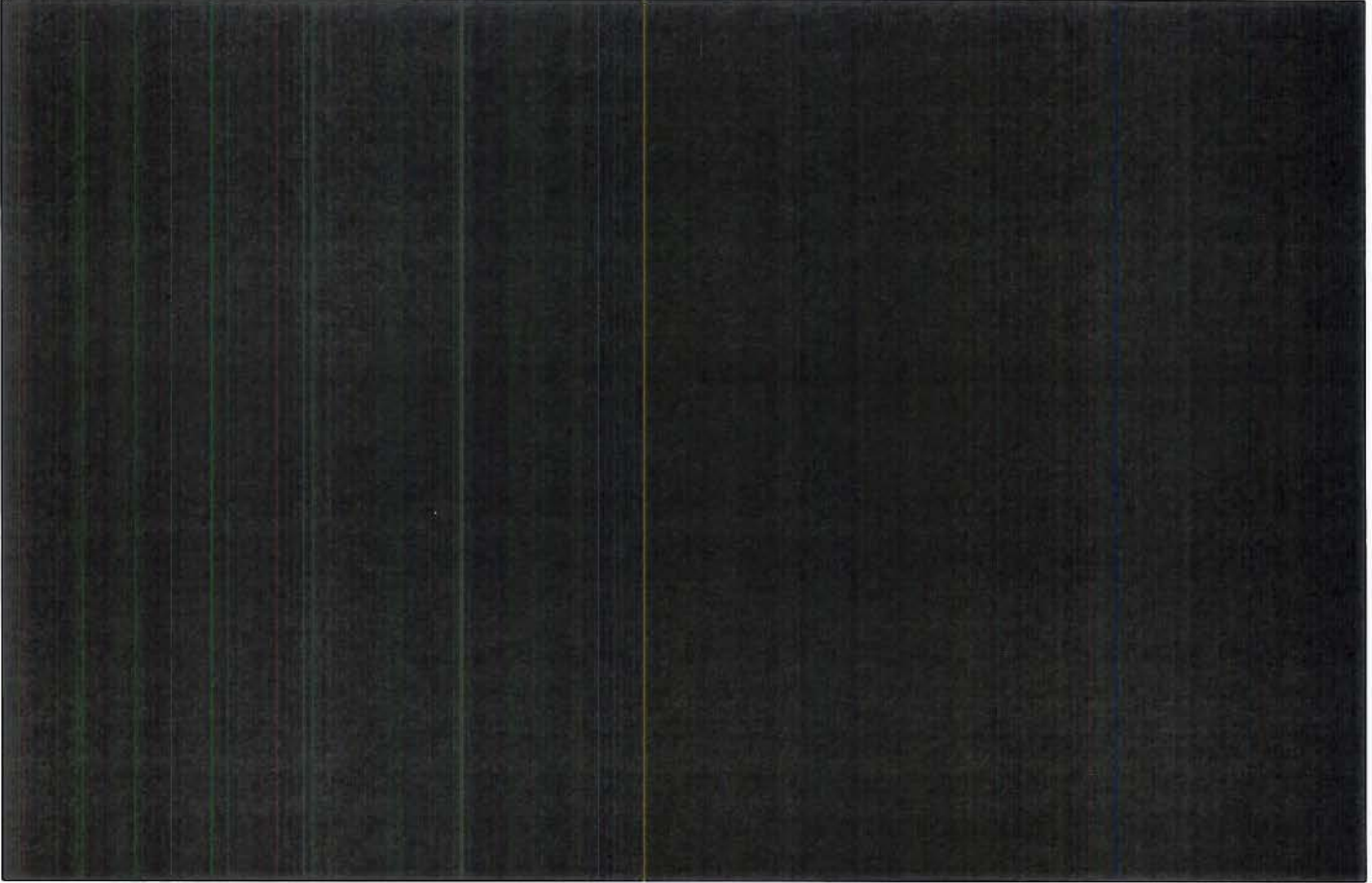
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**Diagram for the V-pol antenna elements: azimuth**



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

