

Ericsson  
File No. 0029-EX-CN-2017  
2/2/2017

### Description of the Experiment and Objectives to be Accomplished<sup>1</sup>

As part of our work in developing 5G, Ericsson is seeking this authorization to conduct pre-commercial outdoor field trials to validate key 5G concepts and associated performance. This research will continue and expand the development of 5G technologies, which is necessary to ultimately enabling 5G deployment. [REDACTED]

We have selected four geographic areas that contain the appropriate variables needed to conduct these tests: [REDACTED]

The tests will use only one base station, so operation will be at a single location within the authorized areas at any given time. Although the base station will be transported to different locations within the test areas over the course of the trials, the base station will remain fixed while it is operating. Testing will, at most, be conducted from morning to night on a particular day before stopping.

Although we are requesting 12 months for testing, we expect much of the testing to be done within the first 3-4 months, with incremental testing for software updates later.

### Airport Exclusion Zones

There are airports contained within two of the requested testing areas. In addition, Philadelphia International Airport is located near the boundary of one testing area. As described on Form 442, we are imposing exclusion zones around those airports to prevent any issues with aircraft.

#### Wings Airport

- Exclusion Area: 2 mile (3.22 km) radius centered at Lat 40.137901/ Lon -75.264501
- Runway Elevation: ranges from 277-302 feet (84.43-92 m)
- Ground Elevation at Radius: ranges from 150 ft-332 feet. (45.72- 101.19 m)
- Natural Formations and Man-made Structures that would shield Aircraft: The airport is surrounded by, and exclusion radius filled with, dense trees and neighborhoods

#### Lakehurst Airbase

- Exclusion Area: 4 mile (6.44 km) radius centered at Lat 40.046535, Lon -74.374274
- Runway Elevation: ranges from 86-139 ft (26.2-42.37 m)

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<sup>1</sup> See 47 C.F.R. 5.63(c)(1)

- Ground Elevation at Radius: ranges from 77-165 ft (23.47- 50.29 m). (There also is a wooded area without roads, and so not usable by the testing van, that that has an elevation of 177 feet/ 53.95 m.)
- Natural Formations and Man-made Structures that would shield Aircraft: The exclusion area is densely filled with trees and residential areas, which completely surround the base.

#### Ocean County Airport

- Exclusion Area: 2 mile (3.22 km) radius centered at Lat 39.926903, Lon -74.292871
- Runway Elevation: ranges from 66-82 feet (20.12-24.99 m)
- Ground Elevation at Radius: ranges from 30-133 feet (9.14- 40.54 m)
- Natural Formations and Man-made structures: The airport is surrounded by, and entire exclusion radius filled with, dense trees.

#### Philadelphia International Airport:

- 2 mile (3.22 km) radius centered at Lat 39.881932, Lon -75.212845
- Runway Elevation: ranges from 34-37 feet (10.36- 11.28 m)
- Ground Elevation at Radius: ranges from 14-26 feet. (4.27-7.92 m)
- Natural Formations and Man-Made Structures that would shield Aircraft: There are trees, industrial complexes, and residential neighborhoods between the aircraft landing area and the testing area. The testing area is densely urban and filled with trees and buildings.

We have attached an Exhibit portraying a map of the test areas and exclusion areas, as well.

#### Output Power

Note that the output power listed within the application is reflects EIRP, not ERP. The maximum EIRP will be 51 dBm

#### 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 in its current form, 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 read the call signs. We are coordinating with existing users in advance to address interference issues.

Directional Antenna Information

[REDACTED]

[REDACTED]