

From: [Matt Larsen](#)
To: oetech@fccsun27w.fcc.gov
Cc: [Behnam Ghaffari](#)
Subject: RE: FCC File No. 0790-EX-CN-2017
Date: Friday, November 17, 2017 1:28:05 PM

Hello Benham,

Thank you for your inquiry. There are three primary reasons that we are looking to have a large number of users on our experimental system.

The first is that there are very different characteristics at each tower site. One of the sites is urban, with a lot of trees and the majority of the customers are fairly close to the tower, which makes it good for testing foliage penetration and non line-of-sight conditions. The second is very rural, with few trees, that is best suited for testing the system with customer units that could be up to 18 miles away from the base station. The third has a combination of the first two – with nearby urban foliage in one direction and rural with little foliage in the other direction. The fourth site is near a small town with substantial foliage, but farther away from the town than the others. We feel that this variety of deployment conditions will be a comprehensive challenge for the technology and spectrum characteristics and will allow us to build a model for each type of environment that we see.

The second reason is that we want to determine what the appropriate oversubscription ratio is with a heavy load on the access points. The best way to test that out is to put a lot of customers on the system and see how real-world usage impacts its performance. We feel that 40 to 80 customers on a sector is needed to establish the heavy load conditions needed to determine the maximum oversubscription ratio.

The third reason is that we plan to have multiple sectors at each tower so we can test for co-channel interference and work out the implementation processes for channel assignments. We want to put multiple sectors up and work out the processes to make sure that we are able to design the system to maximize the use of available spectrum, reuse channels and avoid interference.

The 1000 customers number was determined as our theoretical maximum. If we assume four sites, with four sectors and an average customer load of 60 per sector, that is 960 customers. I rounded it up to 1000 in the application, to cover for any sectors that might end up with slightly more.

All of the data we are collecting will inform our decisions on the equipment choice, vendors we use, PAL/GAA functionality and to help us build our model for PAL bids.

I hope this answers your queries. If you need anything else, please let me know.

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From: oetech@fccsun27w.fcc.gov [mailto:oetech@fccsun27w.fcc.gov]
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From:

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Applicant:

0790-EX-CN-2017

File Number:

39625

Correspondence Reference Number:

11/08/2017

Date of Original Email:

Our EXPERIMENTAL licenses are granted for a short period of time for the purpose of innovation and experimentation. Using 1000 devices is more like providing a service. Please in great detail state your purpose for using 1000 units. What is the lowest number of units that you can use without compromising the outcome?