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Federal Communications Commission
Experimental Licensing Branch

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Mr. John Kennedy,

Your email dated 4/16/2009 requested an explanation of why 650 residences are needed to perform our experiment and whether or not fewer residences and devices could be used. Our response is as follows:

The experiments we are planning are related to the Smart Grid utilities network. Elster's approach to Smart Grid is a mesh network system whereby all communications are polled and the polling is controlled by a collector device. With this approach, only one device in the network transmits at any one time, unlike most peer to peer networks where devices may transmit randomly. As a result, increasing the number of devices in the test area does not increase the spectrum loading or occupancy. A large number of devices will allow the mesh network to be tested with higher hop counts as the collector device must rely on successive hops to poll outlying meters. This arrangement is representative of the distances seen in actual field applications and is thus necessary in proving the mesh network's operation.

We feel that conducting the experiment with less than the 2450 devices would be inadequate for testing the mesh network operation. Furthermore, Elster believes that because it uses a polled system where only a single device transmits at any given time, testing with a large number of low power devices will not present an increased interference threat to homeowners within the test area.

Respectfully,

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