APPENDIX K

Leo One USA Experimental Application

Leo One USA hereby requests experimental authority in order to test and confirm the predicted performance of its proposed Non-Voice, Non-Geostationary Mobile Satellite Service (NVNG MSS) low-Earth orbit ("LEO") satellite communication system, and to demonstrate the wide range of possible communications services to potential end users. These experiments will be a precursor to the deployment of the operational Leo One USA system, which system will consist of twelve orbiting LEO satellites.

In this application, Leo One USA proposes the following experiments, which are described in greater detail in the specific sections of this application together with the duly completed FCC Form 442:

1. Construction, launch, testing and operation of two Leo One USA satellites capable of receiving, storing and re-transmitting signals in a format compatible with the rules for the NVNG MSS.
2. Construction, testing and operation of one Network Operation Control Center (NOCC) to be colocated with the Leo One USA gateway earth station. This facility will provide in-orbit control of the two Leo One USA experimental satellites and act as a feeder link gateway station for connection to terrestrial communication networks.
3. Construction, testing and operation of one thousand transceivers which will be capable of two-way communication with the Leo One USA experimental satellites in accordance with the proposed rules of operation of the NVNG

MSS service. These transceivers will only be operated within the United States.

The Leo One USA experiment objectives can be summarized as follows:

1. To perform measurements in order to obtain a better understanding of the interference environment existing in the frequency bands allocated for the NVNG MSS. This information will be crucial in optimizing the design of hardware and software techniques necessary to ensure interference free sharing of these frequencies between the various services to which they are allocated.
2. To collect propagation data for mobile terminal operation in a range of possible environments and elevation angles, so as to better define the potential NVNG MSS service offering of the operational Leo One USA system.
3. To validate the operational procedures and protocols that will be used at the NOCC for ground control of the Leo One USA satellite system.
4. To permit manufacturers to develop transceiver designs in a realistic operating environment. This will facilitate the development of transceivers so that they are available effective with the commencement of commercial service.
5. To research and stimulate the market for NVNG MSS services and to validate the business plan market predictions. Leo One USA predicts that a successful experimental program will promote a rapid build-up of commercial customers upon initiation of commercial service.

Leo One USA will be responsible for all operations during the experimental program and will establish operational procedures and points of contact so as to ensure that any

transmitting device will cease transmissions in the unlikely event that interference is caused to other licensed users in the frequency bands.