EXHIBIT - SPECIAL TEMPORARY AUTHORITY JUSTIFICATION

Narrative Statement

Loon LLC (Loon) outlines below its need for the requested Special Temporary Authority (STA) and the compelling reasons why this STA should be granted expeditiously. Loon requests that the STA be granted for a period of 180 days. The STA is needed to support experimental testing within a portion of LTE Bands 20 and 28 in the area immediately surrounding our launch facility in Winnemucca, NV. Specifically, Loon balloons with directional antennas will be positioned over the proposed test area and used to relay communications between ground terminals (handsets). Loon will itself be using ordinary, FCC approved handsets to communicate with the balloons, and then Wi-Fi (used in conjunction with Part 15 unlicensed Wi-Fi) or the E-band frequencies allocated under call signs WI2XCS and WH2XUP to interconnect with the ground terminals. The frequencies specified in this application will be to support these communications.

Loon will provide service to the proposed test area only to the extent it can be done without interference to neighboring services. Loon holds all necessary government authorizations for the related aeronautical activities.

Loon will have the ability to terminate transmissions if the platforms exit the test area. First, the platforms will continue to contain a GPS receiver. If the receiver detects that the platform has exited the test area, it will automatically disable transmissions over the test frequencies. Second, connections to the ground infrastructure can be used to manually disable transmissions. Third, the airborne radios will automatically be disabled if connection to the ground infrastructure is lost for a defined period of time.

The proposed experimental operations accordingly will be conducted without harmful interference to other authorized users. Should any interference be reported, the proposed tests will cease immediately unless and until the interference is resolved to the satisfaction of the complainant. Protected users should report possible interference to Leonard Bouygues of Loon (email: LoonMC@google.com; telephone: 650-966-7655).

Regulatory Contact	Technical Contact
David Marshack 1600 Amphitheatre Parkway Mountain View, CA 94043 301-980-9723 dmarshack@loon.co	Ben Wojtowicz 1600 Amphitheatre Parkway Mountain View, CA 94043 847-767-0554 bwojtowi@loon.co

Transmitter Equipment and Station Details

Radio Information

Equipment	Various custom equipment manufactured by Loon (various custom)
Quantity	Up to 30 at any time
Area of Operation	Operation not to exceed 11 km from the following geographic centerpoint: ● 40° 53’ 55” N, 117° 48’ 16” W

Frequency	Low (MHz)	High (MHz)
Various custom	720	725
Various custom	789.5	794.5
Various custom	832	842
Various custom	791	801

Antenna Details

Antenna	Ethertronics Part No. 1003445	Ethertronics Part No. 1003113	Ethertronics Part No. 1004680
Type	Dual-polarization dipole	Dual-polarization dipole/monopole	Dual-polarization
Gain	8 dBi @ 0 degrees from boresight	3 dBi @ 45 degrees from boresight	11 dBi @ 0 degrees from bore-sight
Beam Width at Half-Power Point	90 degrees from boresight, symmetric	120 degrees from boresight, symmetric	48 degrees from boresight, symmetric
Orientation in the Horizontal Plane	Boresight pointing towards the earth	Boresight pointing towards the earth	Boresight pointing 30 degrees from earth

Orientation in the Vertical Plane	Boresight pointing towards the earth	Boresight pointing towards the earth	Boresight pointing 30 degrees from earth

Transmitter

Radio	**Modulation**	**Emission Designator**	**Bandwidth (MHz)**	**Max Output Power (W)**	**Max ERP (W)**
Various custom with antenna #1003445	LTE (BPSK, QPSK, 16QAM, 64QAM)	5M00W7W	5MHz	5W	19.3W
Various custom with antenna #1003113	LTE (BPSK, QPSK, 16QAM, 64QAM)	5M00W7W	5MHz	5W	6.1W
Various custom with antenna #1004680	LTE (BPSK, QPSK, 16QAM, 64QAM)	5M00W7W	5MHz	5W	38.5W
Various custom with antenna #1003445	LTE (BPSK, QPSK, 16QAM, 64QAM)	10M0W7W	10MHz	5W	19.3W
Various custom with antenna #1003113	LTE (BPSK, QPSK, 16QAM, 64QAM)	10M0W7W	10MHz	5W	6.1W
Various custom with antenna #1004680	LTE (BPSK, QPSK, 16QAM, 64QAM)	10M0W7W	10MHz	5W	38.5W