

EXHIBIT 1

PROGRAM OF RESEARCH AND EXPERIMENTATION

Higher Ground LLC (“HG”), pursuant to Sections 5.54(a)(1) and 5.71(a) of the FCC’s rules, requests a conventional experimental authorization for a period of two years commencing July 1, 2014 to test and develop new prototype user terminals that attach to existing smartphones for the provision of satellite-based text messaging.

Purpose and Scope of Experimental Operations: The requested experimental authorization will permit HG to test, develop, and demonstrate the feasibility of using a small user terminal, embedded in a protective smartphone case, to provide satellite-based text messaging services to users located in the following five areas:

	Latitude (° North)	Longitude (° West)	Radius of Operation
Palo Alto, CA	37.436	122.144	10 miles
Jackson, CA	38.397	120.711	10 miles
Sierra Nevada Mts, CA	37.900	119.241	20 miles
Las Vegas, NV	36.127	115.166	10 miles
Washington, DC	38.923	77.040	10 miles

HG seeks to conduct studies to demonstrate device capabilities while providing interference protection to co-channel and adjacent-channel licensed systems.

Satellite Transmissions and Operating Frequencies: The devices will operate on C-band frequencies in the 3700-4200 MHz (space-to-Earth) and 5925-6425 MHz (Earth-to-space) bands to communicate with an authorized Intelsat satellite, the Galaxy 12 at 129° W.L. (Call Sign S2422), which in turn will communicate with authorized Intelsat gateways, including one located in Napa, CA. The specific frequencies proposed for the

experimental operations will include the following uplink frequencies paired, respectively, with the following downlink frequencies:

Uplink (MHz)	Downlink (MHz)
5925 - 5930	3700 - 3705
5935 - 5945	3710 - 3720
5955 - 5965	3730 - 3740
5975 - 5985	3750 - 3760
5995 - 6005	3770 - 3780

Radiofrequency (“RF”) Operation: The devices will use a directional user terminal antenna to transmit in time division multiple access (“TDMA”) mode.

To prevent harmful interference to other Fixed Satellite Service systems, the devices will employ spread spectrum techniques to comply at all times with the power spectral density limits specified in Section 25.218(d) of the Commission’s rules.

To prevent harmful interference to authorized co-channel terrestrial point-to-point microwave systems in the 5925-6425 MHz band, the devices will only operate in a permission-based system. They will be prohibited from operating if positioned within an Exclusion Zone surrounding a licensed terrestrial microwave facility, derived from the Commission’s Universal Licensing System (“ULS”) database and a mapping software program. The device will initiate transmissions only if (i) the database is current; (ii) a frequency is available outside an Exclusion Zone; and (iii) the device is oriented to allow transmission with the authorized satellite.¹

The technical parameters of the RF operation of the devices are further specified in the accompanying FCC Form 442.

Hours of Operation: The devices are capable of operation 24 hours per day, seven days per week. HG will maintain records of the dates and times when experimental operations are conducted. The following person may be contacted by telephone 24 hours, seven days a week in the event of any interference issues: Rob Reis at (650) 322-3958.

¹ The 5925-5930 MHz band is lightly used – according to ULS records, only 19 point-to-point microwave systems are currently licensed in the band. To ensure that access to the ULS database is up to date, the device may transmit in the 5925-5930 MHz band to download any updates to the Exclusion Zones, provided that the device is located outside the 19 Exclusion Zones in that 5 MHz-wide band.

RF Environmental Impact: Grant of this application will not have a significant environmental impact. Per OET Bulletin 65, the maximum power density for consumer mobile devices at 20 cm distance or more from the body is 1 mw/cm². For devices that use TDMA modulation techniques, this measurement can be averaged over 30 minutes.² At 20 cm distance, the power density of the HG device, using a 1 in 10 on/off averaging time, is no more than 0.8 mw/cm² (and in most cases, far less). HG will ensure via a sensor that no transmission will occur should a body part be positioned closer than 20 cm to the antenna. HG will also ensure that our TDMA modulation techniques will allow the devices to meet the power density limit with a duty cycle of 10% or less.

² See *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*, OET Bulletin 65 (Edition 97-01), App. A, Table 1(B) (Aug. 1997).