October 13, 2017

VIA ELECTRONIC FILING

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

Re:  Ex Parte Presentation, Higher Ground LLC  
Blanket License Application for C-band Mobile Earth Terminals  
IBFS File No. SES-LIC-20150616-00357

Dear Ms. Dortch:

On October 11, 2017, Rob Reis of Higher Ground LLC (“Higher Ground”) and the undersigned met with representatives of the International Bureau, Wireless Telecommunications Bureau, the Office of Engineering and Technology, and the Public Safety and Homeland Security Bureau identified in the attachment. As described in the attached presentation, Higher Ground provided an update on SatPaq developments and addressed technical claims that some filings raised regarding its interference protection regime.

This letter is filed pursuant to Section 1.1206 of the Commission’s rules. Please contact the undersigned if you have any questions.

Respectfully submitted,

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Adam D. Krinsky
Counsel to Higher Ground

Attachments
ATTACHMENT*

**International Bureau:**
Jose Albuquerque  
Paul Blais  
Chip Fleming  
Jennifer Gilsenan  
Kerry Murray  
Cindy Spiers (by telephone)

**Wireless Telecommunications Bureau:**
Blaise Scinto

**Office of Engineering and Technology:**
Julius Knapp  
Jamison Prime

**Public Safety and Homeland Security Bureau:**
Kenneth Carlberg  
Michael Wilhelm

* This list also serves as the cc: list.
Presentation to FCC
October 11, 2017
• SatPaq Update
  • Manufacturing
  • Testing
  • User Interface Developments
  • SatPaq 911

• Applications for Review – Technical Issues

• Other Initiatives
• **FCC Certification:** Completed

• **Tooling:** Class A steel tools completed

• **Pilot Manufacturing:** Multiple small-batch (25 devices) productions runs completed

• **First Production Run:** Likely 4Q 2017
Alpha testing:
• Continues at “friends and family” stage
• Thousands of messages sent over last 12 months

Beta Testing:
• U.S. Customs and Border Protection begins testing, Fall 2017
• A Search and Rescue agency testing will follow

CA / Arizona Border Testing begins Fall 2017
User Interface Developments

Similar in look to other messaging apps

- Command button for SatPaq 911
- Features include:
  - Text to/from phone or email
  - Text to/from another SatPaq
  - Weather (tied to user’s GPS location)
  - Ask the Wizard (assisted search capability; e.g., “How do you clean a trout?”)
  - Share my Location
  - Share my Activity
• Higher Ground will relay a SatPaq user’s GPS location and 911 message to a 24/7 emergency call center

• The emergency call center then:
  • Identifies the appropriate first responder agency based on the SatPaq user’s GPS location
  • Calls the first responder agency and relays the location and the 911 message (the first responder agency need not be text-to-911 enabled)

• Two-way messaging continues with the user in trouble
SatPaq 911

911 call received. Help is on the way.

Life or death? No
Alone? Yes
Can move? No
Comments? Broke my leg
My Location: 37.4284,-122.1409

1 second ago

SatPaq 911
9/14/17

Is this a life or death emergency?

Yes
No
Cancel

2 seconds ago

SatPaq Weather
9:55 AM
Monday Sep 25, 2017 9:55 AM

SatPaq 911
9:54 AM
911 call received. Check messages for up...

Ask the Wizard
9:55 AM
Hello. This is the Wizard. How may I help...

Share my Activity
9:57 AM
Finally made camp. That's it for me today...
Higher Ground Aug. 28, 2017 *ex parte* response:

• “Channel Master” engages in a 360-degree interference protection assessment around a SatPaq transmit location, using actual antenna data of each relevant point-to-point microwave receiver  
  o Analysis accounts for each individual receiver’s coordinate location, antenna orientation, C-band frequencies, antenna height and height above mean sea level, etc.  
  o Data is derived from ULS

• Channel Master incorporates ULS updates on a daily basis to ensure interference protection is up-to-date
• Channel Master accounts for multiple antennas on a single site (spatial diversity) and reflectors used as part of a fixed service path that are included in ULS license data

• Channel Master applies conservative assessment of SatPaq signal reach and potential interference risk, e.g., by assigning SatPaq elevation height of 10 meters above ground level (instead of 1.5 meter natural holding position)

• To avoid harmful interference, Channel Master will only allow a SatPaq to transmit if the interference level will be 6 dB or more below the thermal noise floor
**Other Initiatives**

**NASA Contract** - Small Business Innovation Research (SBIR) grants to develop a) *Track and Locate* for Beyond Visual Line of Sight (BVLOS) drones and b) *Detect and Avoid* airborne radar. Provides out-of-range communications and flight safety for BVLOS UAVs.

**Department of Homeland Security Contract** - Contract to provide sensing as part of the US / Mexico border ‘Virtual Wall.’ Higher Ground will build an experimental airborne radio relay placed on a UAV that captures images on the ground and sends to the satellite and on to DHS.