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October 27, 2011

VIA ELECTRONIC FILING

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

Re: **Notice of Ex Parte Presentation in LightSquared Subsidiary LLC Application for Modification of its Ancillary Terrestrial Component Authority, IB Docket No. 11-109; IBFS File No. SAT-MOD-20101118-00239**

Dear Ms. Dortch:

On October 25th, 2011, Global Positioning System (“GPS”) manufacturers Deere & Company, Garmin International, Inc. and Trimble Navigation Limited (“GPS Parties”) participated in a meeting hosted by United States Representative Greg Walden and his staff in the U.S. Capitol Visitors Center. Also in attendance were Federal Communications Commission (“FCC” or “Commission”) officials, including Julius Knapp, Chief, Office of Engineering and Technology, Austin Schlick, General Counsel, and Greg Guice, Acting Director, Office of Legislative Affairs, as well as representatives from LightSquared Subsidiary LLC (“LightSquared”).¹

During this meeting, Representative Walden, the GPS Parties, FCC officials and LightSquared discussed a number of technical and regulatory issues concerning the terrestrial network LightSquared has proposed for the mobile satellite service (“MSS”) L-band.

- > The discussion centered on the negative interference impact of LightSquared’s proposed network on GPS receivers, including general location/navigation devices; aviation GPS devices; and high precision receivers used in agriculture, survey, construction, military and other applications. The parties discussed the ongoing process for determining whether interference mitigation methods proposed by LightSquared may be effective in protecting against such interference. These mitigation methods include limiting LightSquared’s operations to a 10 MHz signal centered at 1531 MHz (“Low 10 MHz”). Because testing has demonstrated that the Low 10 MHz approach alone does not protect

¹ **Exhibit A** provides a full list of attendees.

Boston
Hartford
Hong Kong
London
Los Angeles
New York
Orange County
San Francisco
Santa Monica
Silicon Valley
Tokyo
Walnut Creek
Washington

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many GPS receivers, including high precision GPS receivers, LightSquared has proposed to develop new filters that could be employed in new high precision GPS receivers that would protect against interference from Low 10 MHz transmissions. Such filters have not yet been made available.

- > Mr. Burgett, Software Engineering Manager, Garmin International, stated that Technical Working Group (“TWG”) testing demonstrated that LightSquared operations on the upper 10 MHz of the L-Band (“Upper 10 MHz”) created harmful interference for all classes of receivers. Mr. Burgett and FCC officials discussed why there is no reasonable technical expectation that harmful interference from high powered LightSquared transmissions in the Upper 10 MHz can be mitigated in the future for GPS receivers, including those used in critical aviation functions.
- > The GPS Parties noted that LightSquared’s repeated public references to prospective use of the Upper 10 MHz for high power transmission in a few years “when capacity is needed” are inconsistent with current assurances that its Low 10 MHz plan will mitigate interference, and such references create continued uncertainty that remains a significant roadblock to further development of potential mitigation solutions.
- > The parties discussed the wideband nature of high precision receivers including but not limited to receivers that use a separate satellite downlink to capture additional correctional data necessary to achieve centimeter-level accuracy. LightSquared distributed Deere’s depiction of signal power levels and the frequencies used by GPS receivers.² LightSquared criticized the design of wideband precision receivers and suggested such design is unnecessary. The GPS Parties disagreed with LightSquared’s criticism and highlighted that precision GPS receivers by their nature must be wideband in order to obtain additional navigational data to provide precise measurements, and in addition, augmented receivers are designed to accept signals across the entire L-band in direct response to the requirement of L-Band satellite operators (Inmarsat and LightSquared itself) that earth terminals accommodate the satellite operators’ decision to reassign downlink frequencies within the L-Band based on their own business needs.
- > The GPS Parties emphasized that there is a massive installed base of GPS receivers spread across many different industries and applications, and any mitigation solution or development in LightSquared’s network plans that compels a change to existing GPS receivers would first require comprehensive and rigorous testing. Any effort to retrofit equipment, if such retrofitting is even possible, would be a complex process and involve extensive costs associated with modifying or replacing equipment, significant end user disruption, and submission to lengthy government aviation equipment certification procedures. The GPS Parties stated that, consistent with FCC precedent, LightSquared as the

² See **Exhibit B**.

party proposing a new use of the spectrum should bear the costs of any transition that must be made to accommodate LightSquared's network.

- > In particular, Deere explained that precision GPS receivers used in agriculture are typically in use for 10-15 years, and are enclosed in sealed, ruggedized devices not amenable to retrofitting. Deere reiterated the importance of precision receivers, and their creation of between \$15 and \$30 billion in annual economic benefit for the agricultural sector alone.
- > The GPS Parties were pleased to hear the Commission reaffirm that it will not reach a decision on LightSquared's proposed network until the conclusion of tests to evaluate the interference impact of a Low 10 MHz signal on GPS receivers, including comprehensive tests to evaluate the viability of any filter technology proposed by LightSquared as an interference mitigation technique for GPS receivers that experience harmful interference in the presence of a Low 10 MHz signal.
- > The GPS Parties and FCC officials discussed the essential tests needed to validate any LightSquared filter. In particular, such tests will need to determine whether the proposed filter degrades the performance of a retrofitted receiver and/or if it alters the receiver's performance, including its accuracy. Mr. Burgett emphasized that group delay problems are a significant engineering issue, and explained that any viable filter will need to address this issue.
- > The GPS Parties and LightSquared representatives respectfully disagreed as to whether the prior FCC decisions envisioned that Ancillary Terrestrial Component ("ATC") service would authorize conversion of the mobile satellite spectrum for use by a nonintegrated, stand-alone nationwide terrestrial network. The GPS Parties pointed out that in addition to the FCC's satellite integration rules and various reassurances throughout the years that ATC would not be permitted to be used for a stand-alone high power terrestrial network, the Commission has never taken steps to create a terrestrial allocation in the mobile satellite L-band, primary or secondary.
- > The GPS Parties and FCC officials discussed the global trend toward use of wideband signals by existing and planned Global Navigation Satellite Systems systems, including GPS, Galileo, GLONASS, and Compass. In particular, the GPS Parties noted that had the U.S. military known that LightSquared would be permitted to convert use of the satellite spectrum to establish a stand-alone terrestrial network in the L-Band, it would likely have raised serious concerns given that its next generation M-Code signal, the initial contemplation and design of which predated ATC authorizations by several years, pushes energy to the outermost lower edge of the 1559-1610 MHz band, only a scant few megahertz from LightSquared's High 10 MHz signal.
- > The GPS Parties, FCC officials and LightSquared representatives agreed on the importance of ensuring that LightSquared's proposed network does not cause interference to Federal Aviation Administration receivers and aviation operations.

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If you have any questions regarding this meeting, please do not hesitate to contact the undersigned.

Very truly yours,

/s/

Catherine Wang
Tim Bransford

Exhibit A – Meeting Attendees

Representative Greg Walden

Ray Baum

Neil Fried

David Redl

Nick Degani

Julius Knapp

FCC

Austin Schlick

FCC

Greg Guice

FCC

Scott Burgett

Garmin International

John Rauber

Deere & Company

Jim Kirkland

Trimble Navigation Limited

Catherine Wang

Bingham McCutchen LLP (representing Deere)

Tim Bransford

Bingham McCutchen LLP (representing Deere)

Anne Swanson

Down Lohnes PLLC (representing Garmin)

Paul Scolese

Akin Gump (representing Coalition to Save Our GPS)

Geoff Stearn

LightSquared

Michael Tseytlin

LightSquared

Jeff Carlisle

LightSquared

Mark Paoletta

Dickstein Shapiro (representing LightSquared)

Amy Mehlman

Capitol Strategies (representing LightSquared)

High Precision and Augmented Receivers

All modern high precision receivers are wideband and use filters that cover GPS + GLONASS bands, and if Augmented, MSS also

All Deere receivers are High Precision and Augmented

- So are many from Trimble, NovAtel, Hemisphere, Leica, etc.

Other High Precision receivers are not Augmented

