



FEDERAL COMMUNICATIONS COMMISSION

JULIUS GENACHOWSKI  
CHAIRMAN

March 23, 2012

The Honorable Greg Walden  
Chairman  
Subcommittee on Communications and Technology  
Committee on Energy and Commerce  
U.S. House of Representatives  
2125 Rayburn House Office Building  
Washington, D.C. 20515

Dear Chairman Walden:

Your letter of February 28, 2012, asked for responses to several questions regarding the interference dispute between LightSquared and the Global Positioning System (GPS) community. In addition to the written responses below, my staff has briefed Committee staff on these issues and is working to respond fully to your February 28 letter.

The history relevant to the LightSquared matter goes back more than a decade. I am attaching a summary chronology for the Committee's information. As the chronology reflects, the Commission has taken very seriously all interference issues raised by the Ancillary Terrestrial Component (ATC) to Mobile Satellite Service (MSS), including potential interference from LightSquared's proposed commercial service. At the same time, the Commission has also emphasized the critical importance to our Nation's economic growth and global competitiveness of making spectrum available for mobile broadband. That goal is vital and must be achieved without compromising national security or public safety.

Accordingly, as interference concerns regarding MSS/ATC operations have been raised, the Commission has consistently worked to address and resolve them. In 2003, for instance, when the FCC established industry-wide rules authorizing the ATC offerings that recently have been at issue in the LightSquared matter, it adopted a regulation stating that "[i]f harmful interference is caused to other services by ancillary MSS ATC operations, either from ATC base stations or mobile terminals, the MSS ATC operator must resolve any such interference."<sup>1</sup>

Consistent with that longstanding rule, the Commission has taken effective steps to ensure that GPS interference concerns are resolved before LightSquared can offer commercial terrestrial service using the former SkyTerra L-Band spectrum. In March 2010, the Commission's International Bureau authorized the modification of SkyTerra's former MSS/ATC license to accommodate LightSquared's wholesale business plan. It

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did so only after all interference concerns raised at that time by the GPS industry had been resolved.<sup>2</sup> Similarly, after LightSquared sought a modification of its MSS/ATC authority in November 2010 to better reflect its wholesale business model, and the GPS industry raised a new “overload” interference concern for the first time, the International Bureau explicitly conditioned any commercial terrestrial operations by LightSquared under a waiver of the MSS/ATC rules on resolution of these concerns. Specifically, the Bureau required LightSquared, before it could commence its planned commercial operations, to participate in testing and analysis conducted by a technical working group to address “the interference concerns regarding GPS . . . to the Commission’s satisfaction.”<sup>3</sup> Last month, after the National Telecommunications and Information Administration (NTIA) informed the Commission of the results of government interference testing, the International Bureau issued a Public Notice seeking comment on whether to vacate its January 2011 *Conditional Waiver Order* “due to LightSquared’s inability to address satisfactorily the legitimate interference concerns.”<sup>4</sup> The proceeding initiated by that Public Notice remains open and provides all interested parties a full opportunity to comment.<sup>5</sup>

The Commission has employed thorough, public, and fair processes throughout its LightSquared proceedings. In particular, in response to your Question 1, it was appropriate for the Commission’s International Bureau to issue the orders your letter identifies. Under Parts 0 and 1 of the Commission’s rules, the International Bureau and the other FCC bureaus and offices are delegated authority to address a wide range of matters in the first instance, subject to review by the full Commission. Applications for approval of transfers of control of FCC licenses, as well as petitions for interpretation or waiver of rules, are decided at the staff level on delegated authority where the action involved is consistent with general Commission policy. Disposition of such licensing

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Similarly, in response to your Question 2, the time periods for comment on LightSquared's request for modification of its ATC authority in November 2011 were consistent with the Commission's rules and procedures, and they were sufficient to enable the GPS industry and many other commenters to participate actively in the modification proceeding. Only one party, CTIA, requested an extension of the original filing deadlines, and the Bureau extended the deadlines in response to that request.<sup>6</sup> Moreover, there was good reason for the International Bureau to avoid undue delay in considering a requested action that could facilitate the deployment of broadband services on under-utilized spectrum. LightSquared's filing involved familiar MSS/ATC operations and technologies and did not involve any change to the technical parameters of LightSquared's satellite and ATC transmitters. LightSquared's proposal involved only whether consumer devices would need to have both satellite and terrestrial capability in all cases and thus did not require significant technical or engineering review – with one exception. That one exception – presented during the comment period on the requested modification – was the newly raised concern about overload interference from LightSquared's ATC transmitters to GPS devices. Notably, the interference concerns were based on transmissions from LightSquared's base stations, yet LightSquared's request did not seek relief from any of the base station requirements. Nevertheless, the Bureau promptly and effectively addressed these overload interference concerns by creating an interference resolution process, so that any commercial service would not be permitted without prior resolution of the GPS interference issues. This process has yielded important information about GPS interference that the Commission and the public are now able to assess.

Your letter further inquires (Question 3) as to the Commission staff's reasons for adopting, in March 2010, two conditions on the SkyTerra/LightSquared transaction that required FCC approval before LightSquared could lease spectrum or make more than 25% of its network capacity available to the two largest wireless providers. Absent such conditions, LightSquared would have been able to avoid Commission review of wholesale transactions that could raise significant public interest issues. The Commission has rules, codified at 47 C.F.R. §§ 1.9001-1.9080, that generally provide for a review process for spectrum leasing and wholesaling by wireless providers. But at the time of the SkyTerra/LightSquared transaction, there were no comparable rules for MSS spectrum. The conditions proposed by LightSquared were accepted by the staff as part of its public interest analysis of this particular transaction because they helped to address this gap, which existed at the time. The Commission has since adopted a rule of general applicability that addresses the spectrum-leasing issue on an industry-wide basis and

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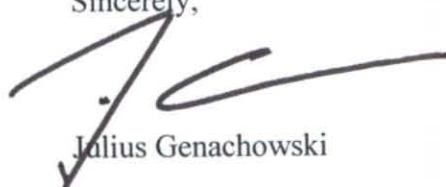
without reference to the market positions of the carriers involved in the lease arrangement.<sup>7</sup>

You asked (Question 4) why the International Bureau waived the integrated-service rule for MSS/ATC devices as to LightSquared. The Bureau explained the reasons for this action in its January 2011 *Conditional Waiver Order*. Those reasons included that LightSquared was (1) “already a significant and substantial provider” of MSS; (2) making significant efforts to rationalize narrow, interleaved portions of L-Band spectrum with Inmarsat which operates in the same band, thus supporting deployment of broadband MSS and MSS/ATC services in the band; (3) investing over \$50 million in dual-mode (that is, terrestrial and satellite) service and devices; (4) subject to “significant terrestrial buildout milestones”; and (5) committing as part of the waiver decision to take further actions that would “ensure consistency” with the underlying purposes of the FCC rule requiring integration of ATC and MSS operations, by requiring that LightSquared continue actively to market its MSS and to offer dual-mode devices at prices “competitive with similar terrestrial-only devices.”<sup>8</sup>

Finally, in response to your inquiry (Question 6) whether the Commission has independently evaluated the recent NTIA recommendations and related materials, the Commission has put out for public comment the questions raised by those materials. Initial comments were filed on March 16, 2012, and reply comments are due on March 30. After receiving those comments, the Commission and its expert technical staff will review the relevant materials, and the comments regarding them, as part of the ordinary decision-making process.

I appreciate this opportunity to respond to your questions.

Sincerely,

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Julius Genachowski

Enclosure

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CHAIRMAN

The Honorable Fred Upton  
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Committee on Energy and Commerce  
U.S. House of Representatives  
2125 Rayburn House Office Building  
Washington, D.C. 20515

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Dear Chairman Stearns:

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## LIGHTSQUARED MSS/ATC CHRONOLOGY

### 2001

- Commission issues *Notice of Proposed Rulemaking* to permit mobile satellite service providers to offer an ancillary component in response to requests filed by Mobile Satellite Ventures Inc. (predecessor of SkyTerra/LightSquared) and New ICO Global Communications.
  - Invites comment on whether the proposed rules would protect GPS systems. *See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band and the 1.6/2.4 GHz band*, IB Docket No. 01-185, *Notice of Proposed Rulemaking*, 16 FCC Rcd. 15,532 (2001).

### 2003

- Commission adopts rules permitting MSS licensees to integrate ATC into their satellite networks to provide mobile service to areas where satellite signals are degraded or blocked (*e.g.*, urban areas and inside of buildings). *See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands*, IB Docket Nos. 01-185, 02-364, *Report and Order and Notice of Proposed Rulemaking*, 18 FCC Rcd. 1962 (2003) (*2003 Order*), *as modified by Order on Reconsideration*, 18 FCC Rcd. 13,590 (2003).
  - Rules require MSS licensees to offer an integrated satellite and terrestrial service – they must maintain a viable satellite service and cannot offer terrestrial service separately.
  - Rules also allowed up to 1,725 terrestrial base stations to be deployed in the L-Band, including spectrum adjacent to and below the GPS band.

### 2004

- International Bureau authorizes SkyTerra (formerly Mobile Satellite Ventures), to offer an integrated MSS/ATC service to users equipped with dual-mode MSS/ATC mobile devices.
  - Consistent with *2003 Order*, SkyTerra is authorized to operate expansive ATC, including up to 1,725 terrestrial base stations in the L-Band. *See Mobile Satellite Ventures Subsidiary LLC Application for Minor Modification of Space Station License for AMSC-1*, File Nos. SAT-MOD-20031118-00333, SAT-AMD-20031118-00332, SES-MOD-20031118-01879, *Order and Authorization*, 19 FCC Rcd. 22,144 (IB 2004).

### 2005

- Commission modifies the MSS/ATC rules in response to petitions for reconsideration of the *2003 Order*. *See IB Docket No. 01-185, Memorandum Opinion and Order and Second Order on Reconsideration*, 20 FCC Rcd. 4616 (2005) (*ATC Reconsideration Order*).

- Removes the *2003 Order*'s limitation on the number of terrestrial base stations (1,725) that may be deployed, provided operations remain within specified technical parameters.
- Revised rules are consistent with the recommendations of the GPS industry and the Executive Branch (including input from the Department of Defense).
- Commission extensively discusses potential overload interference from SkyTerra's L-Band ATC base stations to Inmarsat mobile satellite terminals, as well as potential overload interference from 2 GHz ATC mobile devices operating above 1995 MHz to PCS mobile receivers operating in the adjacent band below 1995 MHz.
- No one raises GPS receiver overload interference issue.

#### **March-April 2009**

- Harbinger and SkyTerra together file an application for transfer of control of SkyTerra to Harbinger.
- SkyTerra files an application on April 29 for modification of its authority for an ancillary terrestrial component, including requests for waivers of a number of the Commission's rules for MSS/ATC operation.
- Commission invites public comment on both requests, triggering extensive comments.

#### **July-August 2009**

- GPS industry raises concerns about SkyTerra's application for ATC modifications, stating that the existing out-of-band emissions limits would be insufficient to protect against interference to GPS from LightSquared's planned low power base stations and indoor "femto-cells."
  - Out-of-band emissions are not the same as receiver overload, which is the basis of the current controversy.
  - No one raises GPS receiver overload issue.
- SkyTerra and the U.S. GPS Industry Council submit a joint letter to the Commission stating that the out-of-band emissions interference issues had been resolved. No commenter raises any other concerns about GPS interference.

#### **March 15, 2010**

- National Broadband Plan Recommendation 5.8.4 calls for the FCC to accelerate terrestrial deployment in the MSS spectrum.

#### **March 26, 2010**

- Commission's bureaus and offices issue two orders addressing the 2009 Harbinger and SkyTerra requests and comments:

**License Transfer Order** (SkyTerra Communications, Inc., Transferor and Harbinger Capital Partners Funds, Transferee Applications for Consent to Transfer Control of

SkyTerra Subsidiary, LLC, IB Docket No. 08-184, *Memorandum Opinion and Order and Declaratory Ruling*, 25 FCC Rcd 3059 (IB, OET, WTB 2010)).

- Authorizes the transfer of control from SkyTerra to Harbinger, explaining Harbinger's plans to construct a hybrid-satellite-terrestrial network that provides wholesale capacity, and noting Harbinger's plans to deploy a network that will cover 100 percent of the U.S. population via the satellite component and ultimately over 90 percent of the population via its terrestrial component.
- Observes that if Harbinger successfully deploys its integrated satellite/terrestrial network, it would be able to provide mobile broadband communications in areas where it is difficult or impossible to provide coverage by terrestrial base stations.
- Imposes conditions designed to ensure promised public interest benefits by requiring (1) build-out of MSS/ATC network and (2) Commission review of agreement involving a spectrum lease or provision of more than 25% of LightSquared's network capacity to top two wireless providers.
- *First Order* does not waive or alter MSS/ATC rules.

**License Modification Order** (SkyTerra Subsidiary LLC Application for Modification Authority for an Ancillary Terrestrial Component, *Order and Authorization*, 25 FCC Rcd 3043 (IB 2010)).

- Modifies SkyTerra's authorization to provide MSS/ATC, applying conditions to address all technical concerns raised in the comment cycle and granting a request to increase the power level of the base stations.
- Commission's bureaus coordinate with relevant Executive Branch agencies. *Second Order* notes DoD's concerns about potential interference to national security systems in certain circumstances and instructs the licensee to continue to work with DoD to resolve these concerns.
- No one raises GPS receiver overload interference issue.

#### July 15, 2010

- Commission follows National Broadband Plan recommendations and initiates a rulemaking to provide greater flexibility to deploy terrestrial service in the mobile satellite service. *See Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz*, ET Docket No. 10-142, *Notice of Proposed Rulemaking and Notice of Inquiry*, 25 FCC Rcd. 9481 (2010); *see also Report and Order*, ET Docket No. 10-142, 26 FCC Rcd 5710 (2011) (subsequent *Order*).

#### September 15, 2010

- GPS Industry Council files comments in MSS rulemaking proceeding that raise the possibility of receiver overload interference to GPS receivers at a distance of about 100 meters from ATC base stations based on state-of-the-art filtering, and state that for much of the mobile consumer GPS devices in use, including public

safety (e.g., 911 cellphones), the harmful interference effect would be somewhat worse.

- Council further states that “[i]n earlier Commission proceedings, the Council has worked collaboratively with MSS operators of ATC to seek mutual agreements that facilitate successful MSS ATC operations and avoid interference to the GPS installed base. The Council believes that solutions are available to mitigate the otherwise unavoidable harmful effects described in these comments and looks forward to working collaboratively with interested parties to explore these issues and potential solutions.” Sept. 15, 2010 Comments, ET Docket No. 10-142, at iii.

### **November-December 2010**

- November 15: LightSquared announces the successful launch of its first next-generation satellite, SkyTerra 1.
- November 18: LightSquared files a request to modify its MSS/ATC authority, consistent with the MSS/ATC rules, to accommodate its business plan of selling data network capacity at wholesale to other terrestrial service providers. The request seeks to allow those service providers to offer terrestrial-only handsets at the same power levels and conditions previously granted. *See* LightSquared Subsidiary LLC Request for Modification of its Authority for an Ancillary Terrestrial Component, SAT-MOD-20101118-00239.
- International Bureau places LightSquared’s November 18 request on *Public Notice*, with 10-day period for initial comments. *See* Policy Branch Information, Satellite Space Applications Accepted for Filing, Report No. SAT-00738, *Public Notice* (rel. Nov. 19, 2010).
- In response to an extension request from CTIA, Bureau extends comment deadline to December 2, 2010, with replies due December 9, 2010. *See* LightSquared Subsidiary LLC Request for Modification of its Authority for an Ancillary Terrestrial Component, SAT-MOD 20101118-00239, *Order* (IB, Sat. Div., rel. Nov. 26, 2010).
- In their filed comments, GPS industry, GPS users and federal interests object to LightSquared’s planned MSS/ATC deployment based on a concern about potential GPS interference due to “receiver overload”; argue that the under a wholesale business model, LightSquared would no longer be motivated to protect its own satellite service.
  - GPS community submits limited technical data and no mitigation proposal.

### **January 26, 2011**

- International Bureau issues *Conditional Waiver Order* modifying LightSquared’s authorization. *See* LightSquared Subsidiary LLC Request for Modification of its Authority for an Ancillary Terrestrial Component, SAT-MOD-20101118-00239,



*Order and Authorization*, 26 FCC Rcd 566 (IB Jan 2011)(*Conditional Waiver Order*).

- Denies LightSquared's request for a determination that LightSquared's proposal is consistent with existing MSS/ATC mobile terminal rules.
- Provides a conditional waiver of the MSS/ATC "integrated services" rule to allow LightSquared's wholesale customers to offer their retail users mobile terminals with only terrestrial capability, rather than "dual mode" handset capability (*i.e.*, the ability to communicate in a single handset or terminal via either a satellite or a terrestrial network).
- Imposes conditions to ensure that LightSquared will continue to provide a commercially competitive satellite service and will continue to develop and make available dual mode MSS/ATC-capable devices.
- Establishes a process to investigate the GPS overload interference issue and stipulates that *LightSquared may not offer commercial service until the process is complete and the risk of harmful interference has been resolved.*

#### **June-August 2011**

- Technical Working Group submits report concerning results of testing on the GPS receiver overload issues.
  - Commission issues *Public Notice* requesting comment on the report. *See* Comment Deadlines Established Regarding the LightSquared Technical Working Group Report, IB Docket No. 11-109, *Public Notice* (rel. June 30, 2011).
- LightSquared states it will not utilize the upper 10 MHz of the L-Band in order to satisfy interference concerns.
- Commission receives over 3,000 comments in the interference resolution proceeding.

#### **September 2011**

- Commission releases *Public Notice* requiring additional testing. *See* Status of Testing in Connection with LightSquared's Request for ATC Commercial Operating Authority, IB Docket No. 11-109, *Public Notice* (rel. Sept. 13, 2011).

#### **February 2012**

- NTIA files letter in the interference resolution proceeding stating that it has monitored the testing done through the interference resolution process and has coordinated additional testing of LightSquared's equipment by other federal agencies. NTIA concludes that LightSquared's proposed mobile broadband network will impact GPS services and there currently is no practical way to mitigate the potential harmful interference from LightSquared's planned terrestrial operations in the 1525-1559 MHz band.
- International Bureau issues *Public Notice* seeking comment on whether it should (1) vacate the January 2011 *Conditional Waiver Order* "due to LightSquared's

inability to address satisfactorily the legitimate interference concerns surrounding its planned terrestrial operations” and (2) modify LightSquared’s license “to suspend indefinitely LightSquared’s underlying ATC authorization, first granted in 2004, to an extent consistent with the *NTIA Letter*.” International Bureau Invites Comment on NTIA Letter Regarding LightSquared Conditional Waiver, IB Docket No. 11-109, Public Notice (rel. Feb 15, 2012).

- Comments on Public Notice due (after extension) on March 16; replies due on March 30. *See* LightSquared Technical Working Group Report, IB Docket No. 11-109, *Order* (IB rel. Feb. 29, 2012).