

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Service Rules for the 698-746, 747-762 and 777-792 MHz Bands)	WT Docket No. 06-150
)	
Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band)	PS Docket No. 06-229
)	
Amendment of Part 90 of the Commission’s Rules)	WP Docket No. 07-100

**COMMENTS OF LIGHTSQUARED SUBSIDIARY LLC ON THE FOURTH FURTHER
NOTICE OF PROPOSED RULEMAKING**

LightSquared Subsidiary LLC (“LightSquared”) hereby submits these comments in response to the *Third Report and Order* (the “*Third R&O*”) and *Fourth Further Notice of Proposed Rulemaking*¹ (the “*Fourth Further Notice*”) in these dockets. The *Third R&O* adopted LTE as the common technology platform for the nationwide public safety broadband network.² The *Third R&O* also stayed most of the mandatory partnership rules.³

In the *Fourth Further Notice*, the Commission considers and proposes additional requirements to further promote and enable nationwide interoperability among public safety broadband networks operating in the 700 MHz band. LightSquared urges the Commission to develop interoperability rules that facilitate the widespread deployment and use of dual-mode satellite-terrestrial devices throughout the public safety network. In particular, we urge the

¹ *In the Matter of Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, Amendment of Part 90 of the Commission’s Rules, Third Report and Order and Fourth Further Notice of Proposed Rulemaking, WT Docket No. 06-150, PS Docket No. 06-229, and WP Docket No. 07-100 (FCC 11-6) (January 26, 2011).*

² *Id.* at ¶ 10.

³ *Id.* at ¶ 13.

Commission to adopt a liberal build-out and hardening waiver policy for agencies that deploy satellite-enabled dual-mode devices.

Background

LightSquared (formerly “SkyTerra Subsidiary LLC”) was originally authorized to provide MSS in the L-band in 1989, and has been providing MSS service since 1996.⁴

LightSquared’s satellite service is used by tens of thousands of first responders who need reliable nationwide coverage regardless of the availability of terrestrial networks or conditions on the ground.⁵

LightSquared became the first MSS licensee authorized to provide MSS/ATC service in 2004.⁶ In late 2007, LightSquared reached a groundbreaking agreement with Inmarsat to radically improve the spectrum efficiency of L-band, allowing narrowband L-band spectrum to be reconfigured into 10 MHz blocks suitable for integrated satellite and terrestrial broadband services. Late last year, LightSquared launched a \$600 million next-generation MSS satellite that will dramatically enhance satellite capabilities. LightSquared is also in the process of

⁴ *Amendment of Parts 2, 22 and 25 of the Commission’s Rules to Allocate Spectrum for and to Establish Other Rules and Policies Pertaining to the Use of Radio Frequencies in a Land Mobile Satellite Service for the Provision of Various Common Carrier Services*, Order and Authorization, 4 FCC Rcd 6041 (1989); *remanded by Aeronautical Radio, Inc. v. FCC*, 928 F.2d 428 (D.C. Cir. 1991); Final Decision on Remand, 7 FCC Rcd 266 (1992); *aff’d*, *Aeronautical Radio, Inc. v. FCC*, 983 F.2d 275 (D.C. Cir. 1993); *see also AMSC Subsidiary Corporation*, 8 FCC Rcd 4040 (1993).

⁵ The Department of Justice (DOJ)-Wireless Management Office and the FBI pioneered the Satellite Mutual Aid Radio Talkgroup (SMART) program on LightSquared’s network, resulting in the first ever Federal, state, local, and tribal interoperability system on a nationwide network. DOJ is also nationally deploying 300 LightSquared devices to all of its law enforcement components, including ATF, DEA, FBI, and the US Marshals Service. LightSquared’s communication network also has been critical for several states and federal agencies in times of natural disaster, including Gulf Coastal states during and post-Hurricane Katrina and in Kentucky during the 2009 ice storms, as well as in Haiti during disaster relief efforts.

⁶ *See Mobile Satellite Ventures Subsidiary LLC Application for Minor Modifications of Space Station License for AMSC-1, Minor Amendment to Application for Authority to Launch and Operate a Next-Generation Replacement MSS Satellite, Application for Minor Modification of Blanket License for Authority to Operate Mobile Earth Terminals with MSAT-1*, 19 FCC Rcd 22144, at ¶¶ 18-26 (2004).

deploying its terrestrial 4G network that will use the same LTE standard the FCC has mandated for the public safety network.

LightSquared has invested tens of millions of dollars to spur development of a dual-mode satellite-terrestrial device ecosystem. Dual-mode devices and LightSquared's high-power MSS satellite network will allow users to access LightSquared's satellite and terrestrial networks -- and any other network LightSquared's partners choose -- with devices that are identical in form to today's PDAs and smartphones.⁷ With satellite-enabled devices that access multiple networks, no longer will first responders have to maintain separate satellite phones for wireless communications beyond the reach of terrestrial networks and when terrestrial networks are inoperable. The same devices first responders carry every day will be capable of accessing LightSquared's satellite anytime and essentially anywhere for mission-critical communications, regardless of conditions on the ground.

In October 2010 LightSquared emphasized its commitment to the public safety community by creating an Emergency Rapid Response Communications Team (ERRT). The ERRT is a multi-pronged approach to enable LightSquared's satellite communications services to connect first responders and public safety personnel during emergencies even if terrestrial wireless and landline systems are compromised in emergency situations. Specifically, the team provides on-call mobile satellite communication services, personnel and equipment for emergency support to federal, state and local first responders and public safety agencies to disaster locations throughout North America.

⁷ In October 2010 LightSquared announced that Qualcomm Incorporated is integrating L-Band LTE technology in its mainstream chipset roadmap. Qualcomm also has developed an advanced satellite air interface technology called EGAL (Enhanced Geostationary Air Link), which enables the satellite mode of operation in mobile devices. Qualcomm is adding L-Band LTE and EGAL to standard Qualcomm products.

Discussion

I. The Record Reflects Widespread Agreement That Satellite Capability Will Greatly Enhance Coverage and Resiliency of the Public Safety Network

The many challenges of planning and financing a nationwide, interoperable broadband network for public safety users have forced the FCC to be creative and persistent in its search for practical solutions. Nearly ten years have passed since the tragic events of September 11, 2001 brought widespread consensus that the nation needs such a network. In that decade, almost every aspect of public safety network design and operation has been the subject of intense debate. Yet throughout the FCC's efforts to bring the network to fruition, a consensus persists among public safety and others regarding the great value of a satellite component to the public safety communications network. The commenters have stressed the unique ability of satellite communications to provide coverage and survivability.⁸

September 11th exposed the grave shortcomings of our patchwork of non-interoperable public safety communications systems, and Hurricane Katrina revealed the importance of satellite communications because of the vulnerability of terrestrial networks to the same disasters that create the need for emergency response in the first place.⁹ With broad support, in 2007 the FCC's *Second Report and Order*¹⁰ established the basic framework of a planned public/private partnership. In that order, the FCC required the Upper 700 MHz D Block licensee to "make

⁸ See, e.g. Comments of National Public Safety Telecommunications Council, WT Docket No. 06-150, PS Docket No. 06-229 (filed June 20, 2008) (stating that NPSTC "supports the notion of incorporating satellite or other nonterrestrial networks in at least one handset").

⁹ In the wake of Katrina then-Chairman Kevin Martin testified at a Senate committee hearing, "[i]f we learned anything from Hurricane Katrina, it is that we cannot rely solely on terrestrial communications." See Hearing on Communications in a Disaster Before the S. Comm. on Commerce, Science and Transportation, 109th Cong. 7 (2005) (statement of Kevin J. Martin, Chairman, FCC).

¹⁰ *Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010*, PS Docket No.06-229, WT Docket No. 96-86, *Second Report and Order*, 22 FCC Rcd 15289 (2007) ("*Second Report and Order*").

available to the Public Safety Broadband Licensee at least one handset that would be suitable for public safety use and include an integrated satellite solution capable of operating both on the 700 MHz public safety spectrum and on satellite frequencies.”¹¹ In advance of the Upper D Block auction in 2008, the Public Safety Spectrum Trust (“PSST”), the public safety licensee of the adjacent block of 700 MHz spectrum, released a “Bidder Information Document” that outlined its expectations for the network. That document included a section addressing the need for satellite device and service requirements.¹²

Although the Upper D Block auction did not attract a winning bid, commenters continued to support inclusion of a satellite component to make network coverage truly nationwide and available to all first responders.¹³ Leap Wireless International, Inc. acknowledged that “[f]or areas without terrestrial network coverage, the Commission could ensure that public safety officials have adequate service by . . . permitting the carrier to use other alternatives for satisfying coverage requirements (e.g., satellite).”¹⁴ The Mississippi Department of Public

¹¹ *Id.* at ¶ 405; *see also*, 47 C.F.R. § 90.1410(g) (“The Upper 700 MHz D Block licensee must offer at least one handset suitable for public safety use that includes a seamlessly integrated satellite solution pursuant to the terms, conditions, and timeframes set forth in the [Network Sharing Agreement].” The *Third R&O* stayed § 90.1410(g) and other network sharing rules because of the failure of the D Block auction.

¹² *See* Public Safety Spectrum Trust Public/Private Partnership Bidder Information Document, Version 2.0, November 1, 2007.

¹³ *See, e.g.*, Comments of Northrop Grumman Information Technology Inc., WT Docket No. 06-150, PS Docket No. 06-229, at 6, n. 9 (June 20, 2008) (supporting the use of Mobile Satellite Services to provide coverage to remote, sparsely populated areas); Reply Comments of the American Association of State Highway and Transportation Officials, WT Docket No. 06-150, PS Docket No. 06-229, at 9 (filed July 7, 2008) (stating that supplementing terrestrial coverage with space-based satellite systems is a viable option); Reply Comments of Leap Wireless International, Inc., WT Docket No. 06-150, PS Docket No. 06-229, at 8-9 (filed July 7, 2008) (finding that “[s]atellites provide unrivaled coverage and are often insulated from catastrophic events on the ground”); Reply Comments of the National Public Safety Telecommunications Council, WT Docket No. 06-150, PS Docket No. 06-229, at 12 (filed July 7, 2008) (stating that “the overall population coverage requirement may be . . . made instantly operational through satellite links”); Reply Comments of the Public Safety Spectrum Trust Corporation, WT Docket No. 06-150, PS Docket No. 06-229 (filed July 7, 2008) (proposing that the Commission require satellite coverage and service requirements); Reply of the Satellite Industry Association, WT Docket No. 06-150, PS Docket No. 06-229, at 3 (arguing that “satellites are unique in their ability to provide ubiquitous service coverage and withstand terrestrial disasters”).

¹⁴ Comments of Leap Wireless International, Inc., WT Docket No. 06-150, PS Docket No. 06-229, at 13 (filed June 20, 2008).

Safety, which faced first-hand the effects of damaged terrestrial networks after Hurricane Katrina, noted that satellites “demonstrate their importance in serving hard to reach geographic areas or underserved areas in the United States for basic and emergency communications.”¹⁵ In joint comments five other public safety associations all supported deployment of dual-mode satellite-enabled devices.¹⁶

The PSST has also maintained consistent support for an integrated satellite solution:

The PSST always has supported an integrated satellite solution as an important element . . . as satellite capability will be an essential component in the [public safety broadband network]. This is true not only because the geographic coverage required by public safety could not be fully accommodated through terrestrial deployment due to the cost, but also because we have learned that satellite communications may be the best and possibly the only means available during certain catastrophic events.¹⁷

II. The Commission Should Adopt Policies and Rules that Facilitate the Deployment and Use of Dual-Mode Devices

Commenters in this proceeding who have addressed the topic have almost universally acknowledged the benefits of making available end-user devices with integrated satellite capability. No one has suggested any other solution that would provide nationwide coverage, including the most remote areas, while also ensuring critical links are available to first responders even when disasters have taken terrestrial networks down. But individual public safety agencies, even those serving relatively large jurisdictions, cannot reasonably be expected

¹⁵ See Letter, Mississippi Department of Public Safety, WT Docket No. 06-150, PS Docket No. 06-229 (filed May 22, 2008).

¹⁶ Joint Comments of the American Association of State Highway and Transportation Officials, the Congressional Fire Services Institute, the Forestry Conservation Communications Association, the International Association of Fire Chiefs and the International Municipal Signal Association, WT Docket No. 06-150, PS Docket No. 06-229 (filed November 3, 2008).

¹⁷ Comments of the Public Safety Spectrum Trust Corporation, WT Docket No. 06-150, PS Docket No. 06-229, WT Docket No. 96-86, at 28 (filed November 3, 2008).

to have dual mode devices designed and manufactured and, more importantly, do not have adequate resources to do so.

The *Fourth Further Notice* seeks comment on whether the Commission should impose robustness and hardening requirements¹⁸ and tentatively concludes that public safety networks should be required to meet minimum coverage and performance standards.¹⁹ While it is reasonable to apply such requirements, these requirements must find a delicate balance: they must ensure that public safety networks are sufficiently robust while not making the networks too expensive for cash-strapped agencies to build in the first place. The risk of setting the bar too high is especially acute in the poorest and least populated areas – the very areas that are least likely to be able to support seamless coverage and extensive hardening.

The *Fourth Further Notice* acknowledges the challenge by noting that “[d]evices are a critical component of system interoperability, particularly during the early phases of system deployment.”²⁰ And it anticipates the solution by asking about “the possibilities of adding satellite capability to public safety LTE devices” and by noting that “multiple mode devices may provide additional coverage.”²¹ It is necessary for the Commission to adopt minimum coverage and robustness standards for public safety networks when construction is complete. But the Commission should also endeavor to give agencies as much flexibility as possible to begin building and using those networks even when funding for full deployment is not immediately available.

¹⁸ *Fourth Further Notice*, at ¶ 70.

¹⁹ *Id.* at ¶¶ 71-73.

²⁰ *Id.* at ¶ 119.

²¹ *Id.* at ¶ 122.

A liberal build-out and hardening waiver policy for agencies that deploy satellite-enabled dual-mode devices would yield major benefits for the public safety network. First, it would give agencies (and their funding taxpayers) flexibility in their deployment planning while ensuring essentially 100% outdoor coverage of the service area from the first day of service. Second, it would ensure that even after the network is fully built, first responders have reliable links when terrestrial service has been interrupted. Finally, far more first responders would have satellite-enabled devices capable of operating on high capacity 4G networks when available, yet always able to establish satellite links when needed. First responders equipped with a dual-mode device could travel to essentially any location in the United States to assist in disaster response with full confidence that the device they carry and use every day will provide coverage – even when traditional terrestrial networks may fail.

Conclusion

For these reasons, LightSquared recommends that the Commission adopt a liberal buildout and hardening waiver policy for public safety agencies that deploy dual-mode, satellite-enabled devices.

Respectfully submitted,

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