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March 24, 2006

VIA ECFS

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

Re: **Ex Parte Presentation,** Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands, IB Docket No. 02-364

Dear Ms. Dortch:

Iridium Satellite, LLC ("Iridium") hereby supplements the record in the above-referenced rulemaking to highlight the invaluable and unique public interest benefits the Iridium system can provide before, during, and after public safety emergencies. These emergency situations include natural disasters (such as hurricanes and earthquakes), manmade disasters (such as terrorist attacks), and military operations (such as the U.S. troop deployments in Iraq and Afghanistan). As detailed below, and as confirmed by Iridium's operation using additional spectrum on a special temporary basis during recent public safety emergencies,[1] Iridium's access to an additional 2.25 MHz of shared spectrum on a fulltime basis is in the public interest.

Providing Iridium access to this additional spectrum will help the Commission achieve important public policy goals expressed recently by Chairman Martin and all of the FCC

[1] Iridium is attaching two computer generated images of the Gulf Coast Region to this filing. These images illustrate the increase in Iridium voice traffic after Hurricane Katrina. *See* Exhibit A.

Commissioners.[2] Specifically, it will ensure that there is adequate spectrum available for users of Iridium's mobile satellite services in the event of an emergency. As the Commission stated in its recent order granting additional spectrum to 2 GHz MSS operators, "satellite technology can provide first responders with valuable service during emergencies."[3] In that recent situation, the Commission found that "public safety and national security considerations" weighed heavily in its decision to assign additional MSS spectrum to the two existing licensees.[4] Similarly, with an additional spectrum grant, Iridium can help the U.S. achieve its public safety and national security goals in ways that no other MSS provider can.

Furthermore, now is the appropriate time to grant Iridium fulltime access to additional spectrum. Having access to additional spectrum today will provide first responders and emergency preparedness planners adequate time to drill, practice, and integrate this technology into their lifesaving disaster preparedness plans. As you are aware, manmade and natural disasters, including terrorist attacks, can strike without warning and it is critically important that the U.S. have emergency preparedness plans in place, that incorporate Iridium's technology, before the next emergency. Indeed, during testimony before the U.S. Senate, FCC Chairman Martin recognized that the U.S. needs to have a national emergency preparedness plan in place now that incorporates effective satellite communications technology.[5] As a result, the Commission just recently afforded the remaining 2 GHz MSS licensees, TMI Communications and Company Limited Partnership and ICO Satellite Services, additional spectrum to "enable them to bring it into use more quickly, and so they can offer public safety services more quickly...."[6] Iridium's immediate access to an additional 2.25 MHz will provide even faster results since its system is already operational and ready to integrate the new spectrum.

Iridium's ability to put the spectrum to immediate use is evidenced by its temporary use of this spectrum during Hurricanes Rita and Katrina to meet increased demand. At that time, first responders, consumers, and the press recognized the public safety benefits provided by Iridium mobile satellite phones.[7] Notably, several of Iridium's customers praised the availability

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[2] *See Use of Returned Spectrum in the 2 GHz Mobile Satellite Service Frequency Bands*, FCC 05-204 (rel. Dec. 9, 2005) (urging greater reliance on robust and reliable satellite services as part of U.S. emergency planning); *see also Public Safety Communications from 9/11 to Katrina: Critical Public Policy Lessons: Hearing Before the Subcomm. on Telecoms. and the Internet of the H. Comm. on Energy and Commerce*, 109th Cong. (Sept. 29, 2005) (statement of Kevin J. Martin, Chairman, Federal Communications Commission) (same); *see also Report to Congress on the Study Assess Short-Term and Long Term Needs for Allocations of Additional Portions of the Electromagnetic Spectrum for Federal, State and Local Emergency Response Providers* at Appendix C (Federal Communications Commission Dec. 19, 2005) (same).

[3] *Use of Returned Spectrum in the 2 GHz Mobile Satellite Service Frequency Bands*, FCC 05-204, ¶ 28 (rel. Dec. 9, 2005)

[4] *Id.* at ¶ 44.

[5] *See Communications in a Disaster: Hearing Before the Comm. on Commerce, Science, and Transp.*, 109th Cong. (Sept. 22, 2005).

[6] *Id.*

[7] *See, e.g.*, Sarmad Ali, *Reliable Connections Broaden Demand for Satellite Phones*, WALL ST. J., Nov. 3, 2005, at B1; *see also* Tony Trujillo, *Intelsat Senior Executive Testifies Before the U.S. House of Representatives on*

and reliability of the Iridium system during this recent natural disaster. For example, one fire department in the Gulf Coast Region credits Iridium for keeping its first responders connected to the department and to each other when thousands of other responders lacked similar connectivity:[8]

> As a captain with the Sulphur Fire Department in Louisiana, I can attest first-hand to the power of Iridium's mobile satellite communications service in a large scale disaster . . . [t]he Iridium-based unit enabled us to be in constant contact with our department over 200 miles away while standing in 12" of water at the scene.[9]

Moreover, Brigadier General Mark A. Graham, Deputy Commanding General of the Fifth United States Army/Army North, who was tasked with setting up Operational Command Posts in New Orleans to evacuate displaced persons from the Superdome and the Greater New Orleans area stated that his team "provided our [their] communications using Iridium satellite phones . . . ."[10] With the assistance of Iridium satellite phones, Brigadier General Graham was able to establish command and control liaison team nodes at four separate locations including the Superdome and the New Orleans Airport.[11] Thanks to the professionalism and hard work of Brigadier General Graham and his team, and their ability to communicate with local, state, and federal officials, they were able to coordinate the evacuation of over 65,000 displaced persons in a 72-hour period.[12]

As a result of Iridium's proven ability to assist emergency personnel, Iridium has received orders for over 10,000 satellite phones since Hurricane Katrina devastated the Gulf Region.[13] And significantly, Iridium has been offering these critical communications capabilities to both private and public sectors while operating with roughly 1/6th as much spectrum as one of its competitors. In fact, the Commission recognized that Iridium should have access to additional spectrum to meet public safety needs when it granted Iridium a special temporary authority to operate in the wake of Hurricane Katrina. With additional fulltime access, Iridium can provide even more effective communications services and our nation will not

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Importance of Satellites in Disaster Recovery, WIRELESS AND SATELLITE BROADCASTING NEWSLETTER, Sept. 1, 2005, at 9.

[8] Letter from Captain Brandon Blalock, Office of the Fire Chief, Sulphur Fire Department, to Chairman Kevin Martin, Federal Communications Commission (Oct. 21, 2005).

[9] *Id.*

[10] *Hurricane Katrina: Managing the Crisis and Evacuating New Orleans: Hearing Before the Senate Comm. on Homeland Security and Governmental Affairs*, 109th Cong. (Feb. 1, 2006) (statement Brigadier General Mark A. Graham, Deputy Commanding General of the Fifth United States Army/Army North).

[11] *Id.*

[12] *Id.*

[13] Iridium users in the Gulf Region alone include the DHS Office of Infrastructure Protection, Federal Air Marshals, FEMA, HHS, U.S. Coast Guard, NORTHCOM, National Guard, Air National Guard, American Red Cross, and NASA first responders.

only be better prepared for the next emergency, but, will have enhanced military communications capabilities.

Iridium is the *only* MSS operator that can provide communications capabilities 24 hours a day, 7 days a week over every surface on Earth—including rural areas and Alaska. It cannot be overemphasized how important this capability can be in preparing for and recovering from disasters. As explained in the paragraphs that follow, Iridium can offer this unparalleled service because its system was designed to provide vital communications services during natural and manmade disasters.

Iridium's system does not require a large number of Earth stations or terrestrial components that must be placed in areas that are subject to damage and failure during an emergency to operate. The communications industry learned from Hurricane Katrina that even the most robust communications facilities that are located on Earth can fail during an emergency. These terrestrial communications facilities are vulnerable to damage from high winds, flooding, lack of power, and terrorist attacks.

Iridium's system, however, is virtually impervious to terrestrial disruption. As Chairman Martin stated, while testifying before the Senate, "[i]f we learned anything from Hurricane Katrina, it is that we cannot rely solely on terrestrial communications."[14] Iridium understands the important point that Chairman Martin made, and is uniquely positioned to act on it. In the Iridium system, call switching is done at the satellite instead of on the ground. Consequently, a call made from an area of manmade or natural disaster will be transmitted directly to an Iridium satellite and traverse the system via inter-satellite links. These links enable Iridium to send the call to another handset without ever relying upon the terrestrial infrastructure in the damaged area. Alternatively, the call can be routed through a switch in an unaffected area and sent to *any* landline or wireless system in the U.S. or the world, including secure networks. No other satellite or terrestrial system can do this.

Moreover, other MSS providers must rely on Earth stations that are located in or near an impacted area for their systems to be fully operational.[15] Iridium operates a more robust and redundant system. Iridium can provide its 24/7 service to every location on Earth from one Earth station. To ensure complete operational redundancy and geographical diversity, however, Iridium operates two Earth stations, located in Arizona and Hawaii (the Hawaii station is located on a Department of Defense protected site), and Iridium is building another backup facility in Alaska. Iridium located its Satellite Network Operations Center in Leesburg, Virginia and maintains a back-up facility in Chandler, Arizona. Iridium also has redundant TT&C facilities located in Canada and Iceland. Because Iridium intentionally located its Earth stations in areas

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[14] Arshad Mohammed and Yukki Noguchi, *Crisis Communications Network Criticized; FCC Chairman Urges More Mobile, Rugged System as Firms Prepare for Rita*, WASH. POST, Sept. 23, 2005, at A12.

[15] And, even when their systems are fully operational, they still cannot provide service to every location on Earth.

that are less susceptible to natural and manmade disasters, its system is less likely to suffer a catastrophic communications failure than other MSS systems.[16]

Iridium's network does not have *any* blind spots. Iridium is the only MSS operator with a truly global footprint. Thus, it is the only provider that can meet the Commission's call for spotless MSS coverage: "a robust interoperable [satellite] network must be able to function in all areas served by emergency responders, including areas where communications infrastructure is degraded or non-existent."[17] Iridium can provide communications services over every landmass and body of water on the planet. This includes the northern most tip of Alaska. This makes Iridium uniquely positioned to serve the public interest. Unlike every other MSS operator, a disaster could never strike in a location that we could not provide communications.

Iridium is constantly investing in research and development (R&D) to better meet the communications needs of first responders, military, and government users. Iridium has successfully completed beta tests of its new "Netted Iridium" push-to-talk (PTT) voice and data service with the help of the U.S. Marine Corps Warfighting Lab. Iridium developed this netted capability to respond to military, security, and emergency response users' requests for a reliable rapidly deployable over-the-horizon communications capability. And Iridium's defense customers have stated that this product is invaluable. It will allow users to talk or transmit data to many users simultaneously and will deliver netted communications for teams responsible for command and control, logistics, and critical information relay across dispersed areas.

Also, Iridium recently released a small-sized data modem to respond to homeland security, military, and industrial users' needs. This modem, which can fit into the palm of your hand, allows users to track assets and containers including products that enter the U.S. by railcar, tractor trailer, or through our sea ports. Thus, this product can help protect the safety of valuable U.S. assets. For example, Iridium's low cost data module is an effective tool for container location and conditions used by the Port Authority of New York and New Jersey ("PANYNJ"). Through the Iridium system and Impeva Labs' cutting edge technology, logistics managers will be able to monitor the location, security and internal conditions of assets in transit, anywhere and any time. This system securely notifies the PANYNJ within minutes of a container experiencing an abnormal event such as unauthorized entry or location deviation regardless of location.

Iridium provides uniquely secure communications. Iridium uses a unique and inherently secure proprietary wave form technology that enables it to transmit critical sensitive information across its network. In particular, Iridium utilizes private and dedicated digital communications channels that are virtually impossible to intercept. This structure allows Iridium to designate certain communications with priority access status. Also, Iridium uses NSA-

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[16] Every other MSS system has a "bent pipe" system where all call switching is done on the ground and therefore requires an Earth station in the footprint of every satellite for its system to function in that area. Such MSS systems can be just as vulnerable as terrestrial systems in times of disaster.

[17] *Report to Congress on the Study Assess Short-Term and Long Term Needs for Allocations of Additional Portions of the Electromagnetic Spectrum for Federal, State and Local Emergency Response Providers* at Appendix C (Federal Communications Commission Dec. 19, 2005).

approved type 1 secure encryption. Moreover, Iridium provides unparalleled information security because it can transmit voice and data traffic directly to the Department of Defense gateway via inter-satellite links. During emergencies it can be vitally important and in the public interest that calls be routed over the most secure network possible.

More Iridium satellite phones are already deployed to military personnel who can be critical first responders in emergencies. Of all the MSS providers, Iridium has the largest contract with military users. The Department of Defense uses approximately 25,000 Iridium satellite phones. So, not only are Iridium phones already deployed and in the hands of military personnel who respond to public safety emergencies, but those responders have been trained in how to use Iridium satellite phones as evidenced by Brigadier General Graham's ability to set up a vital communications network upon his arrival in New Orleans. This embedded base of satellite phones provides a public safety and public interest benefit because critical first responders, such as the Fifth United States Army/Army North, will not have to wait to receive satellite phones or learn how to use them after an emergency occurs.

Also, it is critical that first responders be connected to medical personnel and hospitals during emergencies. In response to this clear need, Iridium has begun to provide an integrated voice and data application to connect helicopter operators (particularly medevac helicopter pilots) with hospitals and emergency personnel. Medevac helicopters use Iridium to transmit information such as flight times, text messaging, weather requests, engine monitoring, flight tracking, medical emergency support, and E-mail. Iridium's system has proved ideal for medevac communications.

Fulltime shared access to additional spectrum serves the public interest better than Iridium having to obtain special temporary authority after a disasters strikes. After Hurricane Katrina, government officials recognized that MSS services could have served the public interest better if more satellite phones were deployed before the storm and incorporated into emergency preparedness plans.[18] As observed in a recent news article, "[i]ncorporating satellite components . . . before a disaster strikes provides critical redundancy and access to immediate communications that can be easily and quickly deployed to increase the effectiveness of disaster recovery and relief efforts."[19]

Granting Iridium fulltime access to additional spectrum in a timely manner will facilitate effective implementation of essential disaster recovery plans. Fulltime access should result in more satellite phones being deployed before disasters strike, greater familiarity with how satellite phones operate, recovery plans that do not rely exclusively on terrestrial communications, and ultimately less disaster-related loss. While STA-based access is vitally important in emergency situations, fulltime access, as the Commission has recognized, would enable an MSS operator to

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[18] *See, e.g., Public Safety Communications from 9/11 to Katrina: Critical Public Policy Lessons: Hearing Before the Subcomm. on Telecoms. and the Internet of the H. Comm. on Energy and Commerce*, 109th Cong. (Sept. 29, 2005) (statement of Kevin J. Martin, Chairman, Federal Communications Commission) (urging greater use of satellite communications technology); *see also* Trujillo, *supra* note 7, at 9.

[19] Trujillo, *supra* note 7, at 9.

respond even more effectively to emergencies by eliminating the delay between a disaster and grant of an STA.[20] As noted by the Commission in its recent 2 GHz Order, making additional spectrum available to a satellite provider can have an immediate impact on how well the nation will be prepared for the next emergency.[21]

Another reason why an STA-based approach is not ideal is because it can take MSS operators time (up to 24 hours or more) to test and validate their systems before they can make new spectrum available. Often, the first few hours following a disaster is the most critical time for responding to an emergency. Emergency responders must have access to the spectrum before the disaster strikes to respond effectively once it does strike. This is why fulltime access is so necessary.

The importance of robust emergency preparedness plans cannot be stressed enough. The U.S. will be better prepared if more emergency responders can practice and train on Iridium's system now, before the next disaster strikes. Fulltime licensed access to additional spectrum will allow this; an STA-based approach will not. Also, a public safety emergency in the Washington, D.C. area could impair the FCC's ability to grant STAs. Finally and importantly, national security users prefer not to file for STAs and identify where they will need increased access to spectrum.

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For the foregoing reasons, it would be in the public interest for the Commission to grant Iridium access to an additional 2.25 MHz of shared spectrum on a fulltime basis. By acting on Iridium's request, the Commission will ensure that vital public policy goals, such as the creation of more robust disaster recovery plans, are realized.

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[20] *Report to Congress on the Study Assess Short-Term and Long Term Needs for Allocations of Additional Portions of the Electromagnetic Spectrum for Federal, State and Local Emergency Response Providers* at Appendix C (Federal Communications Commission Dec. 19, 2005) (recognizing that MSS operators are able to respond more rapidly to disasters when they are operating under existing licenses); *see also Public Safety Communications from 9/11 to Katrina: Critical Public Policy Lessons: Hearing Before the Subcomm. on Telecoms. and the Internet of the H. Comm. on Energy and Commerce*, 109th Cong. (Sept. 29, 2005) (statement of Kevin J. Martin, Chairman, Federal Communications Commission).

[21] *See Use of Returned Spectrum in the 2 GHz Mobile Satellite Service Frequency Bands*, FCC 05-204, ¶ 28 (rel. Dec. 9, 2005)

Sincerely,

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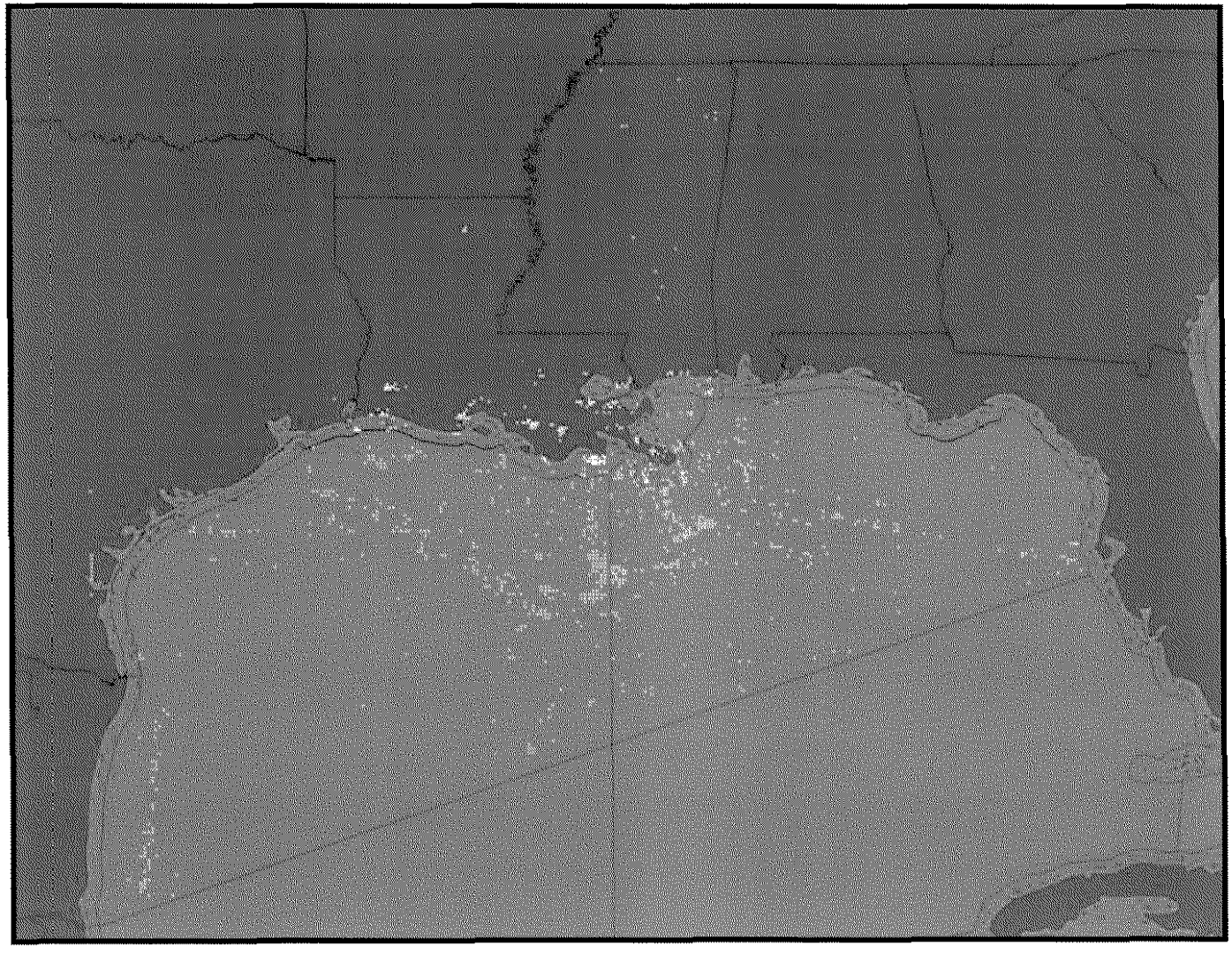
cc (via e-mail): Chairman Martin, Fred Campbell, Commissioner Tate, Aaron Goldberger Commissioner Copps, John Giusti, Commissioner Adelstein, Barry Ohlson, Donald Abelson, Robert Nelson, Howard Griboff

EXHIBIT A

Iridium Voice Traffic in the Gulf Region
August 19, 2005



Iridium Voice Traffic in the Gulf Region
September 2, 2005