

Written Statement of

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**Hearing on
Public Safety Communications from 9/11 to Katrina:
Critical Public Policy Lessons**

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OPENING

Mr. Chairman, members of the Committee, on behalf of the Satellite Industry Association, I would like to thank you for holding this hearing today on public safety communications and the lessons learned from 9/11 and Hurricanes Katrina and Rita. I would also like to express my thanks to Chairman Martin, Commissioners Copps, Abernathy, and Adelstein and the staff of the Federal Communications Commission. Their tireless efforts have greatly assisted us in supplying critical telecommunication resources to the Gulf Coast Region.

Satellite communications played a critical role during the response to these manmade and natural disasters. When the telephone and broadcast networks went down, satellites remained on the job. Satellites connected emergency personnel and other first responders. Satellites reunited families. Satellites reconnected communities. And, satellites enabled the world to witness the devastation of these disasters and also the many acts of heroism.

Although the performance of satellite systems was impressive, their use has often been limited by a lack of preparation. Had satellite systems been more effectively integrated into our emergency communications network, many of the communications problems that occurred in Alabama, Louisiana, and Mississippi recently, and New York City after 9/11 would have been substantially mitigated. As FCC Chairman Martin recently stated, "if we learned anything from Hurricane Katrina, it is that we cannot rely solely on terrestrial communications".

Today, I will highlight;

- (1) The diversity and versatility of the commercial satellite systems operating today;
- (2) The role that these satellite systems played in recent manmade and natural disasters; and
- (3) The importance of better integrating satellite systems into future national security and emergency preparedness communications.

As we discuss how Katrina affected Alabama, Louisiana, and Mississippi, it's important we apply the lessons we learned to improve disaster relief and recovery telecommunications in the future.

As of September 21st, nearly three weeks after Hurricane Katrina inflicted its damage on the terrestrial communications network in the New Orleans area, only 60 percent of the cell phone networks were working properly, 70 percent of the broadcast stations were functioning, and roughly two million calls were still failing. On the other hand, and in stark contrast to the failures in the terrestrial networks, fixed and mobile satellite services were nearly 100 percent operational on September 21st, just as they were on Aug. 28th, Aug. 29th, Aug. 30th, Aug. 31st, and the hours and days immediately following Katrina.

There have been calls for a new communications network for first responders and funding for new technologies and networks that can withstand such disasters. Satellites can and should be an integral part of these new networks. The required capacity is available today from commercial satellite operators and is widely available to corporations, government users and consumers across the globe. The intelligent integration of satellite and terrestrial technologies can create the communication system that our first responders deserve.

TERRESTRIAL VS. SATELLITE

Hurricane Katrina's destruction of terrestrial communications facilities in the Gulf region, and therefore the services upon which citizens rely, was extraordinary. As we know, almost three million customer telephone lines were knocked down in Louisiana, Mississippi, and Alabama. In addition to these wire-line failures, local wireless networks also sustained considerable damage, with more than 1,000 cell sites out of service. Approximately 100 broadcast stations were knocked off the air, and finally, hundreds of thousands of cable customers also lost service.

The resulting lack of communications infrastructure severely impeded the ability of first responders and others in their disaster relief and recovery efforts.

The satellite industry and our satellite network infrastructure were not as affected by Hurricane Katrina. This is partially because satellites orbit high above the problems on the ground. In the hours, days, and weeks following these disasters, satellite networks provide critical communications capabilities to emergency personnel and a vital information link for

all citizens -- whether via satellite radio, satellite television, or via fixed satellite broadband networks or mobile satellite telephony.

While the outages on terrestrial networks surged in the days following Katrina, satellite networks were seamlessly handling a corresponding surge -- in demand for capacity.

And I am happy to report to you today that our satellite voice, video, and data networks performed exactly as they were designed to perform -- providing reliable and redundant communications solutions in times of crisis.

I would like to take you through some of the examples of how satellites performed in the wake of Hurricane Katrina.

SATELLITE QUICKLY STEPPED IN TO PROVIDE INSTANT INFRASTRUCTURE

Mobile Satellite Services

Within minutes of the disaster, those with satellite phones along the Gulf Coast turned to us for immediate telecom access. As those minutes turned to hours and then to days, more and more first responders found that satellite telephones provided a dial tone that other networks simply could not.

FEMA, The National Guard, the Red Cross, state and local first responders, utility workers, reporters, people in search of relatives, and even local phone companies were among those using satellite phones to communicate in the aftermath of Hurricane Katrina. The Red Cross quickly deployed nine specially-designed Emergency Communications Response Vehicles (ECRV's). Each vehicle was equipped with 10 satellite phones and portable, tripod-mounted VSAT satellite dishes.

Over 20,000 Globalstar, Iridium and Mobile Satellite Ventures (MSV) satellite phones and terminals were deployed to the region in the days immediately following Hurricane Katrina. In just the first 72 hours of the disaster, Iridium satellite telephone traffic alone in the region increased more than 3000 percent, while the number of subscribers increased more than 500 percent. Globalstar service centers activated satellite phones at an average rate of 1,400 per

day (versus an average of 80 on a typical day). MSV saw approximately a 400 percent increase in traffic in the region and provided satellite terminals to numerous emergency responders, including FEMA's Urban Search and Rescue teams.

CNN and Fox News used an Inmarsat mobile satellite terminal as the hurricane came ashore to provide live video reporting. One CNN van (Hurricane 1) was crushed by a falling roof after filming the arrival of the hurricane's eye-wall – fortunately, the crew was not injured, and the Inmarsat terminal survived intact.

Stratos Global, a reseller of Iridium, Globalstar and Inmarsat capacity and equipment, also deployed a team to provide free phone calls home for victims at shelters set up throughout the affected area.

Whether providing critical telecommunications in the aftermath of Katrina or September 11th, the Mobile Satellite Services or MSS industry has positioned itself to uniquely provide ubiquitous, reliable, interoperable, secure, and redundant communications during times of crisis.

First responders, relief workers, political leaders, news professionals and others quickly clamored for additional phones, and despite the impressive statistics that I just cited, for each phone and terminal provided, countless other requests were unmet. Supplies were rationed and all of our companies had to beg, borrow and steal every handset and terminal they could find – both within the United States and abroad. In fact, many requests, including one from the House Sergeant-at-Arms office, had to be severely limited.

And while these mobile satellite service providers performed nearly flawlessly, the one portion of the satellite industry that has gone virtually unnoticed in these past few weeks, but has proven equally critical, is the FSS or fixed satellite services sector.

Fixed Satellite Services (FSS)

After Hurricane Katrina, the fixed satellite service providers and their resellers also stepped in immediately to provide instant infrastructure and emergency voice, video, and data

communications in the hard-hit areas. From transportable ATM machines to high-speed Internet access for families to stay connected, the organizations using these satellite communications ranged from federal, state and local government agencies to schools, churches and local relief organizations. Small businesses such as retail gas stations and convenience stores, and larger businesses such as insurance companies, financial institutions, and news organizations also used satellite capacity.

For example, Hughes Networks Systems immediately re-established Wal-Mart's satellite communications network, helping Wal-Mart become one of the 'life-support systems' for the local communities during their recovery.

Intelsat, Ltd. reconfigured capacity and donated service to help cellular providers such as Cingular, and Nextel/Sprint, and long distance carriers MCI, and AT&T re-establish their networks as well as provide capacity for emergency services via mobile vans for relief agencies, and mobile offices and command centers for the Department of Homeland Security and the Federal Emergency Management Agency.

PanAmSat donated satellite capacity to the Red Cross to provide communications to about 40 of their sites and deployed an experimental inflatable antenna at a Red Cross center in Biloxi used by evacuees to send email messages to family.

SES AMERICOM and AMERICOM Government Services donated satellite capacity to enable high-speed ship-to-shore communications for the USS Iwo Jima -- which carried disaster relief teams to New Orleans with amphibious construction equipment and medical personnel and supplies.

In addition, Intelsat, Loral Skynet, New Skies Satellites, PanAmSat, SES AMERICOM, and other FSS operators provided free satellite communications and satellite bandwidth to enable Internet connectivity as well as voice, video, and data channels to field hospitals and relief and rescue workers on the ground, in the air, and on the water. Also, without the help of the Department of Homeland Security's National Coordinating Center and their Telecom Industry Sector Advisory Committee (ISAC), the satellite industry-government coordination

that was accomplished, especially in those first 48 hours, would have been substantially more difficult.

Direct Broadcast Satellite (DBS) and Satellite Radio

In addition to the FSS and MSS sectors, the satellite broadcast community also played a key role, by helping to ensure there was an efficient method of communicating critical information to first responders and the general population within the areas affected by Hurricanes Katrina and Rita.

Both XM Satellite Radio and DirecTV provided FEMA and the Red Cross with a 24/7 dedicated broadcast station for disseminating hurricane-related information. XM's 24-hour channel called XM Emergency Alert (Channel 247) tracked the storm and reported on evacuation routes, and now provides updates about storm clean-up, road closures, school closings, and other vital information including information from the National Oceanic and Atmospheric Administration, the Department of Health and Human Services, the Department of Homeland Security and the Federal Emergency Management Agency.

Following the storm, XM launched a new channel called Red Cross Radio (Channel 248) which provides information directly to Red Cross workers located in the Gulf Coast, as well as Red Cross aid stations. XM has donated more than 200 radios for Red Cross workers to listen to the Red Cross Radio channel.

DirecTV also coordinated with FEMA and the Red Cross to offer live feeds -- free of charge -- to shelters and command centers throughout the area.

SATELLITE = REDUNDANCY + UBIQUITY + RESILIENCY

Something that we have been hearing repeatedly in the wake of Hurricane Katrina is the word 'interoperability' and the need for first responders to communicate seamlessly with each other during times of crisis. We in the satellite industry agree that first responders at the federal, state and local level need an interoperable communications system that can be rapidly deployed anywhere in the country. We also know that such communications

networks exist in the form of the applications we have just discussed that are being offered today by the mobile and fixed satellite industry.

Moreover, satellite operators are investing billions of dollars in next-generation systems that will offer new and even better services for the public safety community.

I believe one of the themes you have seen throughout my remarks here today is that satellites equal redundancy and ubiquity and resiliency. The real world examples that have presented themselves in recent years; 9/11, Operation Enduring Freedom, Operation Iraqi Freedom, the London Train bombings, and the hurricanes of 2004 and 2005, are a testament to the fact that without satellites there is no redundancy. And, without the redundancy, ubiquity and resiliency that satellite networks provide, terrestrial-only networks become useless following disasters.

RECOMMENDATIONS

Despite the tremendous contributions of the satellite industry to the rescue and recovery efforts in the Gulf region, barriers existed which prevented the full use of satellite resources.

- ? **Satellites should be regarded as an essential component in all future critical telecom network planning**

To enable rapid deployment and/or restoration and truly mobile communications, the Federal Government should incorporate satellite services and networks as a redundancy requirement in any communications network or architecture. **The Department of Homeland Security is currently examining a range of emergency communication proposals, including proposals to ensure interoperability. Satellite systems should be emphasized and included in the early planning of these initiatives.**

- ? **Satellite systems must be pre-deployed to a cadre of trained professionals**

The US military has long known that, to be effective, you must “train as you fight.” In other words, you must prepare for a crisis with the same intensity and dedication that you will need during the crisis. Past disasters have shown us that first responders must have the satellite

tools and training they need before an emergency happens. Today, availability of satellite capacity and satellite ground equipment for emergency preparedness requirements has been handled largely by relying on whatever excess capacity exists at the time. Hurricanes Katrina and Rita have demonstrated that this type of reliance is flawed and ultimately dangerous.

In the aftermath of the recent hurricanes in the Gulf Coast, when many terrestrial communications networks in the region were either totally or partially disabled, emergency responders were relying on satellite solutions. These solutions included satellite telephones, satellite bandwidth, as well as VSAT networks. The problem at that point was the availability of equipment and bandwidth to satisfy demands. Satellite phones became very difficult to find. VSAT equipment, in the quantities requested, was also nearly impossible to obtain, let alone ensure either timely importation or delivery to isolated locations.

Satellite handsets and small, modern, pop-up antennas and satellite phones could have been pre-positioned on-site prior to Katrina and available for immediate deployment in the aftermath. In the hands of first-responders this technology could have provided the communications necessary to deploy safety of life services to those who needed it without delay.

These products work today. They provide redundancy today. They work with other communications today. As such, **the Government needs to facilitate a wider pre-positioned deployment of these assets today by ensuring that satellite capacity and equipment become part of the comprehensive redundant communications solutions used by first responders during the planning stages, rather than at the last minute.**

? *Credentialing Satellite Personnel as First Responders*

The day after Katrina hit, satellite repair crews were ready to begin restoring service. Unfortunately, too many of these professionals couldn't get permission from officials to enter the area.

Given the increasingly critical role the satellite industry is playing in disaster relief and recovery, **satellite service providers and their engineers should be designated as first responders in the event of a major disaster and should be included in preparations for such events.** By credentialing such individuals and companies as first responders we can enable critical satellite infrastructure providers and others to get into the affected areas to restore vital capabilities without delay or interference.

? **Preserve and Protect Satellite Spectrum at Home and Abroad**

As discussed throughout this testimony, satellite networks are uniquely able to deliver redundant, reliable, and resilient communications services users and meet the unique demands of the public safety community for ubiquitous and interoperable communications.

The availability and widespread deployment of satellite networks, however, depends upon the satellite industry's access to sufficient spectrum. **Therefore, the satellite industry believes that 1) U.S. government policy must ensure that existing satellite spectrum be preserved and protected from harmful interference both at home and abroad; 2) the FCC's rules and policies should afford satellite operators sufficient technical flexibility to continue to meet the needs of the public safety community; and 3) the US Government should refrain from taking actions that undercut international allocations of spectrum for satellite use.**

CLOSING - WE ARE AN ESSENTIAL PART OF THE SOLUTION

Again, to recap our recommendations;

- 1) Satellites must be an essential component of future critical communications networks;
- 2) Satellite capacity and equipment must be pre-purchased and pre-positioned;
- 3) Satellite operators and personnel must be credentialed as first responders; and,
- 4) Satellite spectrum must be preserved, and protected from interference.

We in the satellite industry are justifiably proud of the crucial part we have played in disaster recovery efforts by providing vital communications to relief workers, government agencies, churches, families and journalists. However, we have also been frustrated by the knowledge

that we could have done much more. On behalf of the Satellite Industry Association, I urge this Committee to take steps to ensure that satellite systems are completely integrated into emergency planning and preparations so that the unique benefits our services offer can be fully exploited the next time disaster strikes.