



March 3, 2006

Members of the FCC Katrina Panel:

On behalf of the Satellite Industry Association¹ (SIA) and its member companies, I would like to describe some of the experiences of the satellite industry and the satellite user community following Hurricanes Katrina and Rita as well as offer a few lessons learned and recommendations to help improve our nations' and our industry's response to the 2006 Hurricane Season and beyond.

The SIA is a U.S.-based trade association providing worldwide representation of the leading satellite operators, service providers, manufacturers, launch services providers, and ground equipment suppliers. SIA represents the unified voice of the U.S. satellite industry on policy, regulatory, and legislative issues affecting the satellite business.

Satellite services played a critical role before, during, and after hurricanes Katrina and Rita. In many of the affected areas, satellites provided the ONLY source of communications in the hours, days, and weeks following hurricanes Katrina and Rita. By applying the lessons learned many of the communication problems encountered before, during, and after these types of natural disasters could be substantially mitigated in the future.

Almost three million customer telephone lines were knocked down in Louisiana, Mississippi, and Alabama. Local wireless networks also sustained considerable damage, with more than 1,000 cell sites out of service. In addition, approximately 100 broadcast stations were knocked off the air, as well as, hundreds of thousands of cable customers also lost service. The resulting lack of operable, terrestrial communications infrastructure severely impeded command and control functions, situational awareness, and therefore the disaster relief and recovery efforts of first responders. Fortunately, although not part of any federal, state or local emergency planning or training exercises, SIA member companies were able to make equipment and handsets available as quickly and broadly as possible to serve the communities.

However, the fundamental crisis in the lack of communications, command and control, and situational awareness could have been avoided, or, significantly mitigated. In contrast to the destruction and outages suffered by terrestrial-based networks, satellite

¹ SIA Executive Members Include: The Boeing Company; The DirecTV Group; Globalstar LLC; Hughes Network Systems LLC; ICO Global Communications; Intelsat Ltd; Iridium Satellite LLC; Lockheed Martin Corp; Loral Space & Communications Ltd; Mobile Satellite Ventures LP; Northrop Grumman Corporation; PanAmSat Corporation; SES Americom, Inc, and TerreStar Networks Inc; and Associate Members ATK Inc; EMC Inc; Eutelsat Inc; Inmarsat Ltd; IOT Systems; Marshall Communications Corp; New Skies Satellites Inc; Spacecom Corp; Stratos Global Corp; and XM Satellite Radio.

networks were both operable and able to handle a corresponding surge in demand for capacity; providing reliable, redundant, and nearly ubiquitous voice, video and data communications throughout the crisis and during the recovery process.

Organizations using satellite communications ranged from first responders at the federal, state and local government agencies to individuals, 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 satellites to communicate when all other means of communications failed.

While there has been much discussion of the need for “interoperability” since those events, satellite systems and networks ensured that the basic requirement of “operability” was met – a requirement that the terrestrial telephone, broadcast and land-mobile radio networks failed to meet.

Despite the capabilities and outstanding performance of the satellite systems and networks during hurricanes Katrina and Rita, and in the recovery operations, our members and their user community encountered several hurdles to leveraging these capabilities. These key hurdles included:

- ? **Denial of access for satellite technicians to restore services;**
- ? **Shortage of pre-positioned satellite equipment and funding;**
- ? **Difficulty using equipment and consequent dropped calls; and,**
- ? **Lack of electricity and battery power.**

The satellite industry would therefore like to further outline each of these issues and provide the following recommendations and potential solutions to avoid another “failure of initiative” in the future.

Problem: Satellite engineers and technicians denied access to restore networks

The day after Hurricane Katrina hit, satellite repair crews were ready to begin restoring service to their diverse customer base of individual users, large corporations, aid workers and relief organizations and small businesses throughout the affected areas. Because satellite technology was the only working technology in the immediate aftermath of the storms, satellite services were often the only means of communications and therefore a critical life-line for other terrestrial and wireless telecommunications services providers and aid workers.

Unfortunately, too many of these professionals could not get permission from federal, state, or local officials to enter the area to help restore communications.

Recommendation: CREDENTIAL SATELLITE TECHNICIANS

Satellite service providers and their engineers should be credentialed as emergency telecommunications service providers and in the event of a major disaster, must be

allowed access to help restore the networks that have been damaged or destroyed. This will ensure that both satellite and other telecommunications service providers are able to reconstitute their networks as soon as possible and thereby enable the flow of communications among first responders, law enforcement, and recovery and aid officials.

Problem: Shortage of satellite equipment and funding for first responders

Because satellite equipment was not pre-deployed, many satellite operators worked around the clock to arrange for shipments from across the country and even abroad to satisfy the surge in demand. Unfortunately, many shipping companies were closed over the holiday weekend and/or unable to handle quick shipment of equipment into the affected areas. In addition some airports in the most devastated areas were closed to commercial traffic -- that ban included planes carrying shipments of telecommunications equipment.

Further, neither the satellite network operators nor their service providers will be in a position to inventory the necessary mobile satellite communications equipment in quantities sufficient to meet demand following large disasters. Even if the equipment had been available, it would not have been possible to deploy experienced personnel to the affected areas to perform the training necessary to use the equipment.

For example, satellite phones could have been pre-positioned in Louisiana but most of the parishes had previously chosen to discontinue service because they could not afford the \$65 monthly fee. As noted in the recent House of Representatives study on Katrina, this proved to be a tremendous “failure of initiative”.

Money should be appropriated at the Federal, state, and local level specifically for the use of satellite equipment during natural disasters. In addition, to the extent that money is appropriated at the federal level for disaster preparedness, provisions should be made for there to be visibility into how the money will be spent to ensure that sufficient and appropriate communications equipment and service is included in their planning and that the states allocate funding for that purpose.

Recommendation: PRE-POSITION SATELLITE EQUIPMENT AND CAPACITY

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.

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

Therefore, the government needs to facilitate a wider pre-positioned deployment of these assets by ensuring that satellite capacity and equipment become a required part of the comprehensive redundant communications solutions used by first responders during the initial planning stages well before, and leading up to an event, rather than just as a last resort.

To ensure that the satellite communications services are readily accessible, it would be advisable that those who will be working in disaster relief and recovery areas and requiring communications services become thoroughly familiar with satellite services and equipment well in advance of the event by receiving training and regular access to practice using the equipment. Though not complicated, the equipment is sufficiently different from cellular telephone – type technology; therefore a modicum of training is necessary.

Furthermore, to enable rapid deployment and/or restoration and truly mobile communications, the Federal Government should incorporate satellite services and networks as a required 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.

Problem: Dropped calls and difficulty using satellite equipment

Numerous reports from first responders and the law enforcement community have indicated that even in situations in which satellite equipment was available, users had difficulty completing calls and maintaining connectivity. Also, agencies which had pre-positioned equipment, such as satellite phones, found that the equipment had not been adequately maintained.

Some issues mentioned as problems were:

- ? “satellite phones that did not work”
- ? “satellite provider had switched their telephone number without notifying them”
- ? “it took too long for calls to connect”
- ? “satellite dishes that were damaged during the storm had to be re-pointed or replaced”

RECOMMENDATION: EDUCATION AND TRAINING FOR FIRST RESPONDERS AND PREPOSITIONING EQUIPMENT

Over the years, mobile, i.e., handheld and portable satellite communications has become far easier to operate. No longer is it necessary to have trained radio or communications personnel present to operate the equipment. However, just as any other new emergency

communications equipment would require a certain level of familiarization, satellite communications equipment requires a similar level of training and familiarization.

In the field, the simplest of issues, e.g., the lack of clear “line of sight” or improper dialing of a satellite phone results in the failure of the user to gain access to the service. A significant portion, if not the majority of the problems encountered in the field with dropped calls are traceable to “operator error” resulting from lack of training/familiarity with the equipment.

To avoid these problems, it is highly advisable that appropriate training be arranged in advance of the disasters and that personnel regularly and routinely use the equipment. For the most part, the training can be provided by the satellite network operators and/or their service providers. This education and training parallels the basic training that first responders are regularly provided for all other types of equipment necessary in the provision of services, such as radios, medical equipment and vehicles.

Problem: Lack of electricity and battery power

As with all telecommunications providers in the gulf coast following the hurricanes, lack of electricity or access to generator or fuel was a problem. Just as the batteries on cellular phones, radios, and land mobile radios were depleting over time, so too were satellite phones.

RECOMMENDATION: EDUCATION AND TRAINING FOR FIRST RESPONDERS

First of all, Federal, state and local government agencies should conduct coordinated periodic exercises to insure that all communications capabilities including satellite equipment are functioning and that the first responders are able to use the communications facilities properly.

Basic education, such as the need to maintain a charge on the satellite phones just as you would for a cellular phone, had not been conveyed to the end users. Even though satellite phone batteries stay charged much longer than cellular phone batteries, they must still be checked on a regular basis and charged when required.

Even when users had access to charged satellite phones, they apparently did not have the training needed to operate them. For instance, the antenna on a satellite phone needs to have an unobstructed line of sight to the satellite, and will not work from a basement.

In addition, solar powered chargers could have been used had they been pre-positioned in the area and users trained to take advantage of them.

In some cases, satellite operators' lack of access to the affected area also resulted in an inability of the providers to reach the generators needed to power/recharge the earth station equipment.

In summary, the satellite industry offers the following recommendations to the FCC Katrina Panel in response to the issues and problems faced during the 2005 Hurricane Season.

- ? **CREDENTIALING Satellite Engineers and Technicians**
- ? **PRE-POSITIONING Satellite Equipment and Capacity**
- ? **EDUCATION and TRAINING for Federal, State, and Local First Responders**

To address the problems outlined in this letter before the 2006 hurricane season or the next emergency, satellites must be integrated into future emergency preparedness and response exercises, planning, and communications initiatives immediately. Satellite technology, services, and applications provide the basic operability and interoperability needed by the disaster relief and recovery community TODAY, and they are available TODAY.

Please let us know if you have any further questions. I can be reached at 202 349 3651 or dcavossa@sia.org.

Sincerely,



David Cavossa
Executive Director
Satellite Industry Association