



DISASTER RECOVERY MANAGEMENT WITH SATELLITE COMMUNICATIONS



SkyFidelity satellite helps customers and recovery teams communicate after a disaster

Introduction

Violent storms. Intense wildfire. Destructive earthquakes. They're all unexpected, but what you can expect during these devastating events is that there will be telecommunication disruptions. If you are a first responder, you need a recovery communications plan that includes SkyFidelity satellite service.

At SkyFidelity, we know that every second is valuable in an emergency. Communication failure is not an option, nor is waiting for traditional terrestrial infrastructure repairs. Emergency communication solutions are the backbone of your rescue efforts. That's why we've designed reliable, rugged satellite solutions for rapid deployment by anyone at your portable command center.

Overview

Natural disasters can dramatically alter the quality of life, the geographic landscape, and economic health of the affected region. For countries with economic centres and communities in coastal areas, the economic damage of natural disasters can be staggering.

According to The International Disaster Database (EM-DAT), 196 natural disasters occurred in 2011 worldwide, affecting over 85 million people. The estimated amount of economic damage came close to US\$290 billion. Combined with the amount spent on natural disaster recovery and response-related activities, the cost for worldwide natural disasters is estimated to be US \$380 billion.

With a distinct upward trend for economic damages caused by natural disasters (Figure 1), emerging technologies are becoming more important in lessening the impact of natural disasters. Early detection and management not only helps to save the people who are affected but also helps the rest of the connected global economy contribute to recovery and stabilization.

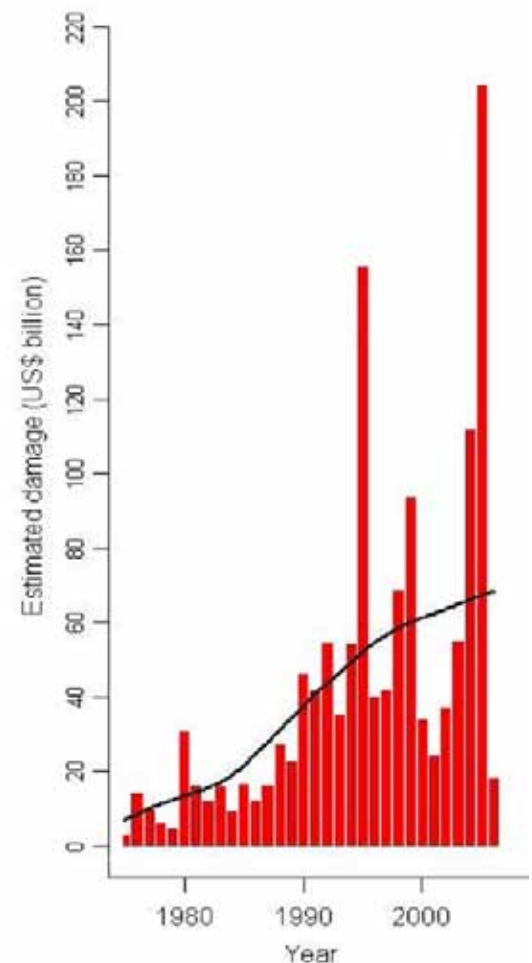


Figure 1: Estimated damage caused by reported natural disasters from 1975-2011 (Source: WHO Collaborating Centre for Research on the Epidemiology of Disasters)

SATELLITE & NATURAL DISASTERS

How can satellite play a part in early detection and management of natural disasters? Satellite communication provides a reliable way to transmit routine and critical information, even during intense weather events. When cellular service is unavailable or congested because too many people are trying to use the limited number of voice connections, satellite technology can fill in these communication gaps to ensure reliable and consistent information link when it is needed the most.

WEATHER MONITORING

Early detection of natural disasters is a considerable part of public preparedness and safety. This type of weather monitoring often involves detecting and monitoring unusual geographic or weather fluctuations. A variety of environmental elements can be monitored, including:

- **Strength of coastal tides**
- **Rain levels, wind speed, temperature**
- **Air pressure and air quality**

With the variety of sensors, mechanisms and barometers that are used to collect this data, aggregating critical information in a timely manner can be a challenge. Satellite is an efficient way to collect and transmit data from weather instruments or data loggers connected to sensors. This technology also offers the added benefit of near-real-time data frequency, transmitting as frequently as needed at any time of the day.

By collecting full weather information in real time, governments can model events that may affect public safety. Communities can be advised in advance of the high risk areas and how to protect

themselves. Disaster warnings can also be issued earlier allowing the necessary precautions or plan evacuation procedures to be executed before the high-risk event occurs.

WARNING SYSTEMS

When weather monitoring is in place and information is being transmitted, the next step is finding a method for disseminating warnings when a natural disaster may hit. Disaster warnings can be achieved through a variety of warning systems, including satellite.

Television and radio broadcasting are two common methods for circulating disaster warnings. According to FEMA, some North American cities have even begun broadcasting warnings via SMS text messages. While these methods can be extremely effective when the weather is good, there are reliability issues during extreme weather. Without electricity or operational radio/cell phone towers, relying on SMS as a warning system is not sufficient.

Satellite terminals are a reliable way to monitor and activate/deactivate siren warning systems. They also provide the additional benefits of providing a reliable communication link for reporting the functional status of warning systems and sirens as well as checking for maintenance issues before a disaster occurs.

FLEET MANAGEMENT

Congestion is another issue with cellular networks. As telecom carriers sell more subscriptions, offer more high-bandwidth services and transition between technologies, getting a cellular connection reliably can sometimes be problematic.

Weather can also detrimentally affect the availability of cellular services. When Hurricane

Sandy hit the eastern U.S. in 2012, 25% of all cellular towers in 10 states were knocked out, leaving thousands without communications. In those cases, fleet managers could not track the location of their vehicles or communicate with their drivers.

Since satellite service for tracking applications is uniformly available and not susceptible to the same network congestion, technology change or weather issues, it is an excellent backup communication option for when cellular service is not available. It allows fleet managers who value control of their assets to have complete visibility of their fleet and their operations at all times.

POST-DISASTER RESOURCE MONITORING

When a natural disaster occurs, the geographic landscape changes, putting many natural resource and resource management systems at risk, most significantly clean drinking water. For communities near oceans, rivers or mountains, the ground and surface water quality is most often at risk. After Hurricane Sandy, the United States Geological Survey (USGS) used measurement tools in existing wells to monitor water concentrations of nutrients, sediment, and contaminants in order to accurately report water safety information to the general public.

Many wells and pump systems are equipped with sensors to monitor water fluctuations like volume, flow, and sediment. After an emergency, sending out employees to check on these sensors can be dangerous as well as impractical. Satellite can help with this issue. Equipping existing sensors and measurement tools with satellite terminals provides a method for transmitting water quality data in real time without the costs and time delays associated with sending employees to manually check the system.



SkyFidelity Solutions

Our high-speed, low-latency VSAT system supports the applications you need for recovery communications: email, fax, VoIP, Tool Tip, streaming data, video—whatever your requirements are, we'll customize a system that supports your disaster recovery communications plan.

Whether you are running a routine emergency preparedness drill or are on-site at a disaster, you'll have broadband disaster response remote communication capabilities that will save time, money, but, most importantly, lives.

Best Equipment

Our turnkey mobile communications trailer is self-contained, towable by even small vehicles, and can establish a disaster recovery communications hotspot in as little as 10 minutes. SkyFidelity rapid deployment systems are rugged, business-grade products that are designed to be easy to maintain and transport, and are simple enough to use that even untrained personnel can operate them.

Dedicated emergency solutions

For urgent disaster recovery communications needs or on a short-term basis, SkyFidelity offers several options. SkyFidelity will expedite any order to get it exactly where it's needed, when it's needed, giving you one less issue to worry about.

Conclusion

Satellite communication can play a critical role in predicting the effects of natural disasters through weather monitoring, issuing warnings and managing post-disaster logistics. This is especially true when radio or cellular networks are unavailable due to lost power or congested because too many people are trying to use the limited number of voice connections.

From routine to critical information, satellite can be integrated into existing monitoring systems and to create a reliable communication link to vehicles, sensors and mobile workers. It can even be used to increase the frequency at which data is sent from remote sites. Overall, remote monitoring with satellite technology provides a critical role in disaster warnings, preparedness, and post-crisis management.



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