

# ENSURING OPERABILITY DURING CATASTROPHIC EVENTS

---

## HEARING

BEFORE THE

### SUBCOMMITTEE ON EMERGENCY PREPAREDNESS, SCIENCE, AND TECHNOLOGY

OF THE

### COMMITTEE ON HOMELAND SECURITY HOUSE OF REPRESENTATIVES

ONE HUNDRED NINTH CONGRESS

FIRST SESSION

OCTOBER 26, 2005

**Serial No. 109-49**

Printed for the use of the Committee on Homeland Security



Available via the World Wide Web: <http://www.gpoaccess.gov/congress/index.html>

U.S. GOVERNMENT PRINTING OFFICE

34-529 PDF

WASHINGTON : 2007

---

For sale by the Superintendent of Documents, U.S. Government Printing Office  
Internet: [bookstore.gpo.gov](http://bookstore.gpo.gov) Phone: toll free (866) 512-1800; DC area (202) 512-1800  
Fax: (202) 512-2250 Mail: Stop SSOP, Washington, DC 20402-0001

## COMMITTEE ON HOMELAND SECURITY

PETER T. KING, New York, *Chairman*

DON YOUNG, Alaska	BENNIE G. THOMPSON, Mississippi
LAMAR S. SMITH, Texas	LORETTA SANCHEZ, California
CURT WELDON, Pennsylvania	EDWARD J. MARKEY, Massachusetts
CHRISTOPHER SHAYS, Connecticut	NORMAN D. DICKS, Washington
JOHN LINDER, Georgia	JANE HARMAN, California
MARK E. SOUDER, Indiana	PETER A. DEFAZIO, Oregon
TOM DAVIS, Virginia	NITA M. LOWEY, New York
DANIEL E. LUNGREN, California	ELEANOR HOLMES NORTON, District of Columbia
JIM GIBBONS, Nevada	ZOE LOFGREN, California
ROB SIMMONS, Connecticut	SHEILA JACKSON-LEE, Texas
MIKE ROGERS, Alabama	BILL PASCRELL, JR., New Jersey
STEVAN PEARCE, New Mexico	DONNA M. CHRISTENSEN, U.S. Virgin Islands
KATHERINE HARRIS, Florida	BOB ETHERIDGE, North Carolina
BOBBY JINDAL, Louisiana	JAMES R. LANGEVIN, Rhode Island
DAVE G. REICHERT, Washington	KENDRICK B. MEEK, Florida
MICHAEL MCCAUL, Texas	
CHARLIE DENT, Pennsylvania	
GINNY BROWN-WAITE, Florida	

---

## SUBCOMMITTEE ON EMERGENCY PREPAREDNESS, SCIENCE, AND TECHNOLOGY

DAVE G. REICHERT, Washington, *Chairman*

LAMAR S. SMITH, Texas	BILL PASCRELL, JR., New Jersey
CURT WELDON, Pennsylvania	LORETTA SANCHEZ, California
ROB SIMMONS, Connecticut	NORMAN D. DICKS, Washington
MIKE ROGERS, Alabama	JANE HARMAN, California
STEVAN PEARCE, New Mexico	NITA M. LOWEY, New York
KATHERINE HARRIS, Florida	ELEANOR HOLMES NORTON, District of Columbia
MICHAEL MCCAUL, Texas	DONNA M. CHRISTENSEN, U.S. Virgin Islands
CHARLIE DENT, Pennsylvania	BOB ETHERIDGE, North Carolina
PETER T. KING, New York ( <i>Ex Officio</i> )	BENNIE G. THOMPSON, Mississippi ( <i>Ex Officio</i> )

# CONTENTS

Page

## STATEMENTS

The Honorable Dave G. Reichert, a Representative in Congress From the State of Washington, and Chairman, Subcommittee on Emergency Preparedness, Science, and Technology .....	1
The Honorable Bill Pascrell, Jr., a Representative in Congress From the State of New Jersey, and Ranking Member, Subcommittee on Emergency Preparedness, Science and Technology .....	2
The Honorable Bennie G. Thompson, a Representative in Congress From the State of Mississippi, and Ranking Member, Committee on Homeland Security .....	4
The Honorable Charlie Dent, a Representative in Congress From the State of Pennsylvania .....	45
The Honorable Norman D. Dicks, a Representative in Congress From the State of Washington .....	40
The Honorable Nita M. Lowey, a Representative in Congress From the State of New York .....	42
The Honorable Michael McCaul, a Representative in Congress From the State of Texas .....	34
The Honorable Mike Rogers, a Representative in Congress From the State of Alabama .....	46

## WITNESSES

### PANEL I

The Honorable Mark Rey, Under Secretary, Natural resources and Environment, U.S. Department of Agriculture:	
Oral Statement .....	5
Prepared Statement .....	7
Dr. David Boyd, Director, SAFECOM, Office of Interoperability and Communications, U.S. Department of Homeland Security:	
Oral Statement .....	10
Prepared Statement for the Record .....	12
Dr. Peter Fonash, Deputy Manager, National Communications System, U.S. Department of Homeland Security:	
Oral Statement .....	18
Prepared Statement .....	20
Mr. Ken Moran, Director, Office of Homeland Security, Enforcement Bureau, Federal Communications Commission:	
Oral Statement .....	25
Prepared Statement .....	27
Dr. Linton Wells, II, Acting Assistant Secretary, Networks and Information, Integration and Chief Information Officer, U.S. Department of Defense	
Oral Statement .....	29
Prepared Statement .....	31



## ENSURING OPERABILITY DURING CATASTROPHIC EVENTS

---

Wednesday, October 26, 2005

U.S. HOUSE OF REPRESENTATIVES,  
COMMITTEE ON HOMELAND SECURITY,  
SUBCOMMITTEE ON EMERGENCY PREPAREDNESS,  
SCIENCE, AND TECHNOLOGY,  
*Washington, DC.*

The subcommittee met, pursuant to call, at 10:42 a.m., in Room 311, Cannon House Office Building, Hon. David Reichert [chairman of the subcommittee] presiding.

Present: Representatives Reichert, Rogers, Harris, McCaul, Dent, Pascrell, Sanchez, Dicks, Harman, Lowey, Christensen, and Thompson (Ex Officio).

Mr. REICHERT. The Committee on Homeland Security, Subcommittee on Emergency Preparedness Science and Technology will come to order. The subcommittee will hear testimony today on ensuring operable communications during catastrophic events. I would first like to welcome our witnesses and thank them for taking time out of their busy schedules to be here with us today.

We are here today to discuss a topic that is fundamental in preparing our State and local communities to respond to a major disaster or terrorist attack. The purpose of this hearing is to examine the problem of responding effectively and efficiently to catastrophic incidents when the everyday communication infrastructure is severely damaged or destroyed. I would like to welcome our witnesses once again who are joining us today, and each of you bring a wealth of knowledge and I look forward to hearing from each of you on how the government can insure operability during a catastrophic event. The ability to communicate is absolutely essential to mounting a well-coordinated response to any catastrophic event.

First responders, Federal State and local officials cannot establish meaningful command and control in the absence of functioning communications system. Last month we heard testimony on incident command and control. We learned that communication is absolutely critical to having a unified approach to respond to a catastrophic event.

In the absence of communication and effective planning, incident command and control is severely hindered. An incident commander may have difficulty in establishing situational awareness. The operations chief must be able to issue instructions to first responders in the field to direct resources and personnel to areas of most need. Without the ability to call for help, citizens cannot reliably seek medical or other emergency assistance, as demonstrated by Hurri-

cane Katrina command and control directly depends upon the ability of all levels of government to communicate effectively with one another.

Since the events of September 11th of 2001, many in the media and Congress have focused rightly on a problem of interoperability. Simply stated, interoperability is the ability of the public safety agencies to communicate with one another via radio communications systems to exchange voice and/or data with one another on demand in real-time when needed. Until September 11, however, many people just assumed that first responders from different disciplines could easily communicate with one another. Unfortunately, that was not the case. The inability of the New York City police, fire and emergency medical services personnel to communicate with one another effectively undoubtedly led to the loss of lives in the World Trade Center.

Four years later, the inadequate response to Hurricane Katrina has highlighted a separate but equally fundamental problem. Before first responder equipment can be interoperable, their equipment must first be operable. Interoperability presumes the existence of an operable communications network. As we saw in the aftermath of Hurricane Katrina, there can be no guarantee of communication. Communications operability in the aftermath of a catastrophic natural disaster. Hurricane Katrina destroyed more than 3 million customer telephone lines in Louisiana, Mississippi and Alabama. The region's wire line network sustained enormous damage. A thousand cell sites were completely out of service.

Of the 41 broadcast radio stations located in New Orleans and the surrounding areas, only two AM radio stations and two FM radio stations remained on the air in the wake of the hurricane. As a consequence, first responders had no choice but to rely on the old fashioned paper relays to communicate critical information between emergency operation centers and the field. And on a personal note, I know that communication is one of, if not the most important aspect in handling and controlling stressful and high impact critical incidents. Back in 1999 I was deeply involved as one of the leaders in managing the WTO riots in Seattle as the sheriff in King County.

And I know if we didn't have the ability to communicate with the various agencies, multitude of agencies who were partners in that effort to bring peace and control back to the city of Seattle, we would have been in serious trouble. I believe it is critical that we have coordination between the Department of Homeland Security, other Federal departments and State and local officials, to assume operability during a catastrophic event. The Chair now recognizes the ranking minority member of the subcommittee, the gentleman from New Jersey, Mr. Pascrell for any statement he may have.

Mr. PASCRELL. Mr. Chairman, I want to thank you for holding a timely hearing on an issue of profound importance, an issue that this committee and its full committee has discussed time and time again. Indeed, ensuring communications operability during a catastrophic event can result in the significant reduction of lives lost. For this fact alone, the Congress and this committee must do everything in our power to ensure that the operational elements of

communications systems throughout our Nation's infrastructure can withstand an onslaught of a disastrous incident.

And as we have seen, Hurricane Katrina and Rita highlighted how this currently is not the case. Coordination of initial rescue efforts in the days immediately following the landfall of Hurricane Katrina were severely frustrated by the inability to communicate. The hurricane knocked out, and as this chairman has pointed out very succinctly, more than 3 million customer phone lines in Louisiana, Mississippi and Alabama. The hard wire telecommunications network sustained enormous damage, both to the switching centers that route calls and to the lines used to connect buildings and customers to the network. Now, according to the FCC, of the 41 broadcast radio stations, I want to reiterate this. It is very important to everybody on this committee. The ones that were located in New Orleans and the surrounding area, of all of those, only two AM and two FM stations remained on the air in the wake of the hurricane.

In a number of cases, reporters were actually asked to brief public officials on the conditions in the areas where information was not reaching them in any other way, which brings me to a subject that I talked about long before and the members of this committee long before there was a committee talked about, and that is what is the role of the FCC in all of this. What is the role of the FCC? Well, let's take a look at the national response plan which very clearly states in chapter and verse that providing on-call support to identify sources of radio frequency interference and to resolve civil frequency interference issues and frequency assignment requests that is the role, one of the roles of the FCC.

And it goes on to talk about the national communication system. This is all in the national response plan, all things that this committee, before it was a committee, when it was a select committee, discussed time and time again. The extension, the discontinuance and reduction of common carrier facilities, the control of common carrier rates, charges, practices, classifications. And I would say, before I go on with my opening statement, that before 9/11, the FCC did not do, did not respond to its own responsibilities with regard to providing the first responders of this country with the necessary networking, the necessary bands so that they could communicate with one another.

And since—past administration, this administration, didn't matter. And we have left our first responders out to dry. And somebody's got to be held accountable. Someone has to be held accountable. Now we are more interested in how many swear words are on radio and television, and more interested in how we can get conglomerates to get larger than we are at helping our first responders. This is our legacy right now. The New Orleans Police Dispatch Center and the New Orleans Fire Dispatch Center were flooded and had been evacuated already. 911 was totally inaccessible. The majority of public safety communications were simply not functioning.

Clearly, the absence of a reliable network across which first responders and State and local officials could coordinate severely impeded any response to this catastrophic event. We need to know how to ensure that a failure of this magnitude does not happen

again. After any major test of our response system, it is crucial to assess what worked and what did not work. The backbone of our Federal response is the national incident management system and the national response plan. These two documents must work in tandem.

In light of the Federal response to the Hurricanes Katrina and Rita, I believe that both documents must be reevaluated to improve the response and coordination for major disasters. Do the NRP and do—and is the NIMS, have they taken into account that possibility that during a disaster there may be an inability to communicate? Do State and local officials understand their roles within the national response plan and the NIMS? The answer to both appears to be no. And this must be improved. We know that communications is a DHS responsibility. We voted on this. Emergency support function number two of the national response plan gives the information analysis and infrastructure protection directorate the leading coordinating Federal actions to provide the required temporary emergency telecommunications and the restoration of the telecommunications infrastructure.

Again, another point Mr. Chairman. We had 7 days to prepare for these storms. We will not have seven seconds to prepare for a terrorist attack. What exactly is DHS doing to prepare for catastrophic events that wipe out communication systems? What have they done already?

And Federal agencies, such as the Department of Defense, the U.S. Forest Service, have hands-on experience in establishing communication in areas where they do not exist. What has DHS done to reach out to these agencies to assist them during catastrophic events? Are we at the right level of funding? Do we have the appropriate standards? Do we know the technological needs to adequately provide communications support to the State and local government agencies before, during and after a catastrophic event? So I look forward to the hearing, Mr. Chairman, and thank you for your due diligence.

Mr. REICHERT. Thank you, Mr. Pascrell. The Chair now recognizes the ranking minority member of the full committee, the gentleman from Mississippi, Mr. Thompson, for any statement that he may have.

Mr. THOMPSON. Thank you very much, Mr. Chairman, and I look forward to the testimony of our witnesses here this morning. In the past 2 months, Hurricanes Katrina, Rita and Wilma have devastated much of the gulf coast. I have spoken to local officials, mayors, firefighters and police officers throughout the gulf coast, and have heard uniformly about the inability to communicate between levels of government and first responder disciplines. While some progress has been made since the attacks on September 11, these hurricanes once again have revealed severe problems in our public safety communications infrastructure.

Many first responders still cannot talk with one another because their radios and communications network are not compatible. In many cases, the lack of proper equipment or the lack of radio spectrum are the root causes of the problem. Congress must act quickly to address these issues. However, compounding the problem in catastrophic events is the partial or total destruction of the commu-



nications infrastructure. During Katrina, cell and radio towers, 911 call centers and all switching centers were all damaged as a result of the wind and flooding and the subsequent loss of power. This was not an issue of interoperability, but of basic operability resulting from the damage. In the future, DHS and FEMA must not only increase its own communications capacity, but must give more assistance to local and State officials to get their capabilities back online.

As a former volunteer firefighter and local official, I know that the ability to communicate is essential in establishing command and control of an emergency situation. The Federal Government has the ability, assets and responsibility to help State and local governments achieve operability when the local infrastructure is overwhelmed. I look forward to the hearing from the witnesses today on how their agencies are looking at ways to coordinate with each other and adopt military and private sector communication technology for use in these catastrophic situations and how these efforts will benefit local first responders. Thank you, Mr. Chairman and I yield back

Mr. REICHERT. Thank you, Mr. Thompson. Other members of the committee are reminded that opening statements may be submitted for the record. We are pleased to have a distinguished panel of witnesses with us here today. We have the Honorable Mark Rey, Undersecretary of Natural Resources and Environment, the U.S. Department of Agriculture; Dr. David Boyd, Director of Office of Interoperability and Communication, U.S. Department of Homeland Security; Dr. Peter Fonash, deputy manager, National Communications System, U.S. Department of Homeland Security; Mr. Kenneth Moran, director, Office of Homeland Security Enforcement Bureau, Federal Communications Commission; and Dr. Linton Wells, II, Acting Assistant Secretary, Networks and Information Integration and chief information officer, U.S. Department of Defense.

Let me remind the witnesses, please, that their entire written statement will appear in the record. And we ask that due to the number of witnesses on our panel today that you strive to limit your comments and testimony to no more than 5 minutes. The Chair now recognizes the Honorable Mark Rey, Under Secretary for Natural Resources and Environment for the United States Department of Agriculture to testify.

#### **STATEMENT OF HON. MARK REY**

Mr. REY. Thank you for inviting me to talk with you today about the forest service and interagency partners experience with the incident command system and communications during emergency response. The Forest Service, the Department of the Interior agencies and our partners operate the largest wildland fire management program in the world. These agencies and partners pioneered the use of the incident command system as a component of the natural interagency incident management system in the early 1970s in order to respond to wild fires. Wild land firefighters realized that a standard organizational structure would help to communicate, set priorities and be more effective in a rapidly changing situation. The incident command system provides common terminology for posi-

tion titles, resources and facilities, common responsibilities for each position, common planning, common communications, common locations and common incident objectives. For large multi jurisdictional incidents, a unified command system is used.

The ability of the Forest Service and its partners to respond with trained and experienced personnel is based upon the interagency incident qualifications and certifications. The incident qualification and certification system is described in greater detail in my testimony. The Department of Homeland Security directed the use of the incident command system as part of the national incident management system in 2004 to organize incident management for all agencies on a nationwide basis. An example of the adaptability of the incident command system after September 11, 2001 is that the Forest Service trained the Fire Department of New York City in the incident command system.

In response to Hurricane Katrina, the Fire Department of New York incident management team assisted the New Orleans Fire Department initially in fire protection and then in the inspection of buildings and reopening fire stations in New Orleans. With regard to communications, effective communications are critical in all emergency responses. When the concept of the incident command system was developed, three components were identified involving communications. First, common terminology, including clear text; second, a communications plan to provide information to responders via radio; and third, an incident management plan to provide common written descriptions.

Over the past 30 years, these components have proven essential during the response to wild fires and other emergencies. Wildland firefighting agencies reduce the potential for radio frequency incompatibility problems by planning and providing communications systems during emergencies. The radio cache located at the National Interagency Fire Center is the largest civilian cache of radios in the United States. Fully half of those radios were devoted to the response to Hurricanes Katrina and Rita. I would like to say a few words about the Forest Service's involvement in the two incidents.

Forest Service response efforts covered the entire spectrum of the disaster. The Forest Service was tasked with more than 50 missions since requests for assistance from FEMA began shortly before Hurricane Katrina struck. Our interagency support peaked on October 1 with 29 incident management teams that used the incident command system in the management of their operations. Approximately 5,500 people, including 139 crews, all qualified in the incident command system were assigned.

In addition, 2,700 pieces of equipment and 20 helicopters and fixed wing aircraft were mobilized as well. In the days after Hurricane Katrina, interagency management teams managed all agency radio phone data communications, coordinated the receiving and distribution of trailers for housing and thousands of truckloads of supplies, provided evacuees with food, clothing and shelter and supported emergency medical operations at the New Orleans Airport. Interagency incident management teams managed evacuation centers in Phoenix, Houston and San Antonio. Teams were providing base camp operations and support to emergency responders in 14 locations in Mississippi, Louisiana and Texas. Camp oper-

ations including feeding, building, showers and laundry for emergency personnel, disaster and mortuary operations have also been supported by incident management teams.

Additionally, 17 interagency buying teams have been an integral part of the hurricane response effort. These teams have purchased food, portable toilets, fuel safety gear, medical supplies or leased land building or equipment as needed to support the relief effort. Mr. Chairman, the Forest Service and its 100-year history has responded to many emergencies and incidents ranging from major fires to hurricanes. All of these have tested the agencies and its partners management skills and abilities. The systems that have been developed and tested over and over again have proven useful and adaptable. Thank you very much for the opportunity to testify today.

Mr. REICHERT. Thank you, Under Secretary Rey.  
[The statement of Mr. Rey follows:]

#### PREPARED STATEMENT OF MARK REY

Mr. Chairman and members of the Subcommittee, Thank you for inviting me to talk with you today about the Forest Service and its interagency partners experience with the Incident Command System and communications during emergency response. I understand the Subcommittee is familiar with the Incident Command System so I would like to describe how the Forest Service and its partners use the Incident Command System and related systems developed over the years to respond to wildland fires and also to all-hazard incidents.

#### ***Incident Command System***

The Forest Service, the Department of the Interior agencies, and our partners operate the largest wildland fire management program in the world. These agencies and partners pioneered the use of the Incident Command System (ICS), as a component of the National Interagency Incident Management System (NIIMS) in the 1970s, in order to respond to wildland fires. Wildland firefighters realized that a standard organizational structure would help them communicate, set priorities, and be more effective in a rapidly changing situation. Emergency and crisis events are often chaotic and highly dynamic; they create physical, emotional, and social disruption. The Incident Command System provides common terminology for position titles, resources, and facilities; common responsibilities for each position, common planning, common communications, common locations, and common incident objectives to unify the Forest Service, Department of the Interior agencies, Tribal, State, and local organizations to fight a fire or respond to other types of emergency situations.

During fire season, critical firefighting needs are coordinated through the National Interagency Coordination Center, located at the National Interagency Fire Center in Boise, Idaho. If fire-fighting resources are strained as a result of multiple simultaneous fires, resources are prioritized and allocated by the National Multi-Agency Coordinating Group. These efforts ensure assets are appropriately prioritized, allocated, and can be positioned based on the most up-to-date information.

Interagency Incident Management Teams dispatched to incidents are comprised of emergency response professionals from Federal, Tribal, State, and local wildland fire organizations. These teams are able to use their logistical, organizational, and adaptation skills to rapidly deploy people and resources from many areas and respond to a wide variety of tasks needed during emergencies. For large multi-jurisdictional incidents, a unified command is used. In many cases, the use of unified command is the most efficient means to facilitate communications with all first responders. By having a representative of each jurisdiction at the incident command post, managers can share incident information down to each of their respective responders.

The ability of the Forest Service, the Department of the Interior agencies, and their partners to respond with trained and experienced personnel is based upon the interagency incident qualifications and certifications. These were developed in conjunction with the Incident Command System and are overseen by a group of fire directors for all five federal land management agencies and representatives of States that have wildfire suppression responsibilities. The system documents all

training, experience, certifications, authorities, licenses, minimum qualifications, and physical fitness standards for about 28,000 permanent and temporary employees of the Forest Service. The automated part of this system is known as the Incident Qualification and Certification System (IQCS). IQCS stores data, prints reports and qualifications cards, and provides data to other systems.

IQCS is tied to the Resource Ordering and Status System (ROSS); qualified personnel can be quickly identified and dispatched to an incident. ROSS is used by more than 400 dispatch offices serving numerous Federal, State, County and municipal agencies. ROSS assists dispatchers and coordinators with information on the availability and location of crews, management personnel, equipment, aircraft, supplies, and services. Resources can be requested, mobilized, and tracked to and from the incident. In addition, allocation of resources at a regional or national level can be accomplished. ROSS, along with interagency dispatch and coordination, allows managers to identify and mobilize resources from around the country to the incident within 12 to 24 hours. At the incident, Incident Management Teams use ROSS data to support resource status tracking, cost reporting, and planning efforts.

Forest Service units across the nation have had emergency operations plans for many years. They also developed interagency operating plans describing how the unit and its other Federal, Tribal, State, and local cooperators will work together during an emergency incident. A key component to emergency operations plans is communications. These plans include items such as which radio frequencies are going to be used, the sharing of radio equipment, and standardized formats for information flow from the incidents. All of this planning is to improve communications and effective incident management.

In his Directive on Management of Domestic Incidents (HSPD-5), President Bush instructed the Secretary of Homeland Security to develop a National Incident Management System that is closely modeled on the wildland fire system, including the use of the Incident Command System. In 2004, the Department of Homeland Security issued the National Incident Management System (NIMS). Under the terms of HSPD-5, all Federal Departments and agencies will use the NIMS in their domestic incident management activities, as well as those actions taken in support of State or local entities. In addition, state and local entities are to adopt the NIMS a requirement for receiving Federal preparedness assistance through grants, contracts, or other activities. I would like to give you an example of the adaptability of the Incident Command System. After September 11, 2001, the Forest Service trained the Fire Department of New York City in the Incident Command System. In response to Hurricane Katrina, the Fire Department of New York Incident Management Team assisted the New Orleans Fire Department initially in fire protection and then in the inspection of buildings and reopening fire stations in New Orleans. Incident Management Teams are managing or managed the base camps in Jackson Square and Holy Cross and are providing the New Orleans Fire Department preliminary training in the Incident Command System.

### **Communications**

Effective communications are critical in all emergency responses. When the concept of the Incident Command System was developed, three components were identified involving communications: 1) common terminology including clear text; 2) a communication plan to provide information to responders via radio; and, 3) an incident management plan to provide common written direction. Over the past 30 years, these components have proven essential during the response to wildfires and other emergencies. The result is improved communications within the emergency response community.

In an emergency, all forms of communications must be well organized and coordinated. As the Forest Service prepares each year for the upcoming fire season, many units agree to mutual aid frequencies and protocols with their interagency cooperators. Wildland fire agencies reduce the potential for radio frequency and compatibility problems by planning and providing communications systems during emergencies. The radio cache located at the National Interagency Fire Center is the largest civilian cache—over 5000—of radios in the United States. Radios are dispatched in kits including repeaters, hand held radios, and necessary antennas to set-up communication systems. These systems allow responders to be given radios and assigned frequencies which are sometimes added for unique situations. Every Incident Management Team mobilized by wildland fire agencies has access to these systems. This was done after September 11, 2001 when the National Interagency Fire Center communications personnel were dispatched to New York City within 12 hours to set up the necessary communication links so critical in an emergency.

A vital link to success for the National Incident Management System (NIMS) is communication interoperability at a level appropriate to the requirements of each

circumstance. Radio frequency and equipment compatibility issues among Federal, Tribal, State, and local emergency responders, as well as the Department of Defense, National Guard, and Reserves have been noted in past incident response evaluations. One example is the California Governor's Blue Ribbon Fire Commission report which found communications to be a major problem during the fires in Southern California in October 2003. The Commission's Finding #1 states "Communications interoperability is essential in the effective command and control of personnel and resources during multi-agency, multidiscipline responses to major incidents."

Local agencies often operate on different bandwidths than do Federal, Tribal, State and other local agencies. During joint responses, communications protocols must be pre-planned to ensure a positive communications capability is in place. Congress mandated a restructuring of the Federal Radio Frequency Spectrum requiring Federal Agencies to transition to narrowband FM frequencies by January 1, 2005. Each wildland fire agency is currently planning, executing, and funding the transition. State, local, Tribal, and cooperating agencies are not required to transition until 2013, although many have implemented or started the transition process.

#### ***Hurricanes Katrina and Rita***

I would like to say a few words regarding the Forest Service involvement following two major hurricanes: Category 4 Hurricane Katrina, which made landfall on the Gulf coast of Louisiana, Mississippi, Alabama, and the Florida Panhandle on August 29, and Category 3 Hurricane Rita which made landfall on the southwest coast of Louisiana and northeast coast of Texas on September 24, 2005. Forest Service response efforts really cover the entire spectrum of the disaster. The ability of the Forest Service and its partners to respond is based upon years of experience in the use of the Incident Command System, IQCS, ROSS, and communications during wildfires.

The Forest Service is the primary agency for the Emergency Support Function #4—firefighting—and is also a support agency to 11 of the 15 Emergency Support Functions in the National Response Plan. The Forest Service has been tasked with more than 50 missions since requests for assistance from FEMA began shortly before Hurricane Katrina struck. The National Interagency Fire Center and the Geographical Area Coordination Center in Atlanta, Georgia managed the mobilization of crews and interagency Incident Management Teams from across the country and assigned those teams to missions along the Gulf Coast.

Interagency support peaked October 1 with 29 Incident Management Teams that used the Incident Command System in the management of their operations. Approximately 5,500 people including 139 crews, and 1,300 management and support personnel, all qualified in the IQCS system were assigned. In addition, 2,700 pieces of equipment and 20 helicopters and fixed winged aircraft were mobilized and tracked through ROSS.

In the days after Hurricane Katrina, interagency Incident Management Teams managed all-agency radio/phone/data communications, coordinated the receiving and distribution of trailers for housing and thousands of truckloads of supplies, provided evacuees with food, clothing and shelter, and supported emergency medical operations at the New Orleans base camp. Interagency Incident Management Teams have managed evacuation centers in Phoenix, AZ, and Houston and San Antonio, TX. Teams are providing base camp operations and support to emergency responders in 14 locations in Mississippi, Louisiana, and Texas. Camp operations include feeding, billeting, showers, and laundry for emergency personnel. Disaster mortuary operations have been supported by base camps run by interagency Incident Management Teams.

Seventeen Interagency Buying Teams have been an integral part of the hurricane response effort. These teams have purchased food, portable toilets, fuel, safety gear, medical supplies, or leased land, buildings, or equipment as needed to support the Incident Management Teams.

The National Forest, Research, and State and Private Forestry branches of the Forest Service have begun extensive coordination with the affected states, other federal agencies, and industry associations to assist with managing the large scale ecological disturbance caused by the hurricanes. The Forest Service is working in concert with the State Foresters of Alabama, Mississippi, Louisiana, Texas, and Arkansas to help private landowners with immediate problems of downed timber removal and longer term questions involving storage and production capacity. Interagency teams are in place and are working with the States to plan for long range fuel mitigation, fire readiness and prevention, and fire suppression. Fire prevention education teams are also working with local agencies, media, and publics in stressing caution about hurricane debris disposal. Additional firefighting crews and equipment have been moved to the Gulf Coast in anticipation of increased fire activity.

**Summary**

Mr. Chairman, the Forest Service, in its one hundred year history, has responded to many emergencies and incidents ranging from major fires, to insect infestations to hurricanes. All of these have tested the agency's and its partners' management skills and abilities. The systems that have been developed and tested over and over again are useful and adaptable. I am glad the Forest Service could contribute to responding to the emergency after the hurricanes. I would be happy to answer your questions.

Mr. REICHERT. The Chair now recognizes Dr. David Boyd, director of the Office of Interoperability and Communications of the U.S. Department of Homeland Security to testify.

**STATEMENT OF DAVID BOYD**

Dr. BOYD. Good morning and thank you, Mr. Chairman, and members of the committee, for this invitation to speak to you today. As you have already observed, Mr. Chairman, interoperability requires before all else simple operability. As Katrina demonstrated, in the absence of a reliable network across which responders within an agency can effectively communicate, interoperability is both irrelevant and impossible. Some seem to believe the introduction of new technologies alone can solve our interoperability problems. But adding equipment addresses only part of what a fully robust reliable and both operable and interoperable public safety communications system requires. For example, on the technology side alone, when we lose towers, first responders have only their mobile or portable units available, so range is dramatically reduced and control of the incident is severely compromised. Portable units permit some short range communications until the proprietary battery packs begin to fail and cannot be recharged because the chargers are typically attached to the power grid.

911 centers are tied to the wired telephone network and so is the cellular system which also depends on cell phones that use proprietary batteries. No single fix alone can address all these elements. Many solutions have been offered and many claims have been made for each solution and all do have a role. But none is the silver bullet. Satellite phones are extremely useful for command elements but often hopelessly impractical for individual first responders. They require training and signals can be blocked by vegetation, buildings, terrain and even weather. They also use batteries that need recharging, and the first responder in the middle of a rescue or up to his armpits in water will find aiming the antenna hard or impossible. Van—and trailer-mounted communication systems dropped into an incident nearly always offer substantially less coverage than the original system and may require significant training to use.

And all of these, without solid prior planning, will add to the difficulties of achieving interoperability once operability is achieved. We believe that what we have developed to support interoperability can also help first responders successfully navigate any communications emergency. We in the public safety community have identified six key building blocks required to achieve interoperability—governance, standard operating procedures, technology, training and exercises, and routine use of interoperable systems. Cross-cutting all of these is the sixth and most important element, a high

degree of leadership, planning and collaboration with a commitment to and investment in sustainability.

To help public safety agencies and especially the policy levels of government understand the interrelationship of all of these factors, we developed a tool called the Interoperability Continuum. This planning tool explains how all these elements relate to each other and makes clear all of these elements need to be addressed before, not for the first time during an emergency. Interoperability is not a new issue. It was a problem in Washington D.C. when the Air Florida flight crashed into the Potomac in 1982, in New York City when the Twin Towers were first attacked in 1993, in 1995 when the Murrah Building was destroyed in Oklahoma City, and in 1999 at Columbine.

Too many public safety personnel cannot communicate by radio because their equipment is still incompatible or the frequencies they are assigned to are different. They operate on 10 different frequency bands that run communication systems that are often proprietary and too often 30 or more years old. Over 90 percent of the Nation's public safety wireless infrastructure is financed, owned, operated and maintained by the more than 60,000 individual local jurisdictions, police, fire and emergency medical services that serve the public. National efforts to fix the problem have historically been erratic, uncertain and until recently uncoordinated.

Worst, the efforts have too often been designed without the direct involvement of the people with the greatest stake in effective communications, the first responders. The attacks on September 11 made clear this had to change. Since September 11, significant progress has been made in interoperability, thanks to the priorities both the administration and Congress have placed on it. In 2001, SAFECOM was established as a presidential management initiative.

In 2004, the Department established the Office for Interoperability and Compatibility to further strengthen and integrate both interoperability and compatibility efforts and in the Intelligence Reform Act Congress gave it a legislative charter. While fixing the Nation's interoperability problem will require a sustained effort, we recognize that we cannot wait to move things forward. That is why SAFECOM has initiated a number of near-term initiatives, including work with the National Institute of Standards and Technology, to accelerate the development of standards, development of the Interoperability Continuum and statewide planning tools, RAPIDCOM, a program executed in about 150 days which helped ensure that 10 high risks urban areas had an emergency command level interoperability capability.

Creation of a public safety architectural framework, creation of a P-25 conformance testing program, development of coordinated grant guidance for use in all Federal grant programs, creation of a national baseline and identification of public safety spectrum needs are all near term initiatives. This Nation is heavily invested in an existing infrastructure that is too often inadequate to the basic communications requirements of individual agencies and not interoperable. We must continue to pursue a comprehensive strategy that takes into account technical and cultural issues associated with improving interoperability which recognize the challenges as-

sociated with incorporating legacy equipment and practices in constantly changing technology, cultural environments and which encourages strong local leadership in insuring that the needs of the front line of emergency response, the first responders, are met.

Though many challenges remain, we believe we have accomplished a great deal in the short time DHS has managed the program. And I would be happy to answer any questions the committee may have

Mr. REICHERT. Thank you, Dr. Boyd.

[The statement of Dr. Boyd follows:]

PREPARED STATEMENT FOR THE RECORD OF DR. DAVID G. BOYD,

### **Introduction**

Good morning and thank you, Chairman Reichert, Ranking Member Pascrell, and Members of the Subcommittee, for the invitation to speak to you today.

Today's testimony will focus on SAFECOM and its role in improving public safety communications. SAFECOM is the communications program of the Office for Interoperability and Compatibility (OIC), which resides in the Office of Systems Engineering and Development, Science and Technology (S&T) Directorate, Department of Homeland Security (DHS). SAFECOM provides research, development, testing, evaluation, guidance, and assistance for Federal, State, local, and tribal public safety agencies working to improve public safety response through more efficient and effective interoperable wireless communications. Communications interoperability refers to the ability of public safety agencies to talk across disciplines and jurisdictions via radio communications systems, exchanging voice and data with one another on demand, in real time as authorized.

Since September 11, 2001, significant progress has been made to improve communications for the public safety community as more and more jurisdictions move from being simply operable to being interoperable. However, it is apparent that more progress must be achieved. Much of this advancement can be attributed to the priority that both the Administration and Congress have placed on achieving communications interoperability. In 2001, SAFECOM was established as a Presidential Management Initiative and charged with strengthening interoperability at all levels of government by coordinating Federal programs, initiating a comprehensive standards program, and developing a national interoperable communications architecture. In 2004, the Department established OIC to further strengthen and integrate interoperability and compatibility efforts to help improve Federal, State, local, and tribal public safety preparedness and response. OIC was directed to:

- Identify and coordinate all DHS programs that address interoperability;
- Support the creation of interoperability standards;
- Establish a comprehensive research, development, testing, and evaluation (RDT&E) program for improving public safety interoperability;
- Integrate coordinated grant guidance across all DHS grant-making agencies that address public safety interoperability;
- Oversee the development and implementation of technical assistance for public safety interoperability;
- Conduct pilot demonstrations;
- Create an interagency interoperability coordination council; and
- Establish an effective outreach program.

### **Relationship between Operability and Interoperability**

Communications operability refers to the functional capability of a communications system that makes a specific operation possible. For example, operability exists when all responders within one agency can speak with each other by radio. The next step is to become interoperable—which we at SAFECOM define as facilitating communications between and among agencies and jurisdictions.

From its creation, SAFECOM has always emphasized the importance of operability within an organization because it is a prerequisite for interoperability. As Hurricane Katrina demonstrated, in the absence of a reliable network across which responders within an agency can effectively communicate, interoperability is neither possible nor relevant.

For agencies that already have communications operability, SAFECOM has created a number of highly successful tools and methodologies that can be used to help achieve interoperability. For agencies that do not yet have communications operability, much of SAFECOM's work is still applicable. When operability itself is in-



complete, it is usually the result of technical issues. SAFECOM's work in helping to develop standards, encouraging system migration, and participating in the coordination of communications spectrum policy have all helped improve operability across the Nation. Once basic operability is achieved, agencies can then focus on achieving interoperability.

#### **SAFECOM's Vision for Improving Communications**

Practitioners have helped SAFECOM articulate a long-term vision for interoperability which projects that in the future emergency responders will operate on a national system-of-systems using standards-based equipment that provides the capability to respond to an incident anywhere in the country, using their own equipment, on any network, and on dedicated public safety spectrum. They will be able to communicate with each other, as authorized, in real time via voice, data, and video-on-demand. Achieving this vision will require effort in five critical areas, including:

1. Development of guidelines and criteria for public safety communications systems;
2. Coordination of testing and evaluation processes;
3. Standardization of equipment fortified by grant guidance;
4. Coordination of communications spectrum policy; and
5. Coordination of communications planning.

These efforts will take time to achieve, but many of them are already beginning to strengthen communications and interoperability in the public safety community.

#### ***Development of Guidelines and Criteria for Public Safety Communications Systems***

Communications plans to support incident response should be developed based on a national architecture framework with common guidelines and criteria for public safety communications systems. Only when these guidelines are universally broadly recognized and followed will emergency responders and the larger public safety community be able to communicate effectively. To that end, SAFECOM published Version 1.0 of the first ever comprehensive Statement of Requirements (SoR) for Public Safety Wireless Communications and Interoperability. Developed with public safety practitioner input, the SoR defines the functional requirements for public safety communications. Subsequent versions will further refine these technical requirements so that industry will have a blueprint from which to build technologies that address public safety needs. This SoR also serves as the basis for developing a national architecture framework for public safety communications interoperability. SAFECOM is working to develop a Public Safety Architecture Framework (PSAF) that, along with the SoR, will serve as a tool to help the Nation's emergency responder agencies understand the technical requirements and national migration path toward fully interoperable communications systems without imposing requirements that stifle innovation.

For agencies that do not yet have communications operability, the SoR and PSAF are useful tools for analyzing options to achieve basic operability and to achieve interoperability in the near future. The PSAF allows agencies to understand that they need to have a communication system that is not only operable, but also interoperable with other systems in the region, while the SoR identifies technical requirements needed for new systems.

#### ***Coordination of Testing and Evaluation Processes***

The testing and evaluation of equipment will help communities identify their levels of operability. Coordinated testing and evaluation processes will ensure communications equipment meets the critical needs of emergency responders; the first critical need being operability. Public safety agencies face many complex procurement decisions and do not always have in-house expertise to validate manufacturer's claims. To ensure that public safety agencies can trust the claims made by vendors, communications equipment needs to be independently tested and evaluated. To do this, SAFECOM created a testing and evaluation working group to help ensure that methodologies for testing and evaluation of interoperability products are technically sound and comparable across testing laboratories. The working group members are practitioners and subject matter experts from law enforcement, fire services, and emergency medical services. These members help review and develop test criteria and serve the program by determining which products should be evaluated.

#### ***Standardization of Equipment Fortified by Grant Guidance***

Standardization of equipment, fortified by grant guidance measures, is an essential step in achieving improved communications. The equipment must adhere to communications standards that allow for operability as well as interoperability. As standards are created, funding solutions must also be implemented to help jurisdic-

tions focus on meeting interoperability goals and requirements. To better coordinate funding for interoperability solutions, such as purchasing new equipment, developing State plans, and other activities, SAFECOM coordinated resolution of conflicting Federal grant guidance. This will help maximize the impact of limited Federal resources to create systems that improve interoperability rather than making it more difficult to achieve.

SAFECOM's coordinated grant guidance outlines eligibility for grants, the purposes for which grants can be used, and the guidelines for implementing a wireless communications system in order to help maximize the efficiency with which public safety communications related grant dollars are allocated and spent. To ensure consistency in interoperability grant solicitations, this guidance has been included in grant programs administered by the Department of Justice and other agencies within DHS.

Within DHS, the Office for State and Local Government Coordination and Preparedness (SLGCP) reports that more than \$1.6 billion in homeland security assistance to local jurisdictions, urban areas, and states has been spent on interoperable communications over the past two years alone. SLGCP has three primary grant programs that have incorporated SAFECOM's grant guidance on issues regarding communications interoperability. These programs are the State Homeland Security Grant Program, Urban Areas Security Initiative (UASI) Grant Program, and the Law Enforcement Terrorism Prevention Grant Program. Many of the system procurements and enhancements supported by this funding are in the process of being implemented.

It is important to note, however, that although SAFECOM has developed consensus guidance and tools to improve the grant-making process, SAFECOM does not directly manage nor provide funding to State or local agencies for communications projects. Given the sheer number of state and local public safety agencies, regional communication implementation simply cannot be managed centrally from Washington. Grant guidance is an important step toward improving national interoperability because it helps to align public safety communications-related grant dollars with the national effort to improve interoperability at all levels of government.

In addition, the Office of Management and Budget (OMB) requires that all Federal agencies demonstrate their programs are fully aligned with SAFECOM guidance in developing their own communications plans.

#### ***Coordination of Communications Spectrum Policy***

The communications spectrum is a critical component for operability; it is the highway over which voice, data, and image communications travel. Radio spectrum is a finite resource—there is only so much available, and it is shared by public safety, radio broadcasters, government users, and other commercial and private consumers. The large demand for this resource can lead to overcrowding, which in turn can cause delays in or disruption of communication for public safety. The Federal Communications Commission (FCC) has allocated certain frequencies to public safety, but these allocations are fragmented, creating challenges for communications among different agencies and jurisdictions. In the Intelligence Reform and Terrorism Prevention Act of 2004 (P.L. 108-458), Congress required the FCC, in consultation with DHS and the National Telecommunications and Information Administration (NTIA), to conduct a study to assess the spectrum needs for Federal, State, and local emergency responders, which is due in December 2005. SAFECOM is currently assessing public safety spectrum needs in support of the President's national spectrum management initiative. DHS, in consultation with the Department of Commerce and other relevant agencies, is developing a Spectrum Needs Plan based on these assessments, which will be delivered to the President by the end of November 2005. SAFECOM believes in maintaining the current schedule to open the 24 megahertz (MHz) of spectrum in the 700 MHz band allocated by the FCC in 1998 for public safety use in accordance with recommendations from the Public Safety Wireless Advisory Committee.

#### ***Coordination of Communications Planning***

Strengthening and ensuring basic-level public safety communications capabilities, as well as backup communications, are key tasks in improving communications. Once agency-specific operability is ensured, it is essential to progress towards multi-jurisdictional and multi-disciplinary interoperability, which requires attention to more than technology. SAFECOM has identified five interrelated building blocks that are essential to forming a foundation for multi-jurisdictional and multi-disciplinary communications capabilities that include governance, standard operating procedures (SOP), technology, training and exercises, and usage.

SAFECOM has developed an interoperability continuum to measure a community's level of progress in these elements. The continuum helps communities assess

where they are deficient and provides valuable insight to Federal policy makers for targeting interoperability assistance.

As the continuum provides a guide for communities to progress towards interoperability, the National Interoperability Baseline study, a major initiative undertaken by SAFECOM, will provide a statistically significant, quantitative measurement of where communities stand on the path towards interoperability. The development of the survey methodology was initiated in January 2005, and the resulting study will allow SAFECOM to identify areas with operability and interoperability shortfalls, track the impact of Federal programs and measure the success of these programs, establish an ongoing process and mechanism to measure the state of interoperability on a recurring basis, and develop an interoperability baseline self-assessment tool for State and local public safety agencies.

#### *Statewide Communications Interoperability Planning (SCIP)*

SAFECOM has made considerable progress in developing statewide planning tools. In 2004, SAFECOM partnered with the Commonwealth of Virginia and the Department of Justice to develop a strategic plan for improving statewide interoperable communications for the state. The effort was based on SAFECOM's "bottom-up," locally-driven approach, which improves upon many previous statewide communications planning efforts that use a top-down approach by considering the requirements of the emergency responders who are the primary users and who control most of the wireless infrastructure. Based on lessons learned from the Virginia planning process, SAFECOM published the Statewide Communications Interoperability Planning (SCIP) Methodology as a model for integrating practitioner input into a successful statewide strategic plan for every state.

#### *Regional Communications Interoperability Pilots*

SAFECOM is also implementing Section 7304 of the Intelligence Reform and Terrorism Prevention Act of 2004 (Public Law 108-458), which authorized the Secretary of Homeland Security to carry out at least two Regional Communications Interoperability Pilots (RCIP). In accordance with Congressional criteria for determining the location of the pilot sites, as well as criteria outlined by the program itself, SAFECOM selected the State of Nevada and the Commonwealth of Kentucky as RCIP locations. SAFECOM, in coordination with SLGCP's Interoperable Communications Technical Assistance Program, is helping both states implement the SCIP methodology.

Building on lessons learned from the SCIP Methodology and earlier SAFECOM initiatives, the RCIP projects will help OIC identify models for improving communications and interoperability that take into account the wide range of challenges across the Nation. When the projects are complete, Nevada and Kentucky will each have improved interoperability plans, and we will be able to use the lessons learned to better develop or strengthen replicable tools and methodologies that will be made available to public safety practitioners, as well as to State and local governments. An interim report regarding the progress of the pilot projects has been submitted to Congress. A final report will be provided to Congress in June 2006.

SAFECOM believes that statewide emergency communications plans are fundamental to an effective response to a catastrophic event. As States continue to develop their own plans, SAFECOM recommends that they do so in coordination with SAFECOM methodologies and guidance.

#### *RapidCom*

SAFECOM has always emphasized that mission-critical operations are the primary concern of public safety. Through efforts such as RapidCom, SAFECOM initiated a program to help improve capabilities for immediate incident-level interoperable emergency communications in ten high-threat urban areas centered in Boston, Chicago, Houston, Jersey City, Los Angeles, Miami, New York, Philadelphia, San Francisco, and the Washington metropolitan area. In coordination with SLGCP, the Department of Justice's 25 Cities Program, and the DHS Wireless Management Office, SAFECOM worked closely with public safety leaders in the ten high-risk urban areas to assess their communications interoperability capacity and needs, and to identify and implement solutions. In keeping with SAFECOM's "bottom-up" approach, local officials drove the design and implementation of solutions in their jurisdictions.

With the on-time completion of the RapidCom project, incident commanders in each of the urban areas have now confirmed they have the ability to communicate adequately with each other and their respective command centers within one hour of an incident. The lessons learned from RapidCom can be applied to all public safety agencies at the Federal, State, local, and tribal levels.

In the Department of Homeland Security Appropriations Act, 2006, Congress has provided \$5 million in funding to expand RapidCom to other urban areas.

#### **Conclusion**

SAFECOM will continue to emphasize that before progress can be made to improve interoperable communications, operability must first be in place. The initiatives described above are helping to advance operability and interoperability of public safety communications. We must continue to pursue a comprehensive strategy that takes into account all issues associated with improving communications while ensuring that the needs of emergency responders are met. Though many challenges remain, we believe we have accomplished a great deal in the short time DHS has managed this program.

We are confident that with your continuing support and the assistance of our many Federal partners, we will continue to move towards a world where lives and property are never lost because public safety agencies are unable to communicate or lack compatible equipment and training resources.

This concludes my prepared statement. With the Committee's permission, I request my formal statement be submitted for the record. Mr. Chairman, Ranking Member Pascrell, and Members of the Subcommittee, I thank you for the opportunity to appear before you today and will be happy to answer any questions that you may have.

#### ***Appendix I: OIC Authorities from the Intelligence Reform and Terrorism Prevention Act of 2004***

Congress, with the passage of the Intelligence Reform and Terrorism Prevention Act of 2004 (PL 108-458) less than a year ago, gave OIC and SAFECOM legislative authority to carry out its responsibilities. Before passage of this act, responsibility for addressing interoperability was spread across three different agencies. The following is a scorecard of OIC legislative authorities, activities that have been conducted under those authorities, and the progress achieved on each activity:

<b>OIC Authority from the Intelligence Reform and Terrorism Prevention Act of 2004</b>	<b>OIC Activities</b>	<b>Progress</b>
Coordinate with other Federal agencies to establish a comprehensive national approach to achieving public safety interoperable communications;	<ul style="list-style-type: none"> <li>• Developing a national strategy, which leverages work conducted by other agencies across the Federal government</li> <li>• Working with the National Institute of Standards and Technology (NIST) to develop communication standards</li> </ul>	<ul style="list-style-type: none"> <li>• On schedule</li> <li>• On schedule</li> </ul>
Develop, with Federal agencies and state and local authorities, minimum capabilities for communications interoperability for Federal, State, and local public safety agencies;	<ul style="list-style-type: none"> <li>• Created the Statement of Requirements for Public Safety Wireless Communications and Interoperability (SoR)</li> <li>• Working with the Office for Domestic Preparedness (ODP) on the Target Capabilities List</li> </ul>	<ul style="list-style-type: none"> <li>• Completed</li> <li>• On schedule</li> </ul>
Accelerate voluntary consensus standards for public safety interoperable communications;	<ul style="list-style-type: none"> <li>• Developed a plan, with NIST, and delivered a report to Congress on accelerating the development of national voluntary consensus standards for public safety interoperable communications</li> <li>• Working with NIST to develop a P25 Conformance Testing program that will use independent labs</li> </ul>	<ul style="list-style-type: none"> <li>• Completed</li> <li>• On schedule</li> </ul>
Develop and implement flexible open architectures for short- and long-term solutions to public safety interoperable communications;	<ul style="list-style-type: none"> <li>• Developing the Public Safety Architecture Framework</li> </ul>	<ul style="list-style-type: none"> <li>• On schedule</li> </ul>

<b>OIC Authority from the Intelligence Reform and Terrorism Prevention Act of 2004</b>	<b>OIC Activities</b>	<b>Progress</b>
Identify priorities for research, development, and testing and evaluation within DHS and assist other Federal agencies in doing the same with regard to public safety interoperable communications;	<ul style="list-style-type: none"> <li>• Created a Testing and Evaluation working group to identify testing priorities for interoperability gateways and is currently evaluating other potential communications products for lab testing</li> <li>• Developing a standardized report format for presenting test results</li> </ul>	<ul style="list-style-type: none"> <li>• On schedule</li> <li>• On schedule</li> </ul>
Establish coordinated guidance for Federal grant programs for public safety interoperable communications	SAFECOM's grant guidance has been incorporated in public safety communications related grant guidance including the FY 2003 Federal Emergency Management Agency (FEMA) grants, the FY 2003/FY 2004/FY 2005 Department of Justice's Office of Community Oriented Policing Services (COPS) grants, the FY 2004/FY 2005 ODP grants	<ul style="list-style-type: none"> <li>• Completed</li> </ul>
Provide technical assistance to State and locals regarding planning, acquisition strategies, and other functions necessary to achieve public safety communications interoperability;	<ul style="list-style-type: none"> <li>• Implemented the RapidCom Initiative</li> <li>• Developed the Interoperability Continuum</li> <li>• Conducting Regional Communications Interoperability Pilots (RCIP) in Kentucky and Nevada</li> </ul>	<ul style="list-style-type: none"> <li>• Completed</li> <li>• Completed</li> <li>• On schedule</li> </ul>
Develop and disseminate best practices to improve public safety communications interoperability;	<ul style="list-style-type: none"> <li>• Created SAFECOM Grant Guidance</li> <li>• Developed the Statewide Communications Interoperability Planning (SCIP) Methodology</li> <li>• Developed the Interoperability Continuum</li> <li>• Developed the Communications Tabletop Exercise Methodology</li> <li>• Created additional tools and models to help public safety users</li> </ul>	<ul style="list-style-type: none"> <li>• Completed</li> <li>• Completed</li> <li>• Completed</li> <li>• Completed</li> <li>• Completed</li> </ul>
Develop appropriate performance measures and milestones to measure the nation's progress to achieving public safety communications interoperability;	<ul style="list-style-type: none"> <li>• Developing the National Interoperability Baseline</li> </ul>	<ul style="list-style-type: none"> <li>• On schedule.</li> </ul>
Provide technical guidance, training, and other assistance to support the rapid establishment of consistent, secure, and effective interoperable communications capabilities in the event of an emergency in urban and other areas determined by the Secretary of Homeland Security to be at consistently high levels of risk from terrorist attack; and develop minimum interoperable communications capabilities for emergency response providers..	<ul style="list-style-type: none"> <li>• Implemented the RapidCom Initiative</li> </ul>	<ul style="list-style-type: none"> <li>• Completed</li> </ul>

OIC Authority from the Intelligence Reform and Terrorism Prevention Act of 2004	OIC Activities	Progress
	<ul style="list-style-type: none"> <li>• Conducting Regional Communications Interoperability Pilots (RCIP) in Kentucky and Nevada</li> </ul>	<ul style="list-style-type: none"> <li>• On schedule</li> </ul>

**Appendix II: Tools and Methods based on State and Local Pilots**

Tools and methods that SAFECOM has developed based on State and local pilot efforts include:

- **Communications Tabletop Exercise Methodology**, a process for a communications-focused tabletop exercise replicable across urban areas.
- **Tabletop Exercise After-Action Report**, a template for capturing key findings and identifying gaps following each tabletop exercise.
- **Interoperability Pocket Guide**, a process for creating an area-specific interoperability pocket guide to ensure local public safety officials are aware of current capabilities available in their areas.
- **Templates for Improving Interoperability**, including governance charter, standard operating procedure, and memorandum of agreement templates to help communities improve interoperability.
- **Operational Guide for the Interoperability Continuum—Lessons Learned from RapidCom**, which outlines the importance of each element of the Interoperability Continuum, provides common challenges to consider when working towards improved interoperability and recommends key actions to increase an area's capabilities.

Mr. REICHERT. The Chair now recognizes Dr. Peter Fonash, deputy manager of the National Communications Systems of the U.S. Department Homeland Security.

**STATEMENT OF PETER FONASH**

Mr. FONASH. Thank you, Mr. Chairman, and distinguished members of the committee. I am Dr. Peter Fonash, and I am honored to testify before you today. I am the deputy manager of the National Communications Systems, NCS. In my testimony today, I will explain the role that the NCS played in preparing for and responding to Hurricane Katrina. NCS started under President Kennedy in the 1960s. The NCS is a consortium of Federal departments and agencies that have assets, resources, requirements and/or regulatory authority regarding National Security and Emergency Preparedness, NS/EP. Communications. The NCS assists the executive office of the President in ensuring NS/EP communications for the Federal Government under all circumstances.

A key tenet of ensuring communications is reliance on the resiliency and rapid restoration capabilities of the commercial communications infrastructure, necessitating strong relationships with industry. The NCS's National Coordinating Center for telecommunications, or NCC, is a joint industry/government body within the NCS. The operational mission of the NCC is the coordination of communications restoration efforts in an emergency. The NCS has a major communications role in the current National Response Plan, or NRP. The NCS is the lead agency for emergency support function number 2 (known as ESF#2), which is the communications component of the National Response Plan.

The purpose of ESF#2 is to ensure the provision of Federal communications support to Federal, State, local, tribal and private sector response efforts during an incident of national significance. Under the National Response Plan, the NCC is the Federal office

for national telecommunications domestic incident management. To facilitate coordination of industry/government operations during an emergency, the NCS has established and continuously operates several priority service programs which help to ensure critical calls are completed in the event of congestion or damage to the national commercial communications infrastructure.

The Nation heavily used each of these programs during Hurricane Katrina. These programs include the Government Emergency Telecommunications Service, (GETS) program, the Wireless Priority Service, (WPS) program, and the Telecommunications Service Priority, (TSP) program. The NCS (also manages another program, the Shared Resources High Frequency Radio, (SHARES), which provides voice and low speed data communications independent of the commercial communications infrastructure.

In anticipation of Hurricane Katrina, the NCS conducted various preparations including: heightening the alert status of the NCC's 24-hour watch; placing key programs such as GETS, WPS, TSP and SHARES on alert; providing personnel to staff ESF#2 regional offices and the FEMA headquarters; and conducting analysis of critical communications assets in the projected impact area. Industry worked equally hard to prepare. Companies moved emergency response teams and equipment to the region, established communication and bridges among carriers, activated damage assessment teams and kept in constant communication with the NCC. Bell South opened its operations center to all carriers for coordination purposes.

As of August 28, the NCS was ready. All systems and personnel were in place for the ESF 2 elements to receive communications support requests from the States impacted by Katrina. Katrina and the flooding in New Orleans caused unprecedented damage to the communications infrastructure. More than 3 million phone customers were out of service. For the first time in history, switching centers were out of operation due to water damage. Numerous 911 call centers were down and up to 2,000 cellular towers were out of service. In addition, significant damage had been inflicted on first responder land mobile radio communications.

At the NCC in Washington, industry identified three priorities to the NCS: security, fuel and access. The NCC assisted industry by coordinating security forces and requirements between industry and government to protect repair teams, communications sites and staging areas. In addition, in a limited number of circumstances, the NCC arranged to provide communications carriers and broadcast companies with generators where the power was out, fuel for generators and power outage maps.

The NCS coordinated closely with FEMA and local authorities to provide the carriers access to locations in need of repair. In the impacted areas, ESF#2 worked with State and local governments to help identify and provide solutions to the communications needs. ESF#2 arranged for mobile satellite and cellular vans and for hundreds of satellite phones. The extent of the destruction and damage to communications infrastructure and services caused by Katrina greatly exceeded any other disaster previously encountered by the NCS. A hurricane of the historical magnitude of Hurricane Katrina stressed the processes and procedures of the NCS and required

ESF#2 to perform new functions, such as, providing an interim land mobile radio system to three parishes in Louisiana.

Currently the NCS is fully engaged in assisting with the restoration efforts in the wake of Hurricanes Katrina, Rita, and now Wilma. In an ongoing effort to improve communications, the NCS is currently examining its actions regarding Hurricane Katrina, identifying issues and lessons learned and developing recommendations. We are fully committed to incorporating lessons learned in future plans, procedures and capabilities.

This concludes my oral statement. I have submitted a written statement for the record. Thank you for the opportunity to address this distinguished subcommittee. I will be pleased to answer any questions you have.

Mr. REICHERT. Thank you, Dr. Fonash.

[The statement of Mr. Fonash follows:]

PREPARED STATEMENT OF DR. PETER M. FONASH

***I. Introduction***

Thank you, Mr. Chairman and distinguished members of the Committee. I am Dr. Peter M. Fonash and am honored to testify before you today. I am the Deputy Manager of the National Communications System (NCS), which is aligned within the Preparedness Directorate of the Department of Homeland Security (DHS).

In my testimony today, I will explain the role that the NCS played in preparing for and responding to Hurricane Katrina. The NCS' greatest concern was meeting the needs of those affected by Hurricane Katrina and our first priority was trying to facilitate provisioning and restoration of communications services.

As you know, Hurricane Katrina was one of the worst natural disasters in our nation's history, impacting an area of approximately 90,000 square miles. For perspective, the area impacted by Hurricane Charley in 2004 was 1,500 square miles. Also as a result of Charley, more than 150,000 customers were without phone service. In contrast, more than 3 million people in the Gulf States lost phone service due to Hurricane Katrina, and over 180 central office locations were running on generators due to loss of commercial power.

The NCS' authorities and responsibilities regarding emergency communications stem from two principal federal documents. I will give a very brief overview of these, and then detail the NCS' Hurricane Katrina actions for you.

The NCS started under President Kennedy in the 1960s and was formalized in a 1983 Executive Order under President Reagan called E.O. 12472. The NCS is a consortium of federal departments and agencies that have assets, resources, requirements and/or regulatory authority regarding national security and emergency preparedness (NS/EP) communications. Today, the NCS has 23 different federal entities, including the Department of Defense, General Services Administration, FEMA, National Telecommunications and Information Administration, intelligence agencies, State Department and the Federal Communications Commission, among others. The Office of the Manager NCS, comprised of approximately 100 civilian and military personnel assigned to DHS, executes the programs and activities of the NCS. As set forth in the governing Executive Order, the NCS assists the President, The National Security Council, Office of Science and Technology Policy, Homeland Security Council and the Office of Management and Budget in coordinating the planning and provision of NS/EP communications for the Federal Government under all circumstances, including crisis or emergency, attack, recovery, and reconstitution.

The NCS has a history of addressing issues that cut across the Executive Branch. One important effort has been the establishment and tasking of the Continuity Communications Working Group (CCWG). The CCWG, within the past year, has initiated work on a Continuity Communications Enterprise Architecture. This effort will help to support Minimum Essential Functions of the Federal Government under all circumstances, including crisis, emergency, attack, recovery, and reconstitution.

As mandated by the Executive Order, the NCS also includes an industry component, which was especially valuable during Hurricane Katrina, called the National Coordinating Center for Telecommunications, or NCC, a joint industry/Government body within the NCS. The operational mission of the NCC is the coordination of restoring and reinstituting NS/EP communications in an emergency. The NCC oper-



ates a 24 hour, 7-day a week watch center-which during Hurricane Katrina conducted daily analysis and situational monitoring of ongoing events and response capabilities. The NCC houses both industry representatives and Government counterparts in the same physical space to facilitate information sharing and coordination of activities.

The Executive Order also charges the NCS to ensure development of a national communications infrastructure for a range of national security/emergency purposes, including preparing for and responding to hurricanes such as Hurricane Katrina. This includes critical features such as priority communications, and infrastructure redundancy. A key tenant of ensuring communications is reliance on the resiliency and rapid restoration capabilities of the commercial communications infrastructure (e.g., BellSouth, AT&T) necessitating strong relationships with industry.

The NCS works closely with organizations within the Federal government to ensure NS/EP communication requirements are built into technology solutions. For example, the NCS engages with the DHS Science and Technology Directorate, Office for Interoperability and Compatibility (OIC) on the development and creation of standards pertaining to communications. NCS also works with the DoD on the development of security standards for next generation networks.

In addition to the Executive Order, the NCS has a specific communications role in the current National Response Plan, or NRP. Specifically, the NCS is the lead agency with responsibility for Emergency Support Function #2 (known as "ESF 2"), which is the communications component of the National Response Plan. The Communications annex "ensures the provision of Federal communications support to Federal, State, local, tribal and private-sector response efforts during an Incident of National Significance."

In support of the ESF 2, the NCS's NCC functions as a central point of coordination and information sharing for communications infrastructure operators. Once notified of a Federal disaster, the NCC works with its federal government and industry partners to:

- Assess anticipated/actual damage
- Identify communication requirements
- Prioritize requirements
- Monitor the developing situation/response
- Render status reports
- Coordinate communication service provisioning and restoration as required with industry members and other communication providers

To facilitate coordination of industry/Government operations during an emergency, the NCS has established and continuously operates several priority service programs, which help to ensure critical calls are completed in the event of congestion or damage to the national commercial communications infrastructure. The nation heavily used each of these programs during Hurricane Katrina. For example:

The *Government Emergency Communications Service* (GETS) program provides priority treatment for authorized users to ensure a higher rate of call completion during periods of outages or congestion resulting from disasters. Simply put, the phone call of a GETS user such as a state employee or hospital worker could go through before others. During Hurricane Katrina, the NCS issued over 1000 new GETS cards and over 40,000 GETS calls were made in the ensuring recovery period.

The *Wireless Priority Service* (WPS) program established a wireless counterpart of GETS, providing priority treatment for calls made during periods of wireless network congestion by personnel with NS/EP missions, such as those experienced on September 11, 2001. The need for this program was recognized after 9/11 because many Federal, State and local Government and industry leaders utilize wireless as a primary means of mobile communications. During Hurricane Katrina, the NCS enabled over 4,000 cellular phones with WPS capability.

The *Telecommunications Service Priority* (TSP) program establishes a regulatory, administrative and operational framework for restoring and provisioning of priority communications services. Through this program, the FCC authorizes and requires service vendors to give priority to restoration and provision of service to those with TSP assignments. TSP is distinct from GETS and WPS, which provide priority for individual calls over the network in an emergency. During Hurricane Katrina, the NCS completed more than 1500 TSP assignments. Restoration of these services supported key Federal, State, local and commercial activities, such as emergency response at all levels, hospitals, and the military.

The *Shared Resources High Frequency Radio Program* (SHARES) provides a single, interagency emergency message handling system using High Frequency (HF) radio when other communications methods are unavailable. SHARES uses common radio operating and message formatting procedures and more than 250 designated frequencies. Participation in SHARES is open to all Federal departments and agen-

cies and their designated affiliates on a voluntary basis. More than 90 Federal, State, and industry organizations currently contribute resources. The use of SHARES was an overwhelming success within the first few days of the aftermath of Hurricane Katrina. The NCS coordinated participation by 431 SHARES stations. Some of the accomplishments of SHARES include:

- Assisted local Governments and Federal entities with search and rescue missions for over 100 missing people in the affected area by relaying critical information regarding those persons to the appropriate agency.
- Relayed critical logistical and operational information from FEMA and Atlanta's EOC into the Mississippi and Louisiana EOC's.
- Coordinated with National Aeronautics and Space Administration's (NASA's) Disaster Assistance and Rescue Teams, Communications Group, assisting them in their preparations for deployment to Stennis Space Center.
- Provided frequency coordination with Department of Energy, FCC, Military Affiliate Radio System, the U.S. Navy, FEMA, Civil Air Patrol, Amateur Radio Emergency Services (ARES)/Radio Amateur Civil Emergency Service (RACES), Louisiana EOC's and Mississippi EOC's.
- Coordinated inter-communications between SHARES and ARES/RACES emergency networks.
- Established contact with deployed Navy ships USS Truman and USS Bataan which were detailed to New Orleans to assist with the Katrina disaster.
- Relayed health and welfare message traffic between volunteer agencies in Georgia and the National Red Cross Headquarters in Washington, D.C.

The *Alerting and Coordination Network* (ACN) coordinates communications restoration efforts among service providers when the public service network is inoperable or congested. ACN membership includes major communications companies and certain Federal agencies. Operating independently of the public switched network, the ACN supports the NCC-Telecom Information Sharing and Analysis Center (ISAC) 24 hours a day, 7 days a week during both emergency and normal conditions. ACN was not utilized during Katrina.

Now I will detail many NCS's critical actions before and during Hurricane Katrina.

#### **Pre-landfall Preparation:**

Hurricane Katrina made its second landfall (Gulf Coast) on August 29, 2005. As of August 28, 2005, the NCS' preparations for Hurricane Katrina included:

- Heightened the alert status of the NCC's 24 hour Watch which provides monitoring and reporting capabilities
- 24 hour Emergency Operations Teams support on stand-by
- National and regional ESF 2 staffing structure for standing up on short notice. GSA and DoD provided personnel to staff ESF-2
- Issued TSP assignments, GETS cards, and WPS procedures
- SHARES activated
- GETS and WPS user support on 24 hour alert
- Activated National Response Coordinating Center ESF 2 desk at the FEMA Headquarters to provide level 1 (24x7) support (effective August 27, 2005, at 7 am Eastern Standard Time (EST))
- Began staffing Region IV, Atlanta, Georgia, Regional Response Coordinating Center
- ESF 2 at Region VI, Denton, Texas, activated on August 28, 2005, at 7 am EST
- NCC Watch providing 24/7 monitoring and reporting capability
- Industry/Government staging of mobile communications
- SHARES contacted local High Frequency organizations in Louisiana, Mississippi, Texas, and Alabama and conducted a teleconference with Nationwide Emergency Communications Service controllers
- Conducted analysis of critical communications assets in the projected impact area

All impacted communications companies moved Emergency Response teams and equipment to the region, established communication bridges among carriers, activated damage assessment teams, and Bell South opened its Operations Center to all carriers for coordination purposes.

Industry and Government participated in joint conference calls, which were conducted daily through the NCC. Communications companies performed assessments from Hurricane Katrina's Florida landfall and continued with preparations for Hurricane Katrina's second landfall. As of August 28, 2005, the NCS/NCC coordinated with communication companies the following preparations:

- Moving company personnel to safety

- Rerouting of traffic loads away from projected impact areas
- Movement of Emergency Response Teams into staging areas
- Identification of over 427 Cell on Wheels (COWs) and Cell on Light Trucks (COLTS) to be deployed into damaged areas to meet initial cellular communication requirements while the infrastructure is being restored
- Identification of communication vans, satellite packages, and pre-deployment of MCI and AT&T mobile communications vans that could be contracted by the Government if needed
- Coordinating with fuel and equipment suppliers
- Deployment and staging of generators
- Identification of 250+ satellite handsets that could be deployed in the event of major cellular system damage
- Coordination for satellite capacity
- Requesting relief from Federal and State reporting and service requirements due to evacuation of personnel from call centers, service centers, and other operations such as remote monitoring and control

### **III. RESPONSE:**

From Monday August 29, 2005 the day of landfall on the Gulf Coast, through the levee breach and the following days, the NCS engaged in many round-the-clock actions. In addition to exercising the priority programs discussed, the NCS' NCC played numerous coordination and facilitation roles. Specifically, the NCS activated SHARES on August 29th and worked to coordinate with United States Northern Command (USNORTHCOM) to identify and deploy communication assets. At this point, communications service providers were awaiting physical access to facilities to evaluate their networks and reporting was sparse during the first 24 hours of the storm.

Katrina caused unprecedented damage to the communications infrastructure. In the telecommunications sector, More than three million phone customers were out of service. For the first time in history, switching centers were out of operation due to water damage. Numerous 9-1-1 call centers were down and up to 2000 cellular towers were out of service shutting down telecommunications networks throughout the area. In addition, significant damage had been inflicted on first responder Land Mobile Radio (LMR) communications.

As of September 2, 2005, all systems were in place for the ESF 2 elements to receive communications requests from the affected region, both through the JFOs and independent requests. In the ensuing period, the ESF-2 elements on location:

- Identified and dispatched satellite vans to various locations affected by the hurricane, including New Orleans City Hall, State Police in Baton Rouge, the Mobile Army Surgical Hospital (MASH) at New Orleans Airport, and to the National Guard in Jefferson Parish
- Dispatched mobile capabilities, such as COLTs, to provide communication to the JFO and offer cellular service to the Louisiana State Emergency Operations Center (EOC)
- Delivered mobile communications trucks to the State EOC and to staging areas for Federal and Industry responders
- Delivered satellite handsets to emergency responders in Louisiana, Mississippi and Alabama
- Initiated contacts with State EOCs to determine communication requirements
- Identified the requirement to replace the destroyed LMR infrastructure in eight parishes in Louisiana. Worked with FEMA to initiate contract to provide replacement system
- Designed and installed new E-911 System in Plaquemines Parish
- Within 48 hours of Hurricane Rita making landfall, arranged for installation of a 106 foot, portable, Emergency Response Tower to Jefferson Parish to replace the destroyed 400 foot permanent tower supporting first responders in Jefferson Parish
- Deployed cellular capabilities were deployed to Cameron Parish to replace communications devastated by Hurricane Rita

At the NCS's NCC in Washington, industry identified three priorities to the NCS: fuel, security and access. Throughout the crisis, industry repeatedly made clear that in order to maintain existing communications, to assess damage to its communications infrastructure and to begin to make repairs and deploy alternative services, it needed to get fuel to locations, to have security to protect personnel, communications infrastructure, staging areas and fuel convoys, and to have access to locations in need of repairs.

The NCC assisted industry by coordinating security forces and requirements between industry and Government to protect repair teams, communications sites, and

staging areas. In addition, in a limited number of circumstances, the NCC arranged to provide communications carriers and broadcast companies with generators where the power was out, fuel for generators, and power outage maps. The NCS recognizes the interdependencies on other infrastructures and has established a relationship with the Energy Information Sharing Analysis Center through the response to previous disasters. Close coordination was achieved through the hurricane response period.

Highlights of the NCS's NCC activities include:

- NCC conducted twice daily conference calls with government and industry representatives. Participants included representatives from communications companies (wireline, wireless, satellite) and from numerous federal entities located in the field and in Washington, including NCS, GSA, FEMA. These calls facilitated information sharing and coordination of response actions.
- Facilitated the provisioning of the United States Marshals Service and Federal Bureau of Investigation (FBI) personnel to protect the most important communications center in New Orleans. These law enforcement officers provided security for employees who felt threatened by individuals outside the facility. The U.S. Marshals and FBI escorted employees and fuel trucks to and from the facility as well as providing facility security.
- Provided the local carrier with detailed satellite images which the carrier had been unable to access until the NCC stepped in to help. This enabled the carrier to prioritize its restoration efforts by providing information on which areas were still totally flooded.
- Successfully Coordinated offers for assistance of communications resources and assets (such as satellite phones) from local, national and international sources
- Facilitated fuel delivery for Broadcasters in the region
- Maintained full time liaison with DoD's U.S. Northern Command for coordinating communication support to effected area.
- Provided commercial emergency mobile assets and coordinated military assets to support local authorities following Hurricane Rita
- Provided status reports to DHS and White House

#### **IV. CONCLUSION:**

##### **Next Steps:**

The extent of the destruction and damage to communications infrastructure and services caused by Hurricane Katrina greatly exceeded any other disaster previously encountered by the NCS. A hurricane of the historical magnitude of Hurricane Katrina stressed the processes and procedures of the NCS and required ESF 2 to perform functions, such as providing an interim Land Mobile Radio system to 8 parishes, which has never been done before.

Currently, the NCS is fully engaged in assisting with the restoration efforts in the wake of Hurricanes Katrina and Rita, and now Wilma. In an ongoing effort to improve communications, the NCS is currently examining its actions regarding Hurricane Katrina, identifying issues and lessons learned and developing recommendations. We are fully committed to incorporating lessons learned into future plans, procedures, and capabilities.

Some of the areas that will be considered are: standardized and pre-approved emergency credentials to vital communications and other key infrastructure providers, examination of mechanisms for improved facilitation of industry assessment and repair efforts, consideration of increased level of exercises with industry, state and local government and improved acquisition of and coordination for emergency communication capabilities.

The NCS will continue to work with industry and government to improve the perseverance and restorability of the nation's communications network

Mr. REICHERT. The Chair now recognizes Mr. Kenneth Moran, director of the Office of Homeland Security on the Federal Communications Commissions Enforcement Bureau to testify.

#### **STATEMENT OF KENNETH MORAN**

Mr. MORAN. Good morning, Mr. Chairman, and distinguished members of the subcommittee. My name is Ken Moran, and I serve as the director of the Federal Communications Commissions Office of Homeland Security. In that role, I am primarily responsible for consolidating support for the homeland security and emergency

preparedness responsibilities of the Commission. Today, I will describe the Commission's efforts to assist consumers, the communications industry and other Federal agencies in response to the extensive damage inflicted by the recent hurricanes.

As we all know, Hurricanes Katrina, Rita and Wilma devastated large areas of the southeastern United States. People lost their homes, their businesses, and even their lives. Our hearts go out to all of those who are now struggling to put their lives back together. The chairman and ranking member described the destruction of these hurricanes very well, the destruction inflicted upon the communications infrastructure, so I won't repeat it now. But I will say that the resulting communications breakdowns made it extremely difficult for millions of people to communicate with their families and friends or to receive news and emergency information.

Also, emergency workers and public safety officials had great difficulty communicating. While no communications network could be expected to remain fully operational in the face of a direct hit from hurricanes of this magnitude, that fact was of little consolation to the people on the ground. Fortunately, the communications companies began to restore services almost immediately. They have overcome significant obstacles including flooding, lack of power, dwindling fuel resources for generators and security problems to rebuild, reconnect and broadcast. These extraordinary efforts were performed by industry employees, many of whom had suffered their own personal losses yet still continued to work to restore services to all.

The Commission has devoted significant time and resources to enable first responders to communicate and to facilitate restoration of communications services. On August 30, Chairman Martin established an internal task force to coordinate the FCC's hurricane response efforts, which fall into three categories, regulatory relief, industry outreach and coordination with other Federal agencies. To date, nearly 200 FCC employees have assisted this effort. The Commission has taken a number of steps to facilitate the resumption of communication services and to authorize the use of temporary services for use by disaster relief personnel and evacuees. At the outset, the Commission notified the communications providers that it would provide streamlined treatment for requests for special temporary authority or STAs to aid them in resuming and maintaining operations in areas impacted by the hurricanes. The FCC has granted more than 90 STA requests and more than 100 temporary frequency authorizations for emergency workers and communications companies to provide wireless and broadcast service in the areas affected, and also in the shelters around the country.

The Commission has granted the vast majority of these requests within 24 hours. In addition, the Commission has released several public notices and quickly adopted orders to provide temporary relief. The Commission works closely with the National Communications System and FEMA in accordance with the national response plan. We are continuously reaching out to communications companies serving the affected areas, wire line and wireless broadcasters, cable and satellite providers to assess the companies status and determine what they need to continue or resume operations.

Mr. MORAN. The FCC continues to gather critical information about resources that communications providers need to restore and maintain service in the affected areas and provides this information to the NCS and FEMA who are responsible for ensuring that the priority needs are met. The Commission also is responsible for providing information on communications companies' operational status for incorporation into the governmentwide situation reports.

In addition, the FCC works closely with industry to identify resources for use by disaster response personnel. We provide this information to the NCS and facilitate industry communications with other Federal officials. We also work on a wide range of providers, including those who offer satellite, wireless, wireless Internet access and WIFI services to identify those providers capable of offering facilities and services that can assist those in the affected area.

In the aftermath of these hurricanes the Commission has devoted significant time and resourced to enable first responders to communicate. For example, the Commission granted STAs to allow first responders to use through-the-wall imaging equipment to locate hurricane victims and to help emergency response organizations to facilitate communications on the ground. These recent disasters are also prompting the Commission to reassess steps that have been taken to address interoperability issues. These steps consist mainly of efforts to provide additional spectrum to public safety entities, to promote technological development to enhance interoperability, and to provide technical expertise on input to interagency efforts.

In addition, Chairman Martin has announced his intention to establish an independent expert panel to review the impact of Hurricane Katrina on the public communications infrastructure. The panel will be composed of public safety and communications industry representatives and will make recommendations for approved disaster preparedness, network reliability, and communications among first responders.

In conclusion, the Commission is continuing to work with other Federal agencies and the industry to determine what additional actions can be taken to assist in disaster relief and restoration efforts. We will also continue to reach out and respond to many consumers affected by these tragedies and we stand ready to work with the Congress and our colleagues at the Federal, State, and local levels to do whatever we can do to help with disaster relief and restoration.

I would be pleased to answer your questions. Thank you.

[The statement of Mr. Moran follows:]

#### PREPARED STATEMENT OF KENNETH P. MORAN

Good morning, Mr. Chairman and distinguished members of the Subcommittee. My name is Ken Moran and I serve as the Director of the Federal Communications Commission's Office of Homeland Security. In that role, I am primarily responsible for consolidating support for the homeland security and emergency preparedness responsibilities of the Commission.

In my testimony today, I will describe some of the damage wrought by Hurricanes Katrina and Rita to the communications industry and the Commission's efforts to assist consumers, the industries the agency regulates, and other Federal Agencies during this difficult crisis. Finally, I will also address the Commission's efforts to ensure public safety operability during catastrophic events such as the recent hurricanes.

As we all know, Hurricane Katrina and Hurricane Rita devastated the Gulf Coast. People lost their homes, their businesses, and even their lives. Hurricane Wilma has also brought devastation to the people of Florida. Our hearts go out to all of those who are now struggling with putting their lives back together.

The destruction that Hurricane Katrina caused to the facilities of communications companies, and therefore the services upon which citizens rely, was extraordinary. More than three million customer telephone lines were knocked down in the Louisiana, Mississippi, and Alabama area. Significant damage was inflicted both on the wireline switching centers that route calls and on the lines used to connect buildings and customers to the network. Thirty-eight 9-1-1 call centers went down. Local wireless networks also sustained considerable damage with more than one thousand cell sites out of service. Over 20 million telephone calls did not go through the day after the hurricane. While we were not able to contact every station in the immediate aftermath, we estimate that approximately 100 broadcast stations were knocked off the air. Hundreds of thousands of cable customers lost service.

Hurricane Rita, which struck parts of Texas and Louisiana, also caused significant damage. It produced extensive flooding throughout the affected area, including many of the same parishes in Louisiana still working to recover from Hurricane Katrina. The hurricane left more than 80,000 consumers without telephone service, damaged more than 20 telephone company switches, and knocked out more than 250 cell sites in the vicinity of Beaumont, Texas and Lake Charles, Louisiana. In addition, at least five broadcasters went off the air in the affected area as a result of the hurricane's wind and flooding damage.

As a result of the communications breakdown, it was extremely difficult for hundreds of thousands of people to receive news and emergency information and to communicate with their loved ones. Emergency workers and public safety officials had difficulty coordinating. It was at times like these that we were reminded of the importance of being able to communicate. While no communications network could be expected to remain fully operational in the face of a direct hit from a category four or five hurricane, that fact was little consolation to the people on the ground.

Fortunately, the work to restore communications services began almost immediately. While considerable problems remain, the companies in the region have made meaningful progress. They have overcome significant obstacles—including flooding, lack of power, dwindling fuel resources for generators, and security—to rebuild, reconnect and broadcast. After Hurricane Katrina, three radio stations in New Orleans continued to operate throughout the storm, and a fourth resumed operations within several hours of losing power. Wireline carriers were able to begin restoring service within five days, with significant improvement accomplished within a week, and wireless carriers began to restore service within two days, with substantial improvement by the first weekend. These extraordinary efforts were performed by employees, many of whom had suffered their own personal losses, yet still continued to work to restore services to all.

#### **COMMISSION ACTIONS**

The Commission has devoted significant time and resources to enable first responders to communicate and to facilitate companies' ability to quickly restore services in the region. On August 30th, Chairman Martin established an internal Task Force consisting of senior executives and management from within the Commission. Chairman Martin directed the Task Force to coordinate the FCC's hurricane response efforts, which fall into two categories: (1) regulatory relief; and (2) industry outreach and coordination with other federal agencies. The Task Force has been working on these assignments continuously since August 30th. To date, nearly 200 FCC employees have assisted in this effort.

##### ***Regulatory Relief***

The Commission has taken a number of steps to facilitate the resumption of communications services in the affected areas and to authorize the use of temporary communications services for use by disaster relief personnel and evacuees in shelters.

At the start of the disaster, the Commission notified communications providers that it would provide streamlined treatment for requests for special temporary authority (STA) in order to aid them in resuming and maintaining operations in areas impacted by Hurricane Katrina. The FCC has granted more than 90 STA requests and more than 100 temporary frequency authorizations for emergency workers, organizations and companies to provide wireless and broadcast service in the affected areas and shelters around the country. The Commission has granted each of these requests within 4 hours of receipt of all necessary information from the requestor, except in instances requiring coordination with other government agencies. Even in those cases, requests have been granted within 24 hours. In addition, the Commis-

sion has released several public notices and quickly adopted orders to provide temporary relief.

#### ***Industry Outreach and Coordination with Other Federal Agencies***

The Commission has been working closely with industry as well as the Federal Emergency Management Agency (FEMA) and the National Communications System (NCS) pursuant to the procedures established in the National Response Plan. The Commission is continuously reaching out to communications companies serving the affected area—wireline and wireless network providers, broadcasters, cable providers, satellite providers—and to trade associations for these providers to assess the companies' status and determine what they need to resume operations. These efforts include Commission staff contacting each of the broadcast stations in the affected region.

The FCC provides the critical information about resources that communications providers need to restore and maintain service in the affected area to FEMA and NCS, who are responsible for ensuring that priority needs are met. For instance, the Commission identified wireline central offices and radio and television broadcasters that could be operational if provided fuel to power on-site generators. The agency updates FEMA and NCS daily on evolving needs.

The Commission also is responsible for providing the National Coordinating Center (NCC) with information on communications companies' operational status for incorporation into the government-wide situation reports. Again, the agency gathers and submits this data daily.

In addition, the FCC has worked closely with the communications industry to help identify resources for use by disaster response personnel. The agency both transmits this information to NCC and facilitates industry's communication with other federal officials. For example, Commission staff coordinated discussions between FEMA and a major Direct Broadcast Satellite (DBS) provider to set up free televisions at disaster relief facilities and to provide a nationwide channel for disaster emergency services programming. Staff also worked with a wide range of providers—including those offering competitive facilities-based telecommunications, satellite, wireless, wireless internet access and Wi-Fi services—to identify those providers capable of offering facilities and services that can assist those in the affected area.

Finally, the Commission has been coordinating with the Interagency Coordinating Council on Individuals with Disabilities, organized by the Department of Homeland Security, to ensure that the needs of the disability community are addressed in the coordinated federal relief efforts.

#### **INTEROPERABILITY**

In the aftermath of Hurricanes Katrina and Rita, the Commission has devoted significant time and resources to enable first responders to communicate and to help facilitate companies' ability to quickly restore communications services in the region. For example, the Commission granted special temporary authorities (STAs) to allow first responders to use "through-the-wall" imaging equipment to locate hurricane victims and to emergency response organizations to facilitate communications on the ground.

These recent disasters are also prompting the Commission to reassess the steps that have been taken to address interoperability in recent years. These steps have consisted mainly of efforts (1) to provide additional spectrum to public safety entities; (2) to promote technological developments that enhance interoperability; and (3) to provide technical expertise and input on a number of interagency efforts.

The Commission has designated approximately 97 MHz of spectrum from ten different bands for public safety use throughout the country. Public safety entities also actively use spectrum-based services in other spectrum bands. In addition, the Commission has designated certain channels in these public safety bands specifically for interoperability. By "interoperability," we generally mean radio communications between public safety agencies (usually of different jurisdictions) in furtherance of both day-to-day and emergency operations. Frequencies designated for interoperability include 2.6 MHz of the 700 MHz band, 5 channels in the 800 MHz band, 5 channels in the 150 MHz band (VHF band), and 4 channels in the 450 MHz band (UHF band). A public safety entity may use these designated frequencies only if it uses equipment that permits intersystem interoperability. In response to requests from public safety entities, the Commission designated 50 MHz of spectrum at 4.9 GHz for public safety users. The 4.9 GHz band rules also foster interoperability by providing a regulatory framework where traditional public safety entities can pursue strategic partnerships with others, including critical infrastructure entities, as necessary for the completion of their mission. And, last year the Commission released its decision regarding public safety interference in the 800 MHz band, which



will not only promote effective and robust public safety communications but ultimately, will make additional spectrum available for public safety use.

Other steps the Commission has taken to facilitate interoperability include:

- To facilitate interoperability on a regional basis, the Commission reallocated television spectrum in the New York City area for public safety use to promote interoperability among area public safety entities.
- The Commission has developed policies and rules to promote the sharing of spectrum. For example, the Commission's rules permit the shared use of radio stations where licensees may share their facilities on a non-profit, cost-shared basis with other public safety organizations, including Federal government entities, as end users.
- The Commission modified its rules to eliminate regulatory barriers to help speed introduction of software defined radio (SDR) technology. Radios traditionally have been built with unalterable hardware components that perform specific functions. SDR technology allows radios to cover multiple frequency bands and signal formats by simply sending different software instructions to a micro-processor instead of using additional (frequently bulky and heavy) parts. Although this technology is not currently available for public safety use, we are aware that public safety entities and industry are actively exploring these applications.

Chairman Martin has announced his intention to establish an independent expert panel to review the impact of Hurricane Katrina on the communications infrastructure. The panel will be composed of public safety and communications industry representatives and will make recommendations to the Commission regarding ways to improve disaster preparedness, network reliability and communications among first responders such as police, fire fighters and emergency medical personnel.

#### **CONCLUSION**

The damage wrought by the recent hurricanes is tremendous and its effects will be felt for months and possibly years to come. The Commission is continuing to work with other Federal agencies and the communications industry to determine what additional actions can be taken to assist in the disaster relief and restoration effort. The Commission also will continue its important work in reaching out, and responding to, consumers affected by this tragedy.

The Commission stands ready to work with Congress, our colleagues at federal, state, and local agencies, and the American public to do whatever we can to help with the disaster relief and restoration efforts. I would be pleased to respond to your questions.

**Mr. REICHERT.** The Chair now recognizes Doctor Linton Wells, II, Acting Assistant Secretary of Networks and Information Integration, Chief Information Officer of the United States Department of Defense.

#### **STATEMENT OF LINTON WELLS, II**

**Mr. WELLS.** Chairman Reichert, thank you very much, Ranking Member Pascrell, and members of the committee.

The lessons learned, if you will, from the Federal, State, and local responses to Katrina parallel the lessons that DOD has learned in the series of humanitarian assistance, disaster relief operations around the globe, and also the stabilization and reconstruction operations in Afghanistan and Iraq. All of these have involved complex situations involving large populations without basic access to services, including communications and often power.

I will focus on four lessons out of these. The first is communications command and control and the sensors to provide situational awareness are not techie adjuncts, if you will, to major muscle movements like the delivery of food, water, and shelter, but in fact the critical enablers of everything else that will happen. We need to be able to move these equipments contemporaneously with the rescue efforts and actually before the restoration of things like water, power, and shelter. In addition, power needs to be included.

Self-powered units for erectable towers and equipment need to be included in these first deployments.

The second point is that our military has to be able to reach out beyond the boundaries of the traditional military networks in order to communicate, collaborate, in some cases translate and engage with nontraditional partners such as State and local first responders, the commercial partners, and overseas people like nongovernmental organizations. This is important because so much of the information as well as the recipients of the services reside outside these government boundaries. In this area commercial technology is very important. And it has been true for both domestic and for international situations.

The third piece that is important is the social networks we have to have in order to make this work, the personal and professional relationships to interact in really three different spheres: We have the military-to-military command and control sphere; we have got the military to the State and local first responders, and we have got the military to the commercial partners. All of these are quite different environments.

Working with police and firemen has been very important. DOD has been trying to learn from the way they handle incident responses, and in this we greatly appreciate the Chairman and Ranking Member's work with the police and fire over the years. I would also say for the Department of Defense in the last year, the Chairman of the Joint Chiefs of Staff has introduced a new topic, a doctrinal topic called integrated operations. We have long been working towards joint operations among services and combined operations among the militaries of several nations. This year the Chairman introduced the importance of working in integrated operations with nontraditional partners such as State and local first responders, with indigenous security services overseas, with nongovernmental organizations, et cetera.

The fourth lesson then is that information sharing is absolutely critical. Communications is one piece but the goal ultimately is to share information. The Defense Department and the Intelligence Community have a common set of data standards that has stood us in very good stead in terms of sharing information in, say, counterterrorist domains. It would be a great help if the rest of the government were able to adopt these sorts of standards to allow for the sharing of information not just in counterterrorist situations but also in the source of situations we saw in Katrina and Rita.

So I look forward to your questions, Mr. Chairman. Thank you for the opportunity to be here today.

Mr. REICHERT. Thank you, Doctor Wells.

[The statement of Mr. Wells follows:]

PREPARED STATEMENT OF DR. LINTON WELLS, II

Chairman Reichert, Ranking Member Pascrell, distinguished members of the Committee, thank you for inviting me here today to discuss the subject of ensuring operability during catastrophic events. As the acting Assistant Secretary of Defense for Networks and Information Integration (NII)/Chief Information Officer (CIO) of the Department of Defense, I am responsible for enabling the warfighting, business and intelligence processes of an enterprise by ensuring agility, situational awareness, and effective corporate decision-making through the use of information and communications technology (ICT).

Warfare in the 21st Century, the core business process of the Defense Department, must be net-centric, meaning so well connected that well-trained professionals can self-synchronize their behavior with many others across vast distances, with devastating effect. Victory is dependent on discovering the enemy, accessing data, making decisions, and executing operations more rapidly and effectively than your adversary. Let me begin by saying that the communications and command and control (C2) lessons we are learning from the Federal, state, local, and commercial responses to Hurricane Katrina appear consistent with the lessons DoD has learned in the conduct of Humanitarian Assistance and Disaster Relief (HADR) missions across the globe. Moreover, these lessons appear consistent with those lessons learned during stabilization and reconstruction operations in Afghanistan and Iraq. All of these situations involve high-levels of complexity, large populations, and the destruction of basic information and communications infrastructure. There is also a commonality of purpose that must be organized, coordinated, deconflicted, and executed as efficiently and effectively as possible, using multiple sources of support—some of them totally unfamiliar with one another.

Communications—particularly wireless communications—are the critical enabler of all other functions in any disaster relief operation, along with the sensors to let you know what's happening and share the information and the ability to command and control those functions and information. These are all mission-critical functions. Hurricane Katrina was no exception. Without effective communications, every operation will suffer debilitating inefficiencies, some leading to ineffectiveness. My experience indicates that the first priority in both international and domestic situations is the establishment or restoration of wireless communications. Establishing or reestablishing communications has become a first-order requirement that must occur contemporaneously with rescue operations. Communication and information, when used appropriately, synergize the rescue response. It is imperative to take advantage of everyday technology to rapidly coordinate the rescue of our citizens across the entire spectrum of the crisis until its conclusion.

By now, the members of this Subcommittee recognize that the Department of Defense and civilian responders from across the spectrum of Federal, state, and local authorities have matured into the post-September 11 world with different lexicons. The mission of fighting and winning this nation's wars is very different from responding to catastrophes spread across vast distances, regardless of their cause. Different lexicons are to be expected. America has a long tradition of carefully separating military and civilian functions, especially in our homeland. My experience, however, tells me that when Mr. Canterbury of the Fraternal Order of Police testified before this Subcommittee on September 29, his reference to command and control is the same concept that General Pace, Chairman of the Joint Chiefs of Staff, refers to using the same words. The ability to lead a complex organized operation requires situational awareness and the ability to communicate with everyone participating in that operation. The planning process establishes the social networks and procedures that give people the agility to adapt and overcome the unanticipated.

#### CATEGORIZING CHANGE

From my experiences since September 11, I have come to use a three-part construct to describe the actions necessary to ensure operability in catastrophic events internationally and domestically. These categories include: 1) technical capacity development; 2) "social network" development through planning, interaction, and collaboration; and 3) doctrinal changes and training.

#### TECHNICAL CAPACITY DEVELOPMENT

During the past 10 years, the U.S. military has honed its C2 skills in multiple deployments involving a mixture of war-fighting, civil affairs, humanitarian assistance, disaster relief and stabilization and reconstruction operations. The 1990's saw such deployments in Haiti and the Balkans, and they have only accelerated since the 9-11 attacks, with deployments in Afghanistan and Iraq. More recently, U.S. forces have been instrumental in providing key elements of the initial humanitarian responses to global disasters, including the tsunami in Southeast Asia, the recent earthquake in Pakistan and the subject of today's hearing, Hurricane Katrina. All of these deployments have highlighted the increased need in the Department to communicate, collaborate, translate, and cooperate outside the closed networks required for military operations. Unlike the military, which always travels with its own power and infrastructure, civilian responders encountered command and control issues at the operational and tactical levels due to the devastation of the civilian-response infrastructure. Technology designed to operate without stable power sources in the austere environments of developing countries, is available today.

Working with industry, these innovations can help to increase the survivability of tactical civil responder systems.

As stated earlier, when forces assigned to U.S. Northern Command and National Guard units deployed with military communications, they were once again ill-equipped to communicate with civilian responders struggling with a lack of communications infrastructure. Therefore, the Federal government must expand its capability to rapidly deploy commercial-off-the-shelf networks making use of satellite links, wireless local area networks (LANs), laptop computers and “plug-and-play” equipment to bridge the gap created by a devastated civil infrastructure.

The lack of interoperability of first responders’ communication equipment also hindered the effectiveness of operations. This problem won’t be resolved by everyone buying the same product. It will likely be solved through collaborative efforts involving spectrum allocation and agreement both within industry and in the first responder community on common data standards. In the near term, we must continue to encourage the development and purchase of technology that bridges these disparate systems.

In the area of technical standards, one of the critical waveforms that DoD and DHS have agreed upon as essential to become interoperable under DHS’s SAFECOM Program has been the Association of Public Safety Communications Officials (APCO) Project 25 (APCO–25) standard. The primary objectives of APCO Project 25 are to: (1) enhance functionality of equipment and capabilities focused on public safety needs, (2) ensure competition among multiple vendors through an open systems architecture approach and (3) achieve effective, efficient and reliable intra-agency and inter-agency communications. Our two agencies have mutually agreed that this is the best approach at this point in time. Although DoD is making efforts to adopt and implement APCO–25, SAFECOM has had success in influencing the public first responder community to implement this standard.

From a DoD perspective, we believe the APCO–25 implementation is an important step to solve some of the current interoperability problems in the first responder community. As an example, DoD is complying with National Telecommunications and Information Administration (NTIA) narrowbanding mandate by implementing APCO-25 in DoD Land Mobile Radios (LMR). In addition, DoD is examining the development of an APCO–25 waveform that will work in the Joint Tactical Radio System so when our military deploys to support homeland security missions, no matter what they are, we will have an immediate communications capability with First Responders.

#### SOCIAL NETWORK DEVELOPMENT

Much of the work that needs to be done at the strategic level in the wake of what we have learned revolves around social networks rather than any lack of technology. Hurricane Katrina showed us that a key source of the problem stemmed from a lack of familiarity with each other’s operating practices—what DoD calls tactics, techniques, and procedures. What was lacking was familiarity with the National Response Plan, a shared understanding of how NORTHCOM was to support that plan, and experience gained through exercises between US military and Federal, state, and local responders. A nationally focused effort to generate a truly collaborative information environment is feasible through coordinating the resolution of legal, policy and technical issues across all agencies and all levels of government. Ideally, there would be full interoperability among systems for command and control, communications, computers, intelligence, surveillance, and reconnaissance (known together as “C4ISR”). In addition, there needs to be broader, more fully articulated planning for multiple kinds of disaster events, ranging from natural disasters such as Hurricane Katrina up through a nuclear strike. Command and control, which is a social process augmented by communications and information, must extend to all appropriate locations, from a local sheriff’s car to the White House. Moreover, we must exercise and train in a common environment to be better prepared to respond to such crises in the future.

Multiple efforts have addressed, or are addressing, segments of the need for a national response capability. These include:

- National Security Telecommunications and Information Systems—Developing plans and programs, including the development of architectures, to ensure security on National Security Systems;
- Continuity Communications Enterprise Architecture—Architecture to enable the Federal Executive Branch to execute mission-essential functions under all circumstances;
- Intelligence Community Architecture—Architecture to enable the intelligence community to share information;

We must vigorously support collaborative planning and interoperability at all levels of government, ensuring that decision-makers have unencumbered access to the best available information and enabling interoperable command and control operations. The Federal government must have command and control capabilities, supporting facilities, and infrastructure to ensure uninterrupted connectivity and coordination in support of essential functions in accordance with constitutional authorities. Our goal should be to provide assured services across government by:

- Making information available on a network that is dependable and trusted,
- Providing the available and appropriate bandwidth, frequency and computing capabilities within the spectrum management process,
- Assuring appropriate and effective collaboration capabilities and other performance support tools,
- Supporting secure and assured information sharing, without disadvantaging the responder lacking a security clearance,
- Continuously refreshing the information content of a shared situational awareness capability,
- Promoting infrastructure transparency (to the user),
- Assuring independence of information and data for consumers and producers,
- Considering that all users of information are also suppliers (and therefore encouraging parties to contribute data rather than just downloading it),
- Supporting information transactions that are asynchronous in time and place,
- Supporting the disadvantaged user with intermittent access to limited data services, and
- Applying federal data tagging standards and information assurance policies.

I have learned a great deal about “social networks” in the international context in the past three years. It is critical to develop purposely professional and personal links among experts and practitioners from multiple fields and sectors in humanitarian relief, disaster relief, and stabilization and reconstruction operations. These ties, built up over time and through enormous effort, are absolutely vital to organizing an effective response when catastrophic disasters occur. Unless working arrangements to communicate and share information among all of these types of entities can be formulated, the success of any operation can be compromised, with results that can prolong or even exacerbate the effects of the disaster. Extensive planning and training is essential before the crisis.

#### DOCTRINAL CHANGES AND TRAINING

In the area of doctrinal change in the international context, DoD is embracing the concept of “integrated operations.” This reflects a new battlespace management concept that will transform our military competencies from joint operations to operations that are fully integrated and coordinated with those of the military’s partners in an operation. In the case of humanitarian assistance activities, these partners may include other U.S. agencies, allied militaries and governments, nongovernmental organizations, local populations, and private industry. And to maximize our effectiveness, DoD will integrate from planning to execution and then on to the transition to a restored local authority. Employing a coherent strategy that uses all instruments of the state in concert will ensure success in relief operations over the long term.

This doctrine also better prepares DoD to fulfill domestic response missions, bringing together civilian responders and military planners to synergize their efforts. Within the United States, DoD has conducted many scenario-driven exercises designed to prepare the military to support humanitarian assistance across a broad range of natural disasters—and also with regard to protecting potential terrorist target sites. Exercises and training opportunities between the U.S. military and civilian responders are critical to achieving this level of integration.

Thank you for the opportunity to address the Subcommittee.

Mr. REICHERT. The Chair will recognize the gentleman from Texas, Mr. McCaul. He is apparently a busy man. He has two other appointments he needs to be at, so we are going to allow him the courtesy to ask the first questions.

Mr. MCCAUL. I appreciate that, Mr. Chairman.

We also after the events of Katrina and to some extent Rita, we weren’t interoperable, we weren’t operable. All the communication went down. And when that happens, when Rita occurred—I am from Texas—they actually gave me a satellite phone. I had never used one of those before. But when all the communications go

down, we really have to rely on satellite technology and satellite communications.

My question to the panel as a whole, but more directed at Doctor Fonash and Boyd with the Department of Homeland Security, does your NCS—or does DHS in a broader scale have a program to preposition this satellite capacity and equipment in the regions of the Nation where we do have these critical threats either from terrorist attacks or from Mother Nature so that we can respond better to the needs of the first responders in a more efficient manner?

Dr. BOYD. The Office of State and Local Government Coordination Preparedness and a number of others are working to try to identify what needs to be placed in the field. I don't work directly with the program that would place those phones in the field but I am sure we can get answers for you on exactly what the status of that is.

Mr. MCCAUL. Obviously the problem is if it is a terrorist attack, or in this case a hurricane, and all the communications go down, it greatly impairs our ability to respond. So that is why the satellites and that technology and prepositioning those assets is so important.

Doctor Fonash.

Mr. FONASH. Sir, what I would like to say is, first of all, that we do have satellite vans. The industry has satellite vans and DOD has satellite vans and what they do is they don't deploy them in the vicinity because they are concerned about damage; what we do is we deploy them outside the area of potential impact. As soon as the disruption is over with, we bring those vans in and we restore communications at that point in time.

FEMA has MERS vans, if you are familiar with MERS vans. We arrange the mission assignments through FEMA, through the National Response Plan. We arrange for vans to come in from the commercial carriers, AT&T and MCI to establish satellite communications. Actually satellite dishes provide much more than handheld satellites but also give you full telephone capabilities and things like that.

One of the things that we are looking at that we did for Hurricane Wilma as a lessons-learned from Rita and Katrina was that we actually pre-identified satellite capabilities with the companies. We went to Global Star, one of the biggest providers of satellite phones, and identified how many phones they had. We also worked with the State and local emergency operations centers, and one of the recommendations we made to them is that they should have some satellite phones on hand.

But also a caveat, again, and I think Doctor Boyd mentioned this before, satellite phones are limited. The battery life is limited. You cannot get satellite capability in an urban environment because the antennas will not work. Again, you have to look at it as a set of tools that you can have. Satellite phones are just one of the tools you have to look at using.

Dr. BOYD. If I could add one key point that you also have to consider. The satellite phones and satellite capabilities provide critical elements of the communications piece for the command level. Getting to the individual rescue officer, the guy who needs to be coordinated by the local chief of police or the fire chief, Twin Towers

is probably an ideal example of that, where there were literally tens of thousands of State and local officials, officers who are directly involved in the operation, satellite phones tend not to be practical for them.

So there are two levels of communications that you need to address: that command-and-control level where satellites become a crucial piece, and then that level that goes out to the individual officer in the field where satellite phones are generally not as practical, partly because they are hard to use and partly because bandwidth to support that number of responders is not always available.

Mr. MCCAUL. If I understand the satellite capabilities, they are better at the command and control level.

Dr. BOYD. I think to connect commanders to commanders. It is crucial at the national level to allow that common operating picture to be transmitted up the line so that at the national command level they can make decisions across the larger command levels. But there is that other level that you don't want to leave out, which is the guy who is going into the attic and saving the drowning victim, and that level of communications is not terribly well supported by satellites.

Mr. MCCAUL. One follow-up. Are you coordinating with the Department of Defense and the FCC on these issues at all with respect to—

Dr. BOYD. I think we are probably going to give the same answer; yes, we deal with them in a variety of ways. In SAFECOM interoperability we work very closely both with the National Guard Bureau, with the Joint Tactical Radio Aystem, with the J6. I am part of the senior advisory group that deals with the J6. When they look at how communications that deal with local domestic authorities, particularly in base defense kinds of communications requirements, I am sure you will get the same answer.

Mr. MCCAUL. Is that your understanding, Doctor Wells?

Dr. WELLS. The Department of Homeland Security has come to us on a number of occasions; for example, work on the homeland security network, SAFECOM, a variety of interoperability efforts. We have an assistant secretary for homeland defense who works very closely with the interoperability office at DHS.

Mr. MCCAUL. Lastly, let us take Katrina, for instance. When was this technology deployed? You mentioned the mobile units. At what point in time was that deployed to Louisiana, for instance?

Mr. FONASH. The initial deployment of those mobile units occurred on September 1st.

Mr. MCCAUL. Thank you, Mr. Chairman.

Mr. REICHERT. Thank you. The gentleman from New Jersey, Mr. Pascrell, is recognized for 5 minutes.

Mr. PASCRELL. Thank you, Mr. Chairman. My first question is to Mr. Moran. You said in your testimony that, if I may quote you, sir, these recent disasters are also prompting the Commission, the FCC, to reassess the steps that have been taken to address interoperability in recent years. These steps have consisted mainly of the following efforts: Number one, to provide additional spectrum to public safety entities; number two, to promote technological developments that enhance interoperability; and number three, to

provide technical expertise and input on a number of interagency efforts.

Mr. Moran, we have been discussing additional spectrum for over a decade. Over a decade. It takes a hurricane, it takes a disaster to bring us to our senses. I didn't detect any sense of urgency in your presentation, and I wish that you could correct me, sir.

Mr. MORAN. Well, there definitely was a sense of urgency at the Commission with regard to Hurricanes Katrina, Rita, and Wilma. The Commission, as I said, over 200 people at the Commission actually have worked on those matters. We have people that we put onsite in the ESF2 process that Doctor Fonash talked about earlier; we have people today in Louisiana, we have people in Florida, and we had people in Texas when the Rita situation was going on.

Mr. PASCRELL. Mr. Moran, could you explain to our audience and the panel what is spectrum?

Mr. MORAN. What is spectrum?

Mr. PASCRELL. Yeah.

Mr. MORAN. The portion of electromagnetic—

Mr. PASCRELL. In English.

Mr. MORAN. It is the portion of the radio and—radio—it is radio spectrum that various hat TV stations use to broadcast TV, radio stations use to do radio and public safety communications and cellular operators use to communicate.

Mr. PASCRELL. Why is it so important in the discussion in terms of communication for our first responders? What does spectrum have to do with first responders which we have been discussing for a decade?

Mr. MORAN. Because the amount of spectrum you have determines how much communications you have available.

Mr. PASCRELL. Okay. So in other words, it is up to the FCC to expand spectrum so that first responders have a greater ability and opportunity to communicate in the first place. Is that an exaggeration, what I just said?

Mr. MORAN. I think that is correct.

Mr. PASCRELL. Why haven't we done that? Why hasn't the FCC stepped up to the plate in this matter?

Mr. MORAN. The Commission has stepped up to the plate.

Mr. PASCRELL. How?

Mr. MORAN. The Commission made more spectrum available.

Mr. PASCRELL. After emergencies happen. After emergencies happen. This is what your testimony says: that after the fact you have—in fact, what you said was that we have allowed consideration after the hurricane hits, in this example. What we do is we short-circuit the bureaucracy and we extend those stays so we can have exceptions. That is what you say in your testimony.

Mr. MORAN. We have done all those things.

Mr. PASCRELL. What else have you done before the hurricane?

Mr. MORAN. Prior to the hurricane the Commission made available 24 megahertz of spectrum in the

Mr. PASCRELL. That is for the hurricane.

Mr. MORAN. Prior to the hurricane.

Mr. PASCRELL. Was that done 2 years ago, 3 years ago?



Mr. MORAN. It is actually in a transition right now that is in part related to the spectrum will be fully usable with the digital TV transition.

Mr. PASCRELL. One final question along those lines, Mr. Moran. What has been done by the FCC in the last 5 years, 6 years, 7 years, to expand spectrum for first responders, when we know that is the most critical question facing us in communications? You tell us.

Mr. MORAN. We made the 24 megahertz available in the 700 megahertz range and we have made I think 50 megahertz available I believe in the—it is much higher, I think it is in the 3.5 gigahertz range for more data. So we made a lot of spectrum available for the public safety community. We have done that in the last several years.

Mr. PASCRELL. It is a good thing Congressman Curt Weldon isn't here. It is a good thing. I am mild compared to that. But it is interesting, your responses about trying to make us believe—we believe that this has been a priority on the FCC list. Long before 9/11 FCC dropped the ball, was not paying attention to our first responders, and maybe you are listening with one ear now. I don't know.

Can I have one more question, Mr. Chairman?

Mr. REICHERT. Yes, sir.

Mr. PASCRELL. To Mr. Fonash.

You stated in your presentation that you provided frequency coordination with the Department of Energy, FCC, the military affiliate radio programs. I believe that was you.

Mr. FONASH. No, sir, I did not.

Mr. PASCRELL. You said on page number 4.

Mr. FONASH. You're talking about my written testimony?

Mr. PASCRELL. That is exactly what I am talking about. On page number 4 you said that some of the accomplishments of the SHARES program we are referring to include—and I am referring to the fourth one down—provided frequency coordination with the Department of Energy, FCC, military affiliate radio system, the U.S. Navy, FEMA, civil air patrol, amateur radio, et cetera, et cetera. You said that, right?

Mr. FONASH. Yes, sir, I did; in my written testimony.

Mr. PASCRELL. Now I want to ask you this question. I want to know what are the specific problems you encountered.

Mr. FONASH. Sir, what that is referring to is SHARES, which is an HF radio network that enables people to communicate. What you have to do is agree on certain frequencies that people will communicate on. And what that is referring to is what we did to coordinate with all these different agencies the frequency they would use on the HF.

Mr. PASCRELL. My question is what problems did you encounter in acting out that coordination?

Mr. FONASH. Sir, the only problems was making contact. We published a common frequency that everybody would have. Once we published the common frequency, everybody would sign onto that common frequency. After that, we would get agreement by working with the different organizations on what were the frequency assignments for use of the HF radio during Katrina.

Mr. PASCRELL. This is what you consider to be coordination of all of these entities dealing with communication?

Mr. FONASH. Yes, in regards to dealing with the HF radio and the SHARES network.

Mr. PASCRELL. I have no further questions.

Mr. REICHERT. The Chair will recognize himself for about 5 minutes or so.

I want to just mention there has been some progress made and I think most members of the audience and the panel may also be aware, some of the members here of the committee, this afternoon at 3 p.m., the Energy and Commerce Committee will mark the Digital Television Transition Act of 2005. This bill will set a firm deadline for the transition of television technology from analog to digital, which will free up some spectrum space for first responders.

So there is some progress being made, but I have the same passion that Mr. Pascrell and others on this committee have and I agree with Mr. Pascrell, too. It is fortunate that Mr. Weldon isn't here because he does get very, very passionate, as some of you may have been present for some of his questioning.

I want to go back to 1972. That may seem a little bit odd, but I started as a police officer on the street back in 1972. So when you talk about we have been discussing interoperability or operability for the last 10 years, it is not exactly true; it has been highlighted for the last 10 years, but it has been a problem for 30, 35, and 40 years.

I am just going to relay, I think pictures or stories draw a very clear picture of the problem because it is still happening today. In the mid-seventies I responded to a call as a deputy on the street in South King County. It was a young boy with a gun who had shot up the neighborhood. And when I arrived, he took aim at me and fired a shot.

He disappeared into the neighborhood and I took up a perimeter along with other police officers and I had a portable radio with me. A neighbor ran across the street from the opposite side of the road and said, hey, my neighbor just called me on the telephone. First line of communication. Hard-line telephone to the neighbor across the street. The man with the gun is behind my home, laying on his belly with the gun cradled in his arm, and he's ready to shoot some police officers who are walking his way with a K-9 unit who are in search of him.

I tried to get on my portable radio to let my supervisors know that I knew where the man with the gun was but I couldn't get through. It would not work. So I knew I had to take action, so I ran across the street and slid alongside the house and I saw the young boy with the gun laying in a prone position, aiming at the police officers that were approaching. I still couldn't get on the radio. No communication after all. Back then we had one frequency for the entire county in King County. It was not operable.

I had to run across the yard, threw the radio to the ground and wrestled the rifle away from the young man. Fortunately he was not hurt, the officers were not shot, and neither was I. But it is an example of a problem that is still happening today and we have to take—when you talk about immediate action, we can talk about Department of Homeland Security, we can talk about all the acro-

nyms that you have used to describe the different systems, but what we are talking about, as Mr. Pascrell said, is life and death.

So my first question is we do have to have this spectrum, we have to have additional wavelengths to work from. What do you see—and anyone on the panel, please answer—what do you see as the biggest vulnerability, the biggest challenge, the biggest hurdle that we need to overcome in making this work for our first responders whose lives are put on the line each and every day?

Dr. BOYD. Interestingly, I think the first problem is not a technical one, and let me make clear that we think release of the 24 megahertz is essential. They need that spectrum desperately. This will more than double what they have. Even once we get that, what is going to be required above all else is a willingness among public safety organizations to build cooperative agreements, build cooperative governments so they can put the agreements in place.

What we have discovered is that when we can work with communities together to bring together all of the players, and once we can get agreement on that, a lot of the basic technologies that will allow communications at least that command level—not the ideal interoperability we would like to get to—but that command level that is required to be able to pass the kind of message you talked about in your scenario is available now.

What we have to do, however, is to have the kind of leadership and commitment that will allow that to happen, and that is why most of what SAFECOM has been involved in is working directly with the public safety community to develop the kinds of tools that communities, collections of communities can use to put together that kind of governance and that kind of agreement.

Mr. MORAN. Yes, sir. I agree with what Doctor Boyd said there. More spectrum has been made available, more will be freed up when the DTV transition completes, and the Commission is looking now to see if additional spectrum is needed. And I believe we owe a report to the Congress in December in which we will make some recommendations in that regard. But I will say the Chairman has said to the Congress before that if additional spectrum is needed for public safety, the Commission—he will do what he can to have the Commission make it available.

Mr. REICHERT. Again, to point out, this is really a very urgent issue. Now we are talking about December, then January. I still go back to 1972.

Mr. MORAN. Absolutely. And I think it has been alluded to a little bit and I think Doctor Boyd mentioned it perhaps in his oral statement, but I think you said something like, I forget, how many thousands of—all of these public safety communications systems are owned and operated by State and local jurisdictions and it will be very expensive to get them into the 21st century to do a number of things, including interoperability. So a lot of these are aging systems and it is not going to be cheap. And there has to be leadership and there has to be commitment to get to where we need to get to and spectrum is part of it, and the Commission is committed to make sure that that works, but there is a lot more and a lot of investment that will have to be made.

Mr. REICHERT. In 1997 when I was first appointed sheriff in Seattle, we moved—began to move to 800 megahertz, and in that

process it was a mess. It still is a problem today in trying to communicate across that county of 2,200 square miles. And some of the competing interests, we know, as we drive by cell towers and we all of a sudden lose total communication on an 800 megahertz system, brand-new system that just falls apart when you drive by a cell tower. What are the competing interests that is prohibiting the advancement of our progress in this area to help first responders?

Mr. MORAN. Along with what you just mentioned about interference issues, the Commission—we do have—we are working on a plan to eliminate some of the interference problems I believe in the 800 megahertz area, so we are working that. We know that there had been issues. The Commission in the last year and a half, I think, has worked out a system that will over the next couple of years resolve a lot of those issues, but I still submit the big thing that is out there is it is going to be very expensive, and these things are owned and operated by State and local governments and it is going to be hard to do it. Even when spectrum is available, even when the systems are available, even when we know how to do the operating systems and we have the standards, it is going to be expensive.

Mr. REICHERT. Okay. Thank you. Chair recognizes the other gentleman from Washington.

Mr. DICKS. Thank you, Mr. Chairman, and congratulations on your new assignment as subcommittee chairman.

In looking at what happened down with the military, another lesson Pentagon planners will be studying after Katrina communications problems severely hampered the military's ability to talk to first responders. In some cases the military was reduced to using runners to physically carry messages between units and first responders. Part of the problem was that the storm destroyed some of the first responders' radio equipment, another factor was desertion in the New Orleans Police Department, which meant some people who were needed to operate radio equipment were gone, still other problems was many radios simply could not talk to each other.

Now, I don't know if the Chairman knows about this, but we have a company out in Seattle called—we have a number of companies in Seattle, by the way, but this one is called CoCo Communications, that has developed a system that enables people using different kinds of communications systems to share voice and data signals with each other. It does this by capturing the signals from each system, performing necessary translation through software routines, and then transmitting the signals on the appropriate channel. They refer to their technology as cryptographic mesh protocol.

Doctor Boyd, you should know about this because you have awarded a grant I think through your—to Love Field in Dallas to use this. There was a story in the Washington Post about a Prince William school district awarded a contract to CoCo. There's one at Franklin High School in Seattle. The Washington Post article said this: William County School System will be the first in the country to deploy at several schools a new technology that will offer administrators, teachers, police and rescue authorities a better way to communicate during emergencies, officials announced yesterday.

The technology developed by a Seattle-based CoCo Communications Corp and funded with a \$246,000 grant from U.S. Department of Justice will enable school and public safety workers to share information, even if one person is using a cell phone and another a radio.

In the next several weeks, two Prince William Schools, a middle and elementary school, will be equipped with a software program that seamlessly links different devices on a single network. Only one other school in the country in Seattle is using the technology, according to Mike Berman, a CoCo spokesman. The technology has implications for the whole Nations' security, Lucy S. Beauchamp, the Prince William school board chairman, said at a news conference yesterday. She pointed to the September 11th terrorist attacks, the Washington area sniper shootings, and hurricane Katrina as crises during which this kind of communications made possible by the CoCo software would have increased public safety. With this software, teachers trapped in a school with their students would use their cell phones or handheld computers to talk with police officers outside with walkie talkies. Officials would also be able to download images from the school or school bus video surveillance cameras onto their own devices, and instead of having to wait for police to call during a terrorism threat, school officials would be able to get urgent news to teachers who might be locked inside schools—inside classrooms with students. Schools are isolated. They have their own radios and telephones but they are not as integral part of our traditional first responder community, said Peter Ericson, vice present of CoCo. We're hoping to spread the technology to other schools and build what it calls the National School Protection Network.

Now, would this kind of technology help, Doctor Boyd? Is this the kind of thing we need to allow these disparate forms of communication to interact through this software? Do you know anything about this?

Dr. BOYD. Yes, I have met with CoCo Communications on a number of occasions, and in fact it addresses an important piece of the communications issue, because what it does is to provide what in the parlance of the communities is sometimes called an overlay, which allows the exchange of data across disparate systems. What it does not do, and it is important to understand these boundaries as well, it doesn't replace the radio itself, and so the radio still has to be able to make that RF communication with another radio. The answer is we think this is a very powerful—

Mr. DICKS. Is this a problem with Motorola? Is this a Motorola problem? I think we have heard about 80 percent of these radios are Motorola, and they have been unwilling or unable to fix these systems.

Dr. BOYD. Well, I can't speak for Motorola.

Mr. DICKS. You are the expert now.

Dr. BOYD. I understand, but I can't speak for Motorola.

Mr. DICKS. You can speak for the Federal Government.

Dr. BOYD. It is true, and I don't want to address this just to Motorola, because I think we need to talk about the industry at large and not just the RF pieces but communications pieces as well, and that is that there is an inevitable tendency—and we find this in

the cellular industry as well and all those manufacturers—to build proprietary components which make it extraordinarily difficult, especially in an emergency, to tie these things together. It also tends to tie you to a particular manufacturer's equipment when you move forward.

So a major part of what we are trying to do is to create open architecture, nonproprietary standards, so that we can—when local public safety agencies come out with their requests for proposals, require that they be nonproprietary. One of the nice parts about the CoCo application is that it doesn't matter what the underlying radio is. There are a couple of other software applications we also think are promising in the same way. It makes sure that the underlying equipment doesn't matter. As long as you make the two radios talk together, you can lay this on top and be able to communicate across proprietary systems. But it is entirely true that there are some issues that we are trying very hard to address to open up some of the proprietary elements of the infrastructure and it is entirely true that cause is part of our problem.

Mr. DICKS. Doctor Wells, we have been trying to get the National Guard to look at this system. I have talked to General Blum about this. Has the Defense Department looked at this technology at all?

Dr. WELLS. We have. But let me State for the record where we are with the National Guard. I have looked at CoCo in conjunction with Iraq, when we were looking at that. I need to get up to speed with what is happening on CoCo. I would second what Doctor Boyd said about the importance of open standards and open architecture. We are trying to move away from proprietary systems in DOD to get to maximum interoperability and that is really important. I will get back to you on where we stand on CoCo.

Mr. DICKS. Thank you, Mr. Chairman.

Mr. REICHERT. Thank you. The Chair will recognize the gentlelady from New York, Mrs. Lowey.

Mrs. LOWEY. I personally want to thank the Chairman for your powerful presentation. And to all the panel I want to thank you. However, we all understand the complexity of this. We have been talking about it for years, you have been aware of the challenge for much longer because of your own personal experiences.

I want to make it clear to all of us the reason we keep pressing is that this didn't appear overnight. Nine years ago, the final report of the Federal Public Safety Wireless Advisory Committee concluded, quote, unless immediate measures are taken to promote interoperability, public safety agencies will not be able to adequately discharge their obligation to protect life and property in a safe, efficient, and cost-effective manner.

In 2004 a GAO study on project SAFECOM began by stating in its 2-year history it has made very limited progress in addressing its objective. Now the study is a year and a half old—and we appreciate your presentation, Doctor Boyd—however, we understand that the agency still has problems and a project to establish a nationwide baseline for interoperability has been undertaken by SAFECOM. However, the assessment was to have been undertaken in 2004, it was delayed until 2005. It is now promised for the summer of 2006. And in addition, the President promised to cut overall

funding for the Office of Interoperability and Compatibility in the fiscal year 06 budget request by 11.5 million, or 35 percent.

Now, given the fact that the President has proposed to slash the budget of your office that is supposed to oversee emergency communications systems, the poor performance of existing programs, the fact that recent emergencies have highlighted the major problems that still exist, I think we have all good reason to question the commitment of the administration to get serious about this.

In fact, Doctor Boyd, I understand that given your huge responsibility, you have four people working in your office, and we understand that this is a huge challenge, but I can't help wonder how serious we are about this. Are we going to be sitting here a couple years from now talking about how this is a serious problem? In fact, in legislation I introduced, it included a \$5 billion over 5 years appropriation, because my concern is—and you talk about problems with Motorola and how important standards are—this goes back to our questions to Secretary Ridge, to establish standards.

If the Federal Government has real dollars to give out, then you could command that standards are going to be followed and that you are providing the dollars so you have the responsibility to demand results. You have laid out a very important program, but I would still like to ask you why it is taking so long. What can we do to move the process?

I am not going to get back to the spectrum issue because that has been adequately discussed, but even if—we know from the Baltimore experience, there have been articles on that—even if you have a system that is being developed by a particular community, if there are not Federal standards moved in place quickly, if you are not providing the money and requiring State and local governments to comply, I worry about where we are going to be next year and the year after. Doctor Boyd.

Dr. BOYD. Okay. Well, that is a lot of territory to cover but let me try. In response to the first issue, I first got involved in interoperability back in 1993, and the first project I tried to undertake was in San Diego County where we were able to put together a fairly primitive but effective interoperability solution. Took about 30 days to put the technology in place. It took 2 years to get all the players in the county to agree they wanted to play as part of it. So we have been working at this for some time, and understand that.

In 2003 when the Department of Homeland Security stood up, a decision was made then, and I was asked if I would come from Justice to Homeland Security to take over SAFECOM. At that point the first thing that I felt that we needed to do was to go back to those first responders and say what exactly is it that SAFECOM needs to do to meet your needs? What is it you have to have from us?

Out of that, we built a series of things, the first statement of requirements, we built common grant guidance where we in an interesting sort of way went to the folks who were going to be the recipients of the grants and said what it is you want us to require in these grants in order to make those things happen because we understand, first off, that while at the Federal level we often think we are providing humongous amounts of money, in fact more than

97 percent of the money that is spent in these communications systems is their money.

So our question was how do we fit this, how do we make this work the way you want? In working with them we created common grant guidance, which now for the first time at executive direction is included in every grant program touching on interoperability in the United States. We put it into place the first time in 2003, we had to do some adapting because we were following after the appropriation and had to fit what the law said for the COPS program and FEMA and those providing those grants.

For the first time, in 2001 SAFECOM was elevated as an executive level—a Presidential Management Initiative. Before then it had never been that. In fact, the way I funded interoperability attempts before that was to try to scrape off things from other programs where I could put that into place. Congresswoman Jane Harman will be familiar with that because we worked together in some of that in the Los Angeles arena as we tried to do those things. It wasn't until this became a Presidential Management Initiative that it began to arrive at that level.

In the current President's budget, as I understand it, we are budgeted for 28 for the office. We have been just like the Department of Homeland Security, the rest of the Department. We have been building a Department, a very large and complex Department over some time. I will also tell you the public safety community was in fact so happy with the way we have put things together, that in April of 04 they issued a joint statement which was signed by the chiefs of police, the fire chiefs, the major city chiefs, the major county sheriffs, League of Cities, Council of Mayors, Association of Public Safety Communications Officers, the National Public Safety Telecommunication Council, all of those expressing strong support for the way the program was put together, and it genuinely represented their interests. So that is what we have been working to do.

One of the things we have also been addressing is that 24 megahertz of spectrum to be released, and one thing that I think may be unclear that everybody needs to understand is one of the reasons the 24 megahertz has not yet come available is because legislation requires—the law requires that before the 24 megahertz can be released to public safety, at least 85 percent of each of the affected areas has to be capable of receiving and using high definition television. The consequence of that was a chicken-and-egg problem. You had broadcasters uninterested in building high definition television capabilities where nobody had high definition television receivers, and nobody interested in buying high definition television receivers because you didn't have the transmitters. So it is also important to understand that there is a legislative impediment in releasing the 24 megahertz.

Mr. REICHERT. The Chair likes to thank the gentlelady.

Mrs. LOWEY. Thank you very much. I appreciate the amount of time, and perhaps you can follow up because according to our information, the committee gave you marginally more than the President's request. So I think we still wonder, if this is a top priority—and it certainly seemed to be with Katrina—why there was a recommendation to cut the budget by 35 percent. So I thank you very



much for your skillful presentation. I look forward to working with my colleagues on this.

Mr. REICHERT. Thank you. The Chair now recognizes the gentleman from Pennsylvania, Mr. Dent.

Mr. DENT. Thank you, Mr. Chairman. I just want to clarify a few points here and ask a few questions. It is my understanding that between the State homeland security grant program, UASI, EDPP, for 2004 there have been \$2 billion available, a third of which have been drawn down for interoperability, not to mention the fact there are probably literally billions of dollars stuck in a pipeline, dollars that for whatever reasons have not been drawn down by the States that can be used for interoperability. And I also want to point out for the record too, there are certainly Department of Justice funds, COPS program, that is available for interoperability. That is an important issue and I support funding for it. There is a lot of money stuck in the pipeline that needs to be drawn down and a lot of reasons it hasn't been, but I want to put that out there for the record.

Question to Doctor Boyd, actually. How do you see the role of the World Wide Web in development of emergency communications systems and a dissemination of information by the government to the public during times of disaster, man-made or otherwise?

Dr. BOYD. Two pieces to that. One is obviously the Web provides some really useful capabilities because it tends to be very robust and it is a thoroughly redundant system. As you begin to lose pieces of it, it still works. So the Internet provides some real opportunities. What we have to make sure we do, though, is as we capitalize on and plan on and make use of the Internet is that when you have a major catastrophic failure, you also tend to use the public switch telephone network, for example, on which most of the Internet rides, essential as a backbone piece. So if you have access to the Internet, it offers powerful, powerful capabilities. The IP protocol, which some people sometimes confuse with the Internet, is the same kind of protocol that is used on the Internet but is in fact a protocol which offers some powerful capabilities in the wireless world independent of the Internet because it provides real possibilities for some serious interoperability.

Mr. DENT. Thank you. The next question is we have heard that amateur radio is effective and a highly regarded means of ensuring operability during disaster situations. Does any Federal agency direct the coordination of the use of amateur radio during disasters; and, if not, should amateur radio be coordinated on a State or Federal or regional basis?

Mr. FONASH. That's my answer. We have a program called SHARES which utilizes the HF radio. SHARES is a network of networks. It can include DOD, the amateur radio-operator, and, State and local operators. And so when SHARES comes up, all those networks come up. For example, in the Louisiana EOC, we actually had an amateur operator working SHARES in the State EOC. So, yes, we actually do use that. One of the basic tools that we use is HF amateur radio. There are limitations with the HF amateur radio, so it is one of the tools you have to use, but the power of it is that it is totally independent of the public network, so if the public network goes down, you have that as an alternative means,

but it is a limited alternative means and it does have problems; for example, atmospheric problems and limited data rates.

Dr. BOYD. I have been a licensed amateur radio operator since I was about 13. It is important to understand the amateur radio community, in addition to this capability, also has VHF, UHF and SHF capabilities because they have bands throughout the spectrum and there are, in fact, a number of activities that provide training. What I would suggest, having dealt with this for a long time, is that it is also important if you are going to use this—and local agencies and a number of sheriff's departments, police departments use this—you have to integrate them early, you have to train them properly, and you have to make sure they understand what their boundaries and rules are and how they fit, and they can become a powerful capability because in a lot of respects they probably own more equipment than the public safety community does.

Mr. DENT. My final question. I understand that the private sector, basically commercial communications operators rolled out temporary cell phone towers and distributed cell phones to first responders and victims of Hurricane Katrina. Was this coordinated by the local, State, and Federal governments, and are there agreements in place between the private sector and governmental entities to take advantage of the resources of private sector in such situations?

Mr. FONASH. Again, sir, we are responsible as the lead agency for ESF2. One of the key tenets of that is we have something called the National Coordinating Center for Telecommunications. It actually coordinates, between State, local and Federal Government and industry, solutions. And so many of those solutions were brokered through the NCC or through ESF#2 functions on a local basis. So, yes, we are involved in those.

Mr. DENT. Thank you. Anybody else wish to comment on that? Thank you, Mr. Chairman.

Mr. REICHERT. As you can tell by the buzzers and pagers going off, we are going to be voting soon, but we have time to recognize the gentleman from Alabama, Mr. Rogers.

Mr. ROGERS. Mr. Rey, I wanted to ask you about the communication kits that you all have given out through the buyer service. Tell us about those kits and what they do, how you deploy them, what timeline.

Mr. REY. Early on in the 1970s as we began to organize the incident command system to fight wildfires, we knew that we would be operating in fairly remote areas where traditional communication technology was nonexistent, and we also knew that we would be working with other Federal and State and local responders. So what we have done is two things. One is we have developed memoranda of agreement with our cooperators so we know how to make sure our communications systems are interoperable, theirs and ours. Second, we have developed a fire communications cache so that we can stand up an entire communications system with radios and repeating towers so that all of the responders to a particular incident are using similar or comparable equipment.

Mr. ROGERS. So when you say you stand up those towers, so if you are fighting a forest fire in a remote area that doesn't have any towers, you can put up temporary towers?

Mr. REY. That is correct.

Mr. ROGERS. What kind of timeline, how quickly?

Mr. REY. If we are deploying an incident command team we will have those established as they arrive on the scene, within 24 hours. We also set up the same systems in New Orleans, providing the equipment to other responders and particularly so we could communicate within our own incident command structure with interoperability.

Mr. ROGERS. So those you sent to New Orleans, you had those up and running within 24 hours.

Mr. REY. Twenty-four hours of our arrival, yeah.

Mr. ROGERS. Excellent. You stated that the incident management teams managed all agency radio, phone, data communications in the days following the hurricane. Can you explain exactly what the teams did to facilitate communications other than what you just described?

Mr. REY. Pretty much what I described is it. We wanted to make sure that we had communications within our own incident command structure as well as with the other responders that we were serving. Our role in this case was a supporting role, but both from a communications standpoint as well as all of the other logistical functions that we were providing.

Mr. ROGERS. Thank you. That's all I have. Thank you, Mr. Chairman.

Mr. REICHERT. Thank you. Just one quick statement. As you have, I am sure, have taken in the feeling here of the committee, this is an important issue for us and we hope that you will go back to your respective work areas and assignments and convey our sincere and express desire to move this along at a quick pace.

I want to thank all of you for being here today, for your valuable testimony. I want to thank the members for their questions. The members of the committee may have some additional questions for the witnesses, and we will ask that they submit those questions in writing. The hearing record will be open for 10 days. Without objection, the committee stands adjourned.

[Whereupon, at 12:12 p.m., the subcommittee was adjourned.]

