

# UNITED STATES FEDERAL COMMUNICATIONS COMMISSION

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JOINT ADVISORY COMMITTEE )  
ON COMMUNICATIONS )  
CAPABILITIES OF EMERGENCY )  
MEDICAL AND PUBLIC )  
HEALTH CARE FACILITIES )

Pages: 1 through 130

Place: Washington, D.C.

Date: November 28, 2007

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## HERITAGE REPORTING CORPORATION

*Official Reporters*  
1220 L Street, N.W., Suite 600  
Washington, D.C. 20005-4018  
(202) 628-4888  
hrc@concentric.net

FEDERAL COMMUNICATIONS COMMISSION

JOINT ADVISORY COMMITTEE )  
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MEDICAL AND PUBLIC )  
HEALTH CARE FACILITIES )

Commission Meeting  
Room - TW-C305  
Federal Communications  
Commission  
445 12th Street, S.W.  
Washington, D.C.

Wednesday,  
November 28, 2007

The parties met, pursuant to the notice, at  
10:05 a.m.

PARTICIPANTS:

- JIM BUGEL
- CURTIS M. BASHFORD
- RICHARD J. LIEKWEG
- JOHN F. NAGEL
- VIRGINIA PRESSLER, M.D.
- JOHN S. WILGIS
- THOMAS HARDY
- MICHAEL J. ACKERMAN, Ph.D.
- JOHN F. ADAMS, JR.
- DONNA BETHEA-MURPHY
- DREW E. DAWSON
- STEVE J. DELAHOUSEY
- COL. TERRY J. EBBERTS
- ERIC K. GRIFFIN
- LISA KAPLOWITZ, M.D., MSHA
- JONATHAN D. LINKOUS
- KEVIN MCGINNIS
- THOMAS S. NESBITT, M.D.
- MIKE ROSKIND
- CARL C. VAN COTT
- ERIC WERNER
- LISA FOWLKES

P R O C E E D I N G S1  
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(10:05 a.m.)

MR. BUGEL: This is a meeting of the Joint Advisory Committee on Communications Capabilities of Emergency Medical and Public Health Care Facilities. I'd like to welcome you back to Washington, and for those of you on the phone, welcome. What we'll do for the record right now is we will go through the roll call. Let's start with those on the phone.

Mr. Bashford?

MR. BASHFORD: Here. Present. Thank you.

MR. BUGEL: Mr. Liekweg?

MR. LIEKWEG: Here.

MR. BUGEL: Mr. Nagel?

MR. NAGEL: Here.

MR. BUGEL: Dr. Pressler?

MS. PRESSLER: Here.

MR. BUGEL: Mr. Mullin?

(No response.)

MR. BUGEL: Mr. Rogers?

(No response.)

MR. BUGEL: Ms. Sexton?

(No response.)

MR. BUGEL: Mr. Wilgis?

MR. WILGIS: Here.

1 MR. BUGEL: Mr. Hardy?  
2 MR. HARDY: Here.  
3 MR. BUGEL: Okay. All right. Dr. Ackerman,  
4 here?  
5 MR. ACKERMAN: Here.  
6 MR. BUGEL: Mr. Adams?  
7 MR. ADAMS: Here.  
8 MR. BUGEL: Ms. Murphy?  
9 MS. MURPHY: Here.  
10 MR. BUGEL: Mr. Corry?  
11 (No response.)  
12 MR. BUGEL: Mr. Dawson?  
13 MR. DAWSON: Here.  
14 MR. BUGEL: Mr. Delahousey?  
15 MR. DELAHOUSEY: Here.  
16 MR. BUGEL: Colonel Ebberts?  
17 MR. EBBERTS: Here.  
18 MR. BUGEL: Mr. Griffin?  
19 MR. GRIFFIN: Here.  
20 MR. BUGEL: Dr. Kaplowitz?  
21 MS. KAPLOWITZ: Here.  
22 MR. BUGEL: Mr. Linkous?  
23 MR. LINKOUS: Here.  
24 MR. BUGEL: Mr. McGinnis?  
25 MR. MCGINNIS: Here.

1 MR. BUGEL: Dr. Nesbitt?  
2 MR. NESBITT: Here.  
3 MR. BUGEL: Mr. O'Brien?  
4 (No response.)  
5 MR. BUGEL: Mr. Raheem?  
6 (No response.)  
7 MR. BUGEL: Mr. Roskind?  
8 MR. ROSKIND: Here.  
9 MR. BUGEL: Mr. Traficant?  
10 (No response.)  
11 MR. BUGEL: Mr. VanCott?  
12 MR. VAN COTT: Here.  
13 MR. BUGEL: Mr. Wuerker?  
14 (No response.)  
15 MR. BUGEL: Well, again, welcome, ladies and  
16 gentlemen. It's my pleasure at this point to  
17 introduce our primary sponsor here at the FCC, Chief  
18 Derek Poarch, who is the Chief of Public Safety and  
19 Homeland Security Bureau. I'd like to turn to the  
20 podium over to him.  
21 Thank you, Chief.  
22 MR. POARCH: Thank you, Jim. Good morning.  
23 Welcome to Washington. It's good to see a number of  
24 familiar faces around the table, and on behalf of  
25 Chairman Martin and the other Commissioners I'd like

1 to welcome you to your second meeting of the Joint  
2 Advisory Committee on Communications Capabilities for  
3 Emergency Medical and Public Health Care Facilities.

4           Also want to thank you for the time that  
5 you're already putting in to the important work of  
6 this Committee. As you know, this Committee brings  
7 together experts from various spheres of the emergency  
8 medical and public health care communities as well as  
9 the communications industry.

10           Congress has tasked this Advisory Committee  
11 with assessing the specific communications  
12 capabilities and needs of emergency medical and public  
13 health care facilities, options to accommodate growth  
14 of communication services used by these facilities and  
15 recommendations to improve the integration of these  
16 communication systems with existing and future  
17 emergency communications networks.

18           This is a particularly challenging task  
19 since the Committee must report its findings to  
20 Congress by February 4, 2008. In light of this, I  
21 know that each of you are committed to meeting this  
22 challenge and have spent a considerable amount of  
23 time and energy to get to this point in the process.

24           Today's meeting is especially important as  
25 the Committee will hear reports on the steps its

1 members have taken thus far to meet this requirement.

2           The Committee will also hear presentations  
3 from such experts as the Department of Homeland  
4 Security, Motorola and Cisco and will also receive a  
5 briefing from Jake Jennings, the Associate Chief of  
6 the FCC's Wireline Competition Bureau on the  
7 Commission's Rural Health Care Pilot Program.

8           These presentations will provide valuable  
9 information to each of you, and I look forward to the  
10 participation of each of the speakers. Again, thank  
11 you very much for the time that you're putting in to  
12 this.

13           I know it's a short and compacted timeframe  
14 as we go through the holidays, but your leadership on  
15 this issue is very, very important to ensuring that  
16 Congress has the meaningful information that it needs  
17 in order to make an informed assessment of the state  
18 of communications capabilities in health care and the  
19 public health community.

20           So my personal welcome and thanks to each of  
21 you. I can't stay with you all day, but I do hope to  
22 stay with you for an hour or so this morning.

23           Jim, thank you very much for allowing me to  
24 speak as you start your meeting.

25           MR. BUGEL: Thank you very much. Couple of

1 procedural issues. For those of you on the phone,  
2 when you are not speaking please keep your phone on  
3 mute and put your phone back on mute after you're done  
4 speaking. We've made a slight change in the agenda.

5           If you look at your agenda, we're going to  
6 have the working group chairs provide read outs, and  
7 then we're going to move the Department of Homeland  
8 Security as our first presenter and then continue with  
9 them in order. Just a couple of opening comments.

10           As we've noted in our Committee newsletter,  
11 over the last couple of weeks there's been a number of  
12 recent activities pertinent to our Committee's mission  
13 and relevant to the public health care debate  
14 specifically on health care information technology.  
15 Specifically, the FCC has increasingly explored the  
16 important correlation between communications  
17 technology and public health care services.

18           As many of you know, last week FCC Chairman  
19 Kevin Martin announced a \$417 million in grants to  
20 expand telehealth initiatives in rural America.  
21 Dubbed the Rural Health Care Pilot Program, this  
22 initiative will enable rural health care providers to  
23 utilize high speed internet networks to connect  
24 isolated clinics to more sophisticated medical  
25 resources in urban areas.



1           The program intends to facilitate the  
2 deployment of broadband connections to 6,000 research  
3 centers, universities, hospitals and clinics. As we  
4 all know, connecting these rural health care providers  
5 through IP networks can play a critical role in the  
6 efforts to communicate and respond to disasters.

7           We will hear more from the FCC regarding  
8 this later on today. The challenge which many of us  
9 have learned over the early stages of our  
10 investigation is that too many rural health care  
11 providers and clinics still use dial up internet  
12 access, which is not capable of handling bandwidth  
13 intensive applications such as graphics and full  
14 motion video.

15           Furthermore, as many of you know, high speed  
16 internet access is essential for telehealth activities  
17 like videoconference consultations, second opinions  
18 from out of state specialists and the uploading of  
19 medical records. Such high speed access is also  
20 critical to enable the real time exchange of medical  
21 diagnosis and information in a mobile environment.

22           All these applications require the critical  
23 medical information to be delivered immediately which  
24 necessitates a much higher degree of reliability than  
25 most internet applications enjoy today. What's more,

1 the FCC program will also work to upgrade existing  
2 telehealth networks to enhance their communication  
3 systems, improving strong programs and networks that  
4 are currently assisting doctors and patients.

5           When Chairman Martin first proposed this  
6 program on November 13 he also expressed his intention  
7 to encourage participants in the pilot program to  
8 coordinate telehealth networking with the Department  
9 of Health and Human Services.

10           At a meeting of the American Health  
11 Information Community in Chicago that Martin attended  
12 with Health and Human Services Secretary Michael  
13 Leavitt, Martin explained how coordination of  
14 telehealth networks with HHS and the Centers for  
15 Disease Control and Prevention would encourage  
16 communication of time sensitive information, and thus,  
17 more informed emergency responses.

18           Real time information can speed the  
19 identification of diseases and reduce the time needed  
20 to respond to an outbreak. However, the success of  
21 such initiatives require that networks be able to  
22 transmit information quickly and that the transmission  
23 of critical medical information not be plagued by the  
24 latency or other network congestion related problems.

25           This is essential to our findings for

1 Congress. As a member of the Joint Advisory Committee  
2 I commend Chairman Martin and the FCC staff for  
3 spearheading a critical program that will only  
4 highlight and illustrate the additional and far  
5 reaching potential gains that can be realized when  
6 policymakers embrace information technology in the  
7 public health care debate.

8           Also, on November 1 the FCC Public Safety  
9 and Homeland Security Bureau, along with HHS, hosted a  
10 health care summit on emergency communications,  
11 response and recovery. Several of this Joint Advisory  
12 Committee members either participated or attended.  
13 Participants in the summit discussed the emergency  
14 preparedness plans of hospitals and medical care  
15 facilities in relation to the communications  
16 technology capabilities.

17           They also focused on the benefits of using  
18 broadband technology for telemedicine, information  
19 sharing and in managing responses to public health  
20 emergencies. We have a lot to learn from one another  
21 and additional experts in this field. The dialogue at  
22 forums such as these will only seek to further our  
23 insight and knowledge into the key subject areas that  
24 Congress is waiting to hear from us about.

25           With all this being said, I could go on much

1 longer covering events and happenings that have  
2 occurred since we launched our Committee, so I'll  
3 spare you details for the moment given that we have a  
4 very busy agenda today. More importantly, today I am  
5 eager for us to learn about what the working groups  
6 have accomplished and to hear from our presenters.

7           Before we move on I'd like to focus a bit on  
8 the road ahead and Committee process. First, I want  
9 to thank each of you for your commitment and efforts  
10 to date. I am endlessly amazed at the breadth and  
11 depth of talent that we have assembled together in  
12 this room.

13           Already, we have been meeting in our working  
14 groups, and reviewing relevant materials and  
15 developing outlines. Last week marked the end of  
16 Phase 1 of our efforts. With reports from each group  
17 we now should have the sense of the current  
18 communications capabilities of health care facilities,  
19 emergency response mechanisms and technology  
20 integration in the public health care space, as well  
21 as outlines for the work ahead.

22           Now, we are entering the second phase of our  
23 efforts. As you will recall from our inaugural  
24 meeting, our Phase 2 work plan includes identifying  
25 the challenging needs and requirements for new

1 communications at health care facilities while also  
2 determining what specific capabilities will be  
3 improved upon and what plans are necessary to  
4 accommodate growth.

5           Today, I want to focus on four upcoming  
6 Phase 2 deadlines given our quickly approaching  
7 statutory deadline. First, from December 1 to  
8 December 13 working groups are expected to continue to  
9 meet. Two, by December 14 working groups need to have  
10 interim draft reports written. These documents are to  
11 be presented by the working groups at the December  
12 monthly meeting.

13           Three, December 18 we will host another  
14 monthly meeting for the entire Advisory Committee.  
15 Working group chairs will give briefings on the work  
16 completed thus far. January 8 marks the end of Phase  
17 2 when the final Phase 2 work product needs to be  
18 completed and drafting continues.

19           I know this is a very brief and incredibly  
20 challenging timeframe, especially during such a busy  
21 time of year, but Congress gave us a brief timeline  
22 recognizing the importance of the topic at hand and  
23 the desire to expeditiously hear back from us. Given  
24 the abbreviated timeline we already need to begin the  
25 task of narrowing and focusing the content of our

1 work.

2 I am reminded of a blacksmith who is given a  
3 dull piece of metal of which to make a useful tool.  
4 He begins by transforming the blunt steel into a  
5 useful tool by hammering it into a shape, but only  
6 when he files away the edges and hones the edges by  
7 removing bits of steel does the knife gain its  
8 sharpness to become a useful tool.

9 To forge a successful report much of our job  
10 is going to move forward likewise involving figuring  
11 out which parts we can file away as less necessary and  
12 improving the quality and usefulness of our work  
13 product by continuously honing and sharpening the  
14 focus of our effort.

15 Again, I want to thank everybody for their  
16 effort. We are now entering another phase. I am very  
17 encouraged by the work product thus far, and I believe  
18 we now need to start fine tuning.

19 With that -- excuse me. Has someone joined  
20 us on the bridge?

21 MR. MOYEN: Dale Moyen with Hawaii Pacific  
22 Health joined about 10 minutes ago.

23 MR. BUGEL: Okay. Thank you very much. I'd  
24 like to turn to our agenda today, and I would like to  
25 have our first working group presentation by Mr.

1 McGinnis of the Emergency Medical Working Group.

2 MR. MCGINNIS: Thank you, Mr. Chair, Chief.

3 Our charge at the inaugural meeting was to identify  
4 the communications needs and requirements of emergency  
5 medical users and to review proposals by the other  
6 groups as they pertain to emergency medical users with  
7 some key deliverables of a statement of requirements  
8 of emergency medical users and some use cases to  
9 illustrate those.

10 I'll discuss that more in a couple of  
11 minutes. The progress that we've made to date, we've  
12 been busy, no busier than the other work groups, I'm  
13 sure. We started our work because we were aware of  
14 the good work of many folks who have gone before us  
15 and have addressed among other issues emergency  
16 medical communications.

17 There have been a number of landmark  
18 publications within our field which are listed here  
19 including the *EMS Agenda for the Future*, a whirl wind  
20 frontier version of the same by the DHS Safecom  
21 organization, *The Statement of Requirements for Public*  
22 *Safety*, which includes emergency medical services,  
23 SORs, and then more recently some work by the  
24 Institutes of Medicine which issued three reports, two  
25 of which we considered, one *EMS at the Crossroads*,

1 which addresses EMS, and then a second on hospital  
2 based emergency care, all of which have emergency  
3 medical communications components.

4           Finally, we did as well look again at the  
5 findings of the Katrina panel and the 9/11 Commission.  
6 Those documents, particularly the EMS specialized  
7 documents, bring home a notion that I think is just  
8 important to realize at the outset and that is EMS is  
9 a weird beast.

10           It has traditionally been derived from a  
11 number of other disciplines which were around for a  
12 lot longer than we have been including public safety,  
13 public health and medicine and health care. EMS is a  
14 more complex entity than folks usually think of. When  
15 they think of us, they think of ambulances.

16           In fact, we consider ourselves a very  
17 complex system that extends from preventing injuries  
18 and emergent illness through to rehabilitation from  
19 those events when we cannot mitigate them or we cannot  
20 prevent them.

21           They include components of the system  
22 including communication systems, and clinical care and  
23 other aspects and stretch across a number of  
24 specialties from trauma to pediatrics, cardiac and  
25 stroke and involve not only ambulances but the



1 facilities to which they transport and which oversee  
2 their medical care in the field and those  
3 professionals that oversee that care.

4           Those are just underscored by the documents  
5 that we reviewed and thought it would be worth a  
6 mention. Those documents all fairly uniformly  
7 recognize that the communication systems in EMS are 35  
8 years old, and fragile, and have aging infrastructure,  
9 and aging capabilities and fairly simplistic  
10 capabilities that were dreamed up in 1970 and today  
11 don't really serve our needs entirely.

12           They were some very simple VHF and UHF  
13 systems that have to make the matters worse been added  
14 on on an AD HOC basis with cell phone capability, 700  
15 and 800 megahertz capabilities and other capabilities,  
16 which in some areas when those changes are made make  
17 systems incompatible from jurisdiction to  
18 jurisdiction.

19           So we are served now by an aging fragile  
20 infrastructure and one in which there has not been  
21 planned growth. They system has been proven to be  
22 fragile when most needed.

23           Today, given the needs of patients in  
24 emergencies and given the capabilities of  
25 communications technology, information technology,

1 intelligent transportation systems, we are simply not  
2 doing the job because too often paramedics in the  
3 field find themselves wanting information 20 minutes  
4 ago.

5           Is the helicopter available? Is the trauma  
6 center on divert? Gee, I wish I had known that 20  
7 minutes ago. How many patients do I have? How bad  
8 are they? The capability of having that information  
9 is with us today. We simply don't have the systems to  
10 support that.

11           We have to learn in EMS to adapt to and  
12 adopt technology which is not just voice based, that  
13 is talking to somebody to get a piece of information,  
14 but rather the concepts of taking information and  
15 pushing it out to a place, parking it in a database  
16 and then pulling it in when you need it.

17           If we can embrace information technology and  
18 the intelligent transportation system types of  
19 technology we can do things like have a screen that  
20 looks like this on our PDA or in our ambulance so that  
21 we have information as it happens, like an automatic  
22 crash notification alert that tells us we've got two  
23 patients that crashed a minute ago and that their  
24 severity is good, bad or ugly.

25           Based on that information things happen in

1 the system, like a helicopter is automatically  
2 dispatched at the same time the ambulance is  
3 dispatched, and we don't wait 20 minutes for the  
4 ambulance to get out there, determine whether you need  
5 a helicopter and then dispatch the helicopter. So  
6 things happen simultaneously.

7           Then some of that information that is put  
8 out into a database and parked there until you need it  
9 might be how to tear the Toyota Prius apart to get the  
10 patient out without killing yourself. That's on time  
11 learning en route to the call. We can do that or we  
12 could do that if we had the ability. That is our  
13 future. There's much quicker access to information.

14           When we get to the side of the trauma  
15 patient at the car crash, being able to immediately  
16 walk up to the patient, apply a very small monitor  
17 that starts sending vital signs into a database in  
18 your PDA and at the ambulance, to be able to start  
19 talking a description of the patient into a speech  
20 recognition program that goes into yet another  
21 database, and then being able to feed their health  
22 record into your PDA which goes into a third database,  
23 and being able to do that without writing on a purple  
24 glove or trying to remember information from one  
25 patient, to the next patient, to the next patient in a

1 car crash would be an awfully nice thing for me.

2           Another nice thing for me as a paramedic  
3 would be to have the physician in the hospital or the  
4 helicopter crew coming in the helicopter have a screen  
5 that feeds into all those databases I just created at  
6 the same time I'm creating them so they can see  
7 through video, they can look at that patient's  
8 condition in the speech recognition program I did, and  
9 then read the vital signs coming out of that monitor  
10 in real time and not have to talk to me at all  
11 necessarily.

12           That's our future, and that's what those  
13 documents I just mentioned describe as our future.  
14 Now, as for as the report to date we are pleased with  
15 the overall report organization that seems to be  
16 emerging here because it is an organization that's  
17 been used in previous EMS reports looking at where we  
18 are now, where we want to be and how we get there may  
19 be the way this report turns out.

20           Another thing that emerged in our look at  
21 the recommendations from these previous reports as  
22 well as adding our recommendations at this point is  
23 that we've further organized this into sections on  
24 planning, issues, operability issues and  
25 interoperability issues in particular to keep our

1 focus not just on the buzz word interoperability these  
2 days but to recognize that there are many other issues  
3 beyond that.

4           Let me just run down some initial  
5 recommendations and there are a slew of them. We  
6 recognize that in concert with the other working  
7 groups we are going to need to coordinate, and pare  
8 way down and perhaps adjust our focus in some of these  
9 areas. So, how we get there. A recommendation in the  
10 planning area.

11           We're suggesting that for enhanced  
12 coordination among all those agencies that do  
13 particularly emergency communications work in the  
14 federal government that there be established a federal  
15 interagency committee on emergency communications,  
16 that it be coordinated by one of those agencies,  
17 possibly DHS, OIC/OEC, that there be established  
18 perhaps sort of a strange entity but one that we know  
19 in EMS, an offshoot of the FICEMS process, Federal  
20 Interagency Committee on EMS, that there be a state  
21 local advisory committee reporting to that group that  
22 consists of public safety, EMS, public health, health  
23 facilities and others and that it be well-funded so it  
24 has the opportunity to meet and aggressively advise.

25           A second area here is that we would like to

1 see that group assure that health and medical  
2 interests are included in grant guidance for grants  
3 going to states and locales.

4           We would like to see an organization,  
5 perhaps the National Association of State EMS  
6 Officials, be funded to create model state legislation  
7 in which EMS communications plans are required and  
8 must be coordinated with a statewide communications  
9 interoperability plan that requires that EMS health,  
10 medical interests be represented on Statewide  
11 Interoperability Executive Committees or similar  
12 committees and that within those communications plans  
13 that a prioritized development is encouraged which  
14 focuses first and foremost, particularly in states  
15 with great rural areas, basic operability, fixing the  
16 1970s infrastructure problems, then moving on and  
17 addressing basic operability in terms of having  
18 statewide system development and coordination and not  
19 this AD HOC development, that as a part of basic  
20 operability development that redundancy and hardening  
21 of systems be assured.

22           Then we move on to interoperability by  
23 making sure that routine daily communications occur  
24 among EMS, public health and medical facilities and  
25 not just those disasters when they're needed, that

1 basic interoperability be assured by making sure that  
2 state systems move to the right on the SafeCom  
3 interoperability continuum, which is what that is.

4           We would like to see again in the planning  
5 area establishment of national standards on patient  
6 identification for routine and mass casualty tracking,  
7 standards for patient information exchange, again, in  
8 routine and mass casualty incidents and patient  
9 information exchange capabilities in real time.

10           We recognize that a number of these efforts  
11 are going on in AHIC, and the Office of the National  
12 Coordinator in Health and Human Services and in other  
13 areas. We suggest that perhaps a new interagency  
14 committee on emergency communications might be able to  
15 mediate these with a lead going to DHHS or one of the  
16 members. There needs to be much more coordination of  
17 this development than there is apparent right now.

18           Moving on to operability. We would like to  
19 see funded studies of communications implications,  
20 like bandwidth requirements, for new patient care  
21 technologies. That is, if we do send multi vital sign  
22 telemetry, like I just illustrated, how much bandwidth  
23 do we need? What are the implications in an urban  
24 area for doing that sort of thing?

25           We'd like to then see the FCC facilitate the

1 availability of bandwidth and related resources to  
2 help implement these modalities. We'd like to see the  
3 new public safety spectrum trust be sure to include  
4 EMS health and medical interests as users within that  
5 bandwidth and to use its strength to facilitate group  
6 purchasing for equipment, software and other needs for  
7 becoming effective users of that bandwidth.

8           It's a tremendous potential resource for us,  
9 and we need to be able to use it. We'd like to see  
10 the universal service program fund be used to develop  
11 rural frontier EMS communication systems and to  
12 qualify EMS users under that program. We'd like to  
13 see the federal interagency committee, the new one  
14 that we're suggesting, encourage the Department of  
15 Defense to transfer technology effectively to civilian  
16 EMS health and medical use.

17           We would like to see on the hospital  
18 facilities side that when Congress responds to the IOM  
19 report on hospital based emergency care that it  
20 include considerations of advanced communication  
21 systems within its addressing uncompensated care and  
22 trauma systems, that it include specific funds for  
23 uncompensated care in emergency departments that  
24 address advanced communication systems that are  
25 used to oversee EMS for patient tracking and



1 information and to telemedically, if that's a word,  
2 connect facilities.

3           We also would like to see the centers for  
4 Medicaid and Medicare services be directed to include  
5 in reimbursable costs advanced communication systems.  
6 We do have some Katrina panel recommendations in the  
7 report, which the group I'm sure is well aware of.  
8 We're not quite sure how we're addressing those at  
9 this point. We need to work on them further.

10           We'd like to see the new interagency  
11 committee and its advisory committee develop guidance  
12 to establish baseline compatibility for all systems,  
13 establish baseline direction for establishing layers  
14 of redundancy to guide the model legislation and plans  
15 that we've just addressed so that EMS communication  
16 systems are to develop guidance on the certification,  
17 testing and inspection of emergency communication  
18 systems probably on a state or local basis, and then  
19 to enforce the interoperability continuum that we just  
20 looked at.

21           Finally, our plan at this point is we're in  
22 the process of gathering comments from our work group  
23 on the draft that we have to date. We're very anxious  
24 to hear the work of the other work groups so that we  
25 can start to coordinate our thoughts with their

1 thoughts. We realize the need to revise and pare down  
2 our recommendations.

3 We need to address whether we want to do  
4 this as a statement of requirements with use cases or  
5 under the current outline we've been developing and  
6 whether we want to use the where we want to be section  
7 as a use case, and we'll coordinate through the  
8 program management committee to address that.

9 Our comments are due from our committee on  
10 the 3rd. We're going to have a conference call on the  
11 7th at 4:00 eastern time. We are going to do a  
12 redraft and have it for review at an expert panel  
13 meeting being sponsored by the National Association of  
14 EMS Officials, the National Association of EMS  
15 Physicians, the National Public Safety  
16 Telecommunications Council, which is being held on  
17 December 12.

18 That's just going to provide us with some  
19 input through our association to the work group. Then  
20 we are planning to have our draft done on or about the  
21 14th as required. That is that. I'm glad to take  
22 questions if that's appropriate.

23 MR. BUGEL: Any questions from the Committee  
24 members?

25 (No response.)

1 MR. BUGEL: On the phone?

2 (No response.)

3 MR. BUGEL: Kevin, I want to thank you very  
4 much. Very thorough. Like all the other groups you  
5 have a tremendous body of work to draw upon, but you  
6 have the expertise and outside resources that are  
7 helping to create a very thorough examination of the  
8 issue.

9 Again, knowing everything that's going on  
10 with you and the other task force members in terms of  
11 other activities, we really appreciate your diligent  
12 effort here. I'm encouraged by watching your group  
13 deliberate and examine the issues so thoroughly. So  
14 thank you to you and, Carl, Vice Chair, and the other  
15 working group members.

16 MR. MCGINNIS: Thank you, Mr. Chair.

17 MR. BUGEL: Now, I'd like to turn to Mr.  
18 Linkous and the Public Health Working Group.

19 MR. LINKOUS: Thank you, Mr. Chairman. Want  
20 to take a few minutes to summarize where we are right  
21 now as a group, but first I want to start by thanking  
22 the members of the group because there's been a  
23 tremendous amount of work that's been done so far by  
24 all of the members. It's kind of amazing to me.

25 I guess it's not luck, it's been by design

1 by the Commission and by the Chairman that the group  
2 has been made up of a number of people from completely  
3 different walks of life in this area and has brought  
4 together a lot of information.

5 MR. BUGEL: I had to have some entertainment  
6 value.

7 MR. LINKOUS: Well, we do appreciate it.  
8 The group is focused on the emergency communications  
9 needs and requirements of public health and medical  
10 facilities both.

11 Although the group is the Public Health  
12 Working Group, it's really both medicine and public  
13 health represented by hospitals, public health  
14 facilities, community facilities, et cetera, looking  
15 at both the current capabilities of those facilities,  
16 the current challenges and then finally moving into  
17 recommendations to meet those challenges.

18 So that's been our focus. Through the  
19 meetings we've had and through the individual work of  
20 the members we really have devoted a lot of time on  
21 putting together a survey of current work in the area  
22 both on conditions, databases and existing  
23 recommendations by various organizations looking at  
24 public health departments, the national associations  
25 dealing with public health, hospitals, medical

1 societies, federal reports, special task force  
2 reports, et cetera, all dealing with this area.

3           There's a tremendous amount of activity  
4 involved. As I'm sure every work group has found  
5 there's more information than we possibly have time to  
6 digest, so it's fortunate that other folks have  
7 already gone ahead and helped our work a little bit by  
8 doing some of the recommendations in some key areas  
9 that we have already.

10           We'd like to focus a lot of work on really  
11 two areas it seems like. One is on looking at  
12 telecommunications networks themselves, the  
13 communications facilities, the bandwidth, et cetera,  
14 issues, and then look at related applications that are  
15 used along those lines that both add to the  
16 communications capabilities of the facilities.

17           I guess the quick summary of what we have  
18 found so far is that there is a lot being done right  
19 now by a lot of players all over the country. Having  
20 said that, there is a lot that's conflicting, there's  
21 a lot of activity that's duplicative. All areas of  
22 the country and all areas within the sector are not  
23 covered, and certainly it's not integrated.

24           Having said that, I think it's important to  
25 say at least in public health and in many parts of the

1 medical and related communities, involvement in  
2 emergency response is somewhat new.

3           There's a changing way that we're designing  
4 our systems in the country maybe as the result of  
5 9/11, maybe as the result of other activities as well,  
6 and so I think we're in some extent forging new paths,  
7 and so I don't think it's a bad news, I think it's  
8 just as we learn along the way there are certain  
9 things that have come across that we've learned from,  
10 and I'll summarize some of those in a minute, but I  
11 think all the members, if I can speak on behalf of the  
12 group, I think were encouraged by the great amount of  
13 activity that's underway throughout all the areas that  
14 we're looking at.

15           So first, we looked at the current public  
16 health and medical telecommunication systems. Again,  
17 we found that there's a variety of emergency  
18 communication systems already in place, some  
19 redundant, some purposely redundant.

20           Many public health and medical institutions  
21 have a number of activities and systems they've done  
22 through the funding of federal agencies like Health  
23 and Human Services preparedness grants, telemedicine  
24 funding, CDC grants, and the systems use a variety of  
25 technologies that are in place throughout the country.

1           However, a key to assuring these systems in  
2 place is adopting more of a regional approach because  
3 we've seen that many of them are not coordinated, they  
4 are not in place working with each other, they're  
5 vertically independent and horizontally independent of  
6 each other.

7           You'll have a hospital with an emergency  
8 communication system that fits the hospital well, but  
9 you get outside of those walls and it doesn't  
10 necessarily work. Similarly, within a community  
11 you'll have a public health facility and a public  
12 health network that might be operating but maybe not  
13 operating in the same way.

14           Also, within the facilities themselves  
15 bandwidth is increasingly an issue, particularly with  
16 the use of advanced applications such as  
17 videoconferencing and other types of data  
18 transmission, that the bandwidth that's currently  
19 available for a hospital or a public health department  
20 may be fine for day-to-day operations, but when you  
21 move into emergency communication needs that bandwidth  
22 may be severely limited, particularly as we clamp down  
23 on the bandwidth available for other parts of the  
24 population.

25           It's really important that issue be

1 addressed by both public health and the medical  
2 community is the issue of bandwidth, at least a  
3 bandwidth in a way that's flexible for times of  
4 emergency situations.

5           We found that there is of course a number of  
6 technical interoperability issues that we're hoping  
7 that the other work group dealing with  
8 interoperability is going to handle so we won't have  
9 to face too much of that challenge ourselves. And so  
10 it begins. Nevertheless, we have certainly identified  
11 that as a major issue.

12           Another one is that federal agencies and  
13 programs of course need to do a lot more coordination,  
14 so I am enthused that Kevin's work group has already  
15 recommended that there be some coordination on that  
16 level, and we certainly have found that as well, but  
17 also, that there's a number of failed communication  
18 systems that have been deployed during emergency  
19 operations that are not necessarily coordinated on the  
20 local, or regional, or state level, that they end up  
21 being independent emergency communication systems that  
22 probably we need to take a look at.

23           Another area is inclusion and coordination  
24 with existing emergency public safety. There is  
25 certainly on a national level within a regional level



1 a tremendous change has taken place in coordination  
2 with public health and medicine between public safety  
3 and EMS in terms of planning and evaluation, looking  
4 at areas such as inclusion and the disaster  
5 preparedness centers.

6           However, on the communication systems they  
7 still unfortunately in too many communities operate  
8 separately. That is a major issue for the country.

9           Certainly from my understanding of the  
10 discussions of the Committee, both independently and  
11 as a group, they're going to be one of our major  
12 findings is a need to integrate within the emergency  
13 communication systems and to reach out to include  
14 trauma centers, medical centers, public health  
15 departments, and even based on the experience of  
16 certain disasters, like what we've had in California  
17 with the fires and Katrina, with the earthquakes, with  
18 other situations, the need to include communications  
19 with other facilities that may not normally be  
20 considered, for example, nursing homes, that may need  
21 to be part of a communications mechanism in some way  
22 so that they are brought into the system as well.

23           Related applications is another area.  
24 Electronic patient records, bed census, patient  
25 tracking, we've found is really integral to the issue

1 of communications capabilities.

2           Having a great communication system alone  
3 without the ability to find out where the patient is,  
4 having a great communication system that it can find  
5 the patient but has no idea what their medical history  
6 is, what their drug prescriptions are, is not going to  
7 be a complete system.

8           So clearly, bed tracking systems, bed  
9 inventory systems, are really critical. Some states  
10 and regions are putting those in place, but they tend  
11 to be independent and they're not coordinated. One  
12 region of the country has no idea what another region  
13 has done or even one city has no idea what another  
14 city has done.

15           Fortunately, there are national standards  
16 that are starting to be put in place. The work on  
17 electronic records, the work on patient tracking such  
18 as the HITSP recommendations, recommendations through  
19 NIMS, and even some of the regional organizations that  
20 are being formed such as RIOs are a start in putting  
21 together some of the things that we need to have done  
22 for getting this electronic data together.

23           However, the progress has been agonizingly  
24 slow, especially when you compare the health care  
25 industry and even the emergency medical community

1 industry to other industries such as banking,  
2 entertainment, that has made much further progress on  
3 developing information technology applications and  
4 putting them in place.

5           We need a better priority, and I think  
6 that's going to be another recommendation that's  
7 coming from the Committee is the higher priority on  
8 putting in place these systems for not only keeping  
9 track but also transferring information in times of an  
10 emergency.

11           Sometimes our electronic records are being  
12 put in place, but they're often in a stovepipe  
13 situation that we can't use them in a way that may be  
14 important. Existing telecommunications networks used  
15 for other purposes. I think at least I want to  
16 personally applaud the Commission for the Chairman and  
17 for the work of the staff, Jake and others on the  
18 announcement of the pilot programs for telemedicine.

19           I know we'll hear later from them. I think  
20 it's a tremendous step forward, and I think that work  
21 and that activity needs to be brought into this. So  
22 I'm encouraged to see that on the agenda today, and  
23 that's going to be another area that there's a  
24 tremendous amount of work that's been done.

25           There are 200 networks already out there,

1 but again, operating independently is not going to  
2 help us unless we help link them together.

3           The final area of general activity and  
4 interest at this point is the interesting observation  
5 that we ended up having and to some extent in this  
6 country two different systems for emergency  
7 communications, one dealing with immediate threats  
8 such as linking fire, police, ambulances together in a  
9 community to deal with such situations as an airline  
10 crash or a terrorist activity, and I think that's  
11 really critical to have that, but we also have  
12 emerging another type of communications networks that  
13 deal with slower emerging types of threats, but  
14 nevertheless, extremely important threats.

15           Those are systems like the Health Alert  
16 Network, the National Electronic Disease System for  
17 surveillance and the USDA's Department, their new  
18 federal emergency response network for food, looking  
19 at food poisoning and contamination, and biological  
20 hazards and other activities like that.

21           Those are all very important systems, they  
22 are nascent in their planning and in their operation  
23 and implementation, but also, they are operating  
24 independently of emergency communication networks.  
25 I'm not saying we operate on the same network, but I

1 believe the Committee will be looking at some of those  
2 areas where they have been developing and how they  
3 relate to the other types of emergency response  
4 networks we have.

5           So we'll be having a series of  
6 recommendations. I won't go on to all of those, but  
7 it won't be surprising looking at standards and  
8 protocols at the network system design, looking at the  
9 capabilities within the emergency response systems and  
10 programs for advanced telecommunications, inclusion,  
11 horizontal/vertical integration, electronic records  
12 and data sharing and integrating some of our other  
13 existing networks, and finally, building on the  
14 current FCC demonstration program and expanding and  
15 integrating on the emerging threat communication  
16 systems.

17           We have a draft that has just been  
18 developed, and we're underway with hopefully in the  
19 next few weeks taking a look at that and getting  
20 comments and some changes, and so hopefully we'll be  
21 able to meet the deadline that you have established.  
22 That's my report.

23           MR. BUGEL: Thank you, John. I appreciate  
24 it. I want to thank you and your Vice Chair, Dr.  
25 Kaplowitz, appreciate it, for all your help and the

1 thorough examination. Now, I'd like to turn to  
2 technology integration and Mr. Roskind.

3 MR. ROSKIND: Good morning, Mr. Bugel, Chief  
4 Poarch. First of all, I want to thank everybody for  
5 their participation on behalf of Secretary Chertoff,  
6 Deputy Undersecretary Jamison and Assistant Secretary  
7 Garcia. The work that you're all doing is greatly  
8 appreciated by Department of Homeland Security and by  
9 the country.

10 I want to point out a key relationship  
11 between Department of Homeland Security and NTIA and  
12 FCC. Within my division of Office of Emergency  
13 Communication the relationships are key and integral.  
14 NTIA is providing approximately \$1 billion in grants  
15 over the next several years to state, local, tribal,  
16 to develop operable and interoperable communication  
17 supported by policy decisions by Office of Emergency  
18 Communication in coordination with the Federal  
19 Communications Commission.

20 FCC and NTIA also are members of a newly  
21 formed Emergency Communication Preparedness Center,  
22 ECPC, that's designed to provide some of the  
23 coordination that Mr. McGinnis was referring to with  
24 respect to coordinating federal activities. The  
25 Technology Integration Working Group was created and

1 has worked through Phase 1 of the process.

2           We divided into three phases. The first  
3 phase is the collection phase, second phase is an  
4 analysis phase and a third phase of course is the  
5 report writing phase. So we have seven members of the  
6 group, and we were able to join the call along with  
7 liaisons from FCC and from the Joint Advisory  
8 Committee Chair's office.

9           Using discussion draft provided to us by the  
10 Chair, Mr. Bugel, we read through different sections  
11 and took inputs from members. We divided the input  
12 into three basic categories for consideration as  
13 technology integration. First is routine emergency  
14 communications operations from the point in which a  
15 trauma event occurs and a patient's moved into the  
16 medical care continuum.

17           The second was an event where you have a  
18 mass casualty event such as the Oklahoma City bombing,  
19 and you have disbursement of patients to multiple care  
20 facilities and the communications that would be required  
21 to support it. The third is when the trauma center  
22 itself becomes a crisis site and requires dispersion  
23 of its population and the communication technologies  
24 that might be required to support those scenarios.

25           Many Technology Integration Group members

1 indicated they had specific information to add to the  
2 discussion. We designed a portal that is now  
3 available for integrating information that's been  
4 collected by all three of the working groups.

5           The purpose of a portal is to prevent  
6 redundancy and allow common access to a single  
7 document, and provide document tracking and also  
8 provide a point where we can share information that  
9 the different working group members and working groups  
10 consider important to the outcome of the report from  
11 the Joint Advisory Committee.

12           Some members have contributed information to  
13 support Phase 1 and have reviewed technology and  
14 underlying reports that may provide insight into how  
15 communications might be needed. Documents included  
16 the *Association of Public Safety Communications*  
17 *Officials Report on Homeland Security Position*, the  
18 *Senate After Action Katrina Report*.

19           Some of the specific technologies that have  
20 been considered include gateways, intelligent  
21 transportation system, transponders, low speed mobile  
22 channels, high speed systems, paging capabilities,  
23 computer aided dispatch, record management systems and  
24 geographic information systems.

25           Phase 2, the mission will begin Monday. Our



1 next phone conference will be tomorrow for our working  
2 group. The Technology Integration Group is tasked  
3 with identifying future capabilities also. Our focus  
4 for the next conference scheduled tomorrow will be to  
5 discuss relevant technologies that appear to be  
6 working as we speak.

7           The Technology Information Group members  
8 continue to post information on the portal, and during  
9 our conference we'll go through what those  
10 technologies mean and how they might be applied to our  
11 report back to Congress.

12           Additionally, Chairman Bugel and myself had  
13 discussed some foundational issues, cross-cutting  
14 communication technologies that need to be considered,  
15 things that are universal truths in communication that  
16 might be valuable in leveraging, that enable command  
17 and coordination technologies.

18           The two fundamental issues are all events  
19 are time and location specific and core competencies  
20 and cross-cutting capabilities may be defined to  
21 provide communication pathways not just within the  
22 medical community but across other key government  
23 elements. That summarizes my report, sir.

24           MR. BUGEL: Thank you, Mr. Roskind. I want  
25 to again thank you, and the members of your working

1 group and your Vice Chair, Mr. Corry. I also want to  
2 thank you for establishing the portal.

3           For those of you who have not worked on  
4 large committees before, this is one of the best ways  
5 to manage document creation and editing and that will  
6 prove to be an invaluable asset to all the working  
7 groups. We really appreciate it.

8           I also want to just mention I think that we  
9 have improved. I look to my FCC and NTIA liaisons to  
10 confirm this, but I believe that we have now started a  
11 cycle of being inclusionary in the document exchanges  
12 so that the FCC and the NTIA are copied on a lot of  
13 the actual schedules of working groups, outlines for  
14 calls and other administrative things that the  
15 liaisons in my office are monitoring, so I want to  
16 thank you for that.

17           Going into the next stage of our agenda, we  
18 focused last time on policy thought leadership. There  
19 certainly is a lot of knowledge in that area and a lot  
20 of development going on as the working groups are  
21 discovering. This meeting, in consultation with the  
22 working group chairs, we thought that the best use of  
23 our time would now be exploring some of the program  
24 and technology leadership thoughts that are going on  
25 in this area.

1           So one of the programs that's newly minted,  
2 revised and moving forward is the FCC program, the  
3 other one is a big portion of Mr. Roskind's day job  
4 which is the Office of Emergency Communications, and  
5 we're also bringing in Cisco and Motorola to talk  
6 about technology and the evolution of the technology  
7 relative to all the things that the working groups  
8 have just touched on.

9           Laced into each one of your presentations  
10 was the migration of the requirements into the future  
11 technologies, so we felt that this would be a very  
12 important way to spend our time. So I'd like to start  
13 off with Mr. Young from the Department of Homeland  
14 Security. He's going to give us a briefing on the  
15 newly established Office of Emergency Communications'  
16 missions and programs.

17           MR. YOUNG: Thank you, Mr. Chairman. Please  
18 excuse the delay there. Thank you for the opportunity  
19 to be here to be able to address to the Committee the  
20 activities that we have ongoing with the newly  
21 established Office of Emergency Communications.

22           Although we're very new we've jumped head  
23 first into the challenges of addressing  
24 interoperability and those issues that surround the  
25 daily activities of our first responders and public

1 safety officials to ensure our nation's security and  
2 to make America a safer place.

3           First the Office of Emergency  
4 Communications. What is it? It's the new Title 18 of  
5 the Homeland Security Act established Office of  
6 Emergency Communications and has charged the Office's  
7 director with among other duties planning and  
8 overseeing the implementation, management and the new  
9 organization focused on interoperable communications.

10           Congress also has charged OEC with enhancing  
11 current interoperability DHS initiatives by  
12 integrating the delivery of services and solutions to  
13 state, and local and tribal governments and emergency  
14 responders.

15           As you can see from the slide, OEC is now  
16 administering the responsibility of three legacy  
17 programs that include the Integrative Wireless  
18 Network, the Interoperable Communications Technical  
19 Assistance Program and the SafeCom Program excluding  
20 research/development, testing and evaluation and the  
21 standard activities.

22           It is through these programs that OEC will  
23 execute its mission which is to support and promote  
24 the ability of emergency response providers,  
25 government officials, to continue to communicate in

1 the event of natural disasters, acts of terrorism or  
2 other manmade disasters to ensure, accelerate and  
3 attain interoperable emergency communications  
4 nationwide.

5           As you can see from this slide, OEC has a  
6 significant list of responsibilities. While they are  
7 all equally important I wanted to highlight some of  
8 which are of interest to you in your role as members  
9 and staff of state legislators. One, establish  
10 capabilities supporting seamless interoperable  
11 communications across government at all levels.

12           Command and control during a major or minor  
13 incident starts with those that are first on the  
14 scene. The ability to communicate to all levels of  
15 response is vital. It would keep the homeland more  
16 secure and save lives. Number two, to conduct  
17 outreach, state and local, tribal governments is the  
18 involvement of the constituencies such as the National  
19 Conference of State Legislators is vital.

20           You're on the forefront to the resources and  
21 the needs of the nation's emergency responders. You  
22 are the direct contacts, the eyes and the ears.  
23 Providing technical assistance in the use of  
24 interoperable emergency communications.

25           These resources of the federal government

1 are being used to provide guidance and to educate our  
2 state, local and tribal entities to promote standard  
3 operating procedures, best practices and tools for  
4 incident response, interoperable emergency  
5 communications capabilities.

6           The development of free guidance and tools  
7 is critical to the success of emergency responders.  
8 Some of these examples are memorandums of  
9 understanding. In addition to this, standard  
10 operating procedures. As noticed under a secretary  
11 directive to provide or to develop score cards for all  
12 75 urban areas it was identified that governance was  
13 the most significant challenge facing our nation  
14 today.

15           We've heard lots of talk as to we need more  
16 money, but we are addressing interoperability with  
17 making stronger governance structures. That is the  
18 route right now from which we're working on. As we  
19 continue to work we know that it's important to  
20 include our DHS partners and all federal partners.  
21 Legislation not only mandates OEC action on  
22 interoperability, it also requires us with other  
23 federal agencies to achieve this mission.

24           OEC also works with industry and  
25 nongovernmental agencies to assure that we're

1 communicating with the right people to achieve this  
2 mission. Now, what I'd like to do is shift the focus  
3 to some of the key initiatives that OEC has undertaken  
4 at this time.

5           The status in the development of statewide  
6 communications interoperability planning, now commonly  
7 known as the SCIPs. OEC is effectively working and  
8 providing technical assistance to the Public Safety  
9 Interoperability Communications Grant Program some of  
10 you know also as the Commerce \$1 billion grant  
11 program.

12           OEC's Technical Assistance Program is  
13 providing workshops to assist the states in developing  
14 their investment justifications as they prepare to  
15 submit these justifications with their SCIP plans on  
16 December 3, 2007. In addition to the PSIC grant  
17 program, we're also providing workshops to assist the  
18 states with their statewide communications  
19 interoperability plans.

20           We've set up workshops in these efforts as  
21 well. In addition to these workshops, we're also  
22 providing technical assistance to assist these states  
23 with their SCIP final plans. The first stage of this  
24 has been in the submittal of the preliminary statewide  
25 communications plans. We've had 42 out of 50 states

1 and territories to submit these plans.

2           What OEC has done as part of a peer-review  
3 evaluation of these plans is to identify the gaps on  
4 the preliminary levels so as these states address  
5 their planning and their strategic plans move forward  
6 to this December 3 deadline that they will know the  
7 gaps that we have identified in these preliminary  
8 plans to ensure that they meet the approval status  
9 with this final planning.

10           Also, I would definitely like to express the  
11 other importance of the SCIPs. What it also does is a  
12 locally driven process. It's multijurisdictional, and  
13 it's multidiscipline. What this does, it ensures that  
14 the cultural barriers that were there before in the  
15 past come down because these plans drive  
16 communications at all levels with all disciplines.

17           It is important that once these barriers are  
18 down that we continue with our effective strategic  
19 planning at all levels to ensure that these plans  
20 drive what our overall goal is, and that is to achieve  
21 interoperability at all levels. Excuse me here. It  
22 seems that I've lost my thought and place, so excuse  
23 me.

24           Okay. In addition to the SCIPs another  
25 initiative that we're following up with is a national



1 communications baseline assessment. Legislation has  
2 established that OEC requires that we conduct a  
3 national communications baseline assessment. This  
4 baseline assessment will define a range of  
5 capabilities for natural disasters, acts of terrorism  
6 and other manmade disasters for first responders and  
7 relevant government entities.

8           In addition, it would assess current  
9 interoperable capabilities, identify scenes, gaps and  
10 other obstacles. In addition, it would establish a  
11 national emergency communications inventory including  
12 federal communications information. This national  
13 communications baseline assessment would be done in  
14 two phases.

15           Phase 1 will leverage the existing  
16 assessments, surveys, tactical interoperable  
17 communications plans, the score cards and interviews  
18 with federal and local public safety stakeholders.  
19 Phase 2 will be a far reaching deeper approach.

20           It will research into the federal and local  
21 agencies' information data collected from the Bureau  
22 of Indian Affairs, the Federal Communications  
23 Commission, the National Native American Law  
24 Enforcement Association and other tribal  
25 representatives. This includes the nongovernmental

1 organizations such as the American Red Cross, local  
2 carriers and special services.

3           The national communications baseline will  
4 also ensure and it also recommends that the nation  
5 accelerate interoperable communication investments and  
6 training to ensure the ability to communicate not only  
7 in disasters but in the more typical communications of  
8 the day-to-day working environment.

9           OEC will then use these findings and  
10 recommendations from the national communications  
11 baseline in addition to top the SCIPs and develop a  
12 national emergency communications plan. The national  
13 emergency communications plan. OEC is required by  
14 Congress to develop a national emergency  
15 communications plan. The NECP will deliver to  
16 Congress in July 2008.

17           This plan would provide recommendations to  
18 support and promote the abilities of practitioners and  
19 relevant government officials to continue to  
20 communicate in any event. It also would provide a  
21 plan to ensure, accelerate and attain interoperable  
22 communications nationwide.

23           As we look at the national emergency  
24 communications plan we look at it as setting the  
25 agenda for the future. When completed this national

1 plan would direct OEC through the delivery of  
2 milestones and requirements for the nation set forth  
3 in the plan in order to fill its Title 18 agenda as  
4 being called out in the Homeland Security Act.

5           Specifically it would set guidelines for  
6 future grant programs and awards including  
7 evaluations, be a document to which progress is  
8 measured for state and federal interoperability  
9 initiatives including the regional emergency  
10 communications coordination assessments and the  
11 emergency communications preparedness center, as you  
12 heard mentioned earlier.

13           Speaking on the emergency communications  
14 preparedness center, I would like to expand on it a  
15 little bit. It is an interdepartmental organization  
16 to assess and to coordinate federal emergency  
17 communications operability and interoperability  
18 assurance efforts.

19           It would set guidelines. As an  
20 interdepartmental organization it will assess and  
21 coordinate the federal emergency communications  
22 operability and interoperability assurance efforts.  
23 I'd like to confirm that and reaffirm that. Okay.

24           The ECPC's responsibilities will serve as a  
25 focal point for interagency efforts to advance

1 operability and interoperability being the  
2 clearinghouse for relevant intergovernmental  
3 information, coordinate the federal aspects of the  
4 national emergency communications plan. A deliverable  
5 of the ECPC to Congress is to prepare and submit an  
6 annual strategic assessment regarding federal  
7 coordinated efforts.

8           As I conclude my talk I would like to also  
9 have these closing remarks. The challenge of  
10 achieving interoperability and assuring the ability to  
11 communicate in disasters requires a partnership among  
12 emergency responders at the state, local and federal  
13 levels. Industry leaders and government officials are  
14 included.

15           I recognize the unique challenges and  
16 barriers you face every day with funding, coordination  
17 and other things that come into play. OEC intends to  
18 carry out its responsibilities in collaboration with  
19 the federal partners, the emergency response community  
20 at large and the private industry.

21           As OEC grows and expands our grant programs,  
22 our guidance documents, technical assistance and other  
23 initiatives, we pledge to always be mindful of our  
24 stakeholders' needs. I look forward to working with  
25 all of you in this mission because we know it's very

1 important to the nation's security and safe being.

2 Thank you. I'll take questions now.

3 MR. BUGEL: Mr. Young, thank you very much.

4 We really appreciate it. As a newly established

5 office I want to compliment and congratulate Mr.

6 Roskind and your team of taking this literally from on

7 the paper on a plan to a functional organization with

8 a very aggressive and meaningful charter.

9 I do have one question, and I don't mean to

10 put a member of our Committee on the spot, but I'd

11 like to just kind of ask a question and refer to

12 Colonel Ebberts and his efforts down in New Orleans

13 because one of the advantages of being Chair of the

14 Committee, I've had the opportunity to speak to each

15 of you several times individually, and speaking of

16 taking things from just a cold start and recreating,

17 are you guys talking to each other in terms of the

18 barriers you've been able to break down, were

19 necessitated to break down and what their mission is?

20 MR. EBBERTS: We've been talking on a

21 constant basis obviously up through the state agencies

22 with DHS, and also, the other, FCC, on a constant

23 basis because of the complexities of the system that

24 we've created and a shared system that has all sorts

25 of other ramifications of utilizations of frequencies,

1 and who owns them and those type of issues as we build  
2 out our new system.

3           Everything that we've talked about in the  
4 first three reports as well as the most recent that  
5 Keith has talked about are very, very relevant to what  
6 we're doing on a day-to-day basis, going back to  
7 creating the requirement of who really needs to talk  
8 to who and when is the basis that we try to start  
9 with.

10           It gets very, very, very deep and to the  
11 personal and political boundaries that all of us face  
12 when we're trying to talk about communicating across  
13 political boundaries, creating systems across  
14 political boundaries, funding across political  
15 boundaries, contracting across political boundaries,  
16 all come back to the statement that without the  
17 governance foundation you can't do any of the above.

18           So you have to get that baseline, which the  
19 federal government helped us in the aftermath of the  
20 storm in sort of creating the need to get everybody to  
21 the table.

22           So I believe that the process of including  
23 the needs of the people at the lowest end of the  
24 spectrum who are the ones who are going to suffer the  
25 greatest under duress is very, very important in our

1 process of what we go back to Congress with because it  
2 is the hospitals, EMS and medical community to  
3 include.

4           As we heard this morning, we have many, many  
5 difficult stories to tell about the nursing homes in  
6 southeast Louisiana. So all of the above are very,  
7 very important. So I think that DHS carries with it  
8 and the federal government carries with it, the FCC  
9 and also the Justice Department through the COPs  
10 funding, the muscle to bring political entities  
11 together, and that muscle is money.

12           So putting the requirements of governance,  
13 as DHS has done, as a foundation before you can have  
14 any funding I think is -- you have to have those  
15 agreements in place before you get the first dollar  
16 distributed down to the lowest levels. So I think  
17 that we're working diligently with both our state  
18 agencies and DHS on a constant basis.

19           We're a little bit unique because we're  
20 camped out with FEMA in our backyard, so we've had to  
21 work through and have had their support, too, in any  
22 area of communications as we rebuild both our  
23 infrastructure as well as our capacity. I think we've  
24 been pleased with the support that we've had from all  
25 the agencies.

1           Our difficult one, again, is writing the  
2 procedures, dealing with the people. Technology is  
3 there, but if you don't have the people, and don't  
4 have the governance and don't have the required  
5 tactical interoperability communications plan none of  
6 this is going to work.

7           So I think that with the guidance and with  
8 the force of the federal government those of us at the  
9 bottom have to comply with those directives, otherwise  
10 we will not be able to build out these systems.

11           MR. BUGEL: Thank you. I appreciate that.  
12 It's been very enlightening and both very encouraging  
13 to see what you've been able to do in New Orleans and  
14 just how you've actually taken the concept of  
15 establishing those governments with the help of the  
16 federal government and putting them into place to come  
17 up with a tactically operating system. Appreciate it.

18           Mr. Roskind, I appreciate your efforts. Any  
19 other questions from Committee members on the phone?

20           MR. MOYEN: Yes. Hi, this is Dale Moyen of  
21 Hawaii Pacific Health in Honolulu. This is a question  
22 for both Mr. Bugel and Mr. Young. Will the output of  
23 this Joint Advisory Committee be tied in as input to  
24 the national emergency communications plan you  
25 mentioned?



1 MR. YOUNG: You want to go first?

2 MR. BUGEL: You go ahead.

3 MR. YOUNG: Are you referring to the ECPC?

4 MR. MOYEN: Yes.

5 MR. YOUNG: Yes. The information that this  
6 group will receive as it collects its information it  
7 will be part of the national emergency communications  
8 plan.

9 MR. MOYEN: That's fine. Thank you.

10 MR. BUGEL: Okay. I will defer to Mr.  
11 Roskind. My jurisdiction is with the Committee  
12 itself, and Mr. Roskind's jurisdiction is within the  
13 Committee and also in the Office of Emergency  
14 Communications.

15 MR. ROSKIND: Just a couple of quick things.  
16 First of all, I want to thank Keith Young who is a  
17 division head for me, multijurisdictional services, on  
18 running a huge number of people in the field  
19 supporting outreach. About 80 engineers that report  
20 to him work all around the country providing technical  
21 support through IC Tech Program.

22 What I wanted to comment on is the national  
23 emergency communication plan is to develop a plan that  
24 incorporates both voice and data and video. Now, it's  
25 fairly well-known that voice is a primary method of

1 communication for emergency services. Data, and data  
2 sharing and data strategies not just data transport is  
3 something that is an underlying cross-cutting issue  
4 across medical, fire, police, public utilities.

5           Developing a data strategy, how the data  
6 moves, what the format is, what the architecture of  
7 the data is, what data, is something that I think is a  
8 soft spot for the United States on changing the  
9 paradigm of how we engage in emergency communication.

10           You heard Mr. McGinnis hit on this  
11 repeatedly, you heard Colonel Ebberts talk about  
12 elements associated with trying to cross boundaries.  
13 That's the purpose of the national emergency  
14 communication plan is devise a strategy. The reason I  
15 wanted to sit on this and asked to actually sit on  
16 this Committee was health care and emergency medical  
17 facilities are critical to the continuum.

18           It's not just a police issue, it's not just  
19 a fire issue and it's not even just a health issue.  
20 It also crosses public utilities and then it also  
21 crosses the ability of government to communicate.  
22 When I was a city councilman trying to work through  
23 the disaster we had last year where we had a power  
24 outage for six days and we had people dispersed,  
25 communications has to be across all elements.

1           We need to find foundations and look at how  
2 we're going to develop a strategy, to deploy it, to  
3 sustain the funding behind it which is another part of  
4 the continuum that hasn't been really hit on. So  
5 thank you very much.

6           MR. BUGEL: Thank you. Dr. Kaplowitz?

7           MS. KAPLOWITZ: I have a question about the  
8 state plans. If I understand correctly, there's going  
9 to be a requirement that states have a plan to submit  
10 to you. Is that correct?

11          MR. YOUNG: That's correct. December 3,  
12 2007, is the submittal date.

13          MS. KAPLOWITZ: How are the states required  
14 to include health care in this?

15          MR. YOUNG: Within this one of the  
16 requirements is that they include all  
17 multijurisdiction, multiply disciplined. That should  
18 include all vital components of their tactical  
19 response. If health and medical is a part of that  
20 response it definitely needs to be included in that.

21           In addition, we're also asking not only  
22 medical but the public schools, the transit area, all  
23 these entities that's vital to any type of tactical  
24 response or any strategic response in general be  
25 included in that planning. So it is strongly

1 recommended.

2 MS. KAPLOWITZ: Okay.

3 MR. ROSKIND: Can I answer this, too? In  
4 the Appropriations Act, which is held up under a  
5 continuing resolution, there's a requirement in future  
6 interoperable emergency communication grants, a new  
7 program under the appropriations bill that's being  
8 held up, to have the state communications  
9 interoperability plans align with the national  
10 emergency communication plan in order to be eligible  
11 for those interoperable grant funds.

12 Part of what I'm trying to do here is ensure  
13 that the medical portion of that in health care is  
14 incorporated into our national emergency communication  
15 plan, and that's the strategy.

16 MS. KAPLOWITZ: So by being incorporated  
17 into the national plan it is incorporated into the  
18 state plan?

19 MR. ROSKIND: I think that's the process  
20 that we envision.

21 MS. KAPLOWITZ: Well, that's nice to know  
22 because I can push from the state end of things.

23 MR. ADAMS: I have a question.

24 MR. BUGEL: Yes, Mr. Adams?

25 MR. ADAMS: Yes. My question is is there a

1 department designed by each state to address this  
2 issue because there are states now that I know of  
3 personally that don't even know this exists.

4 MR. YOUNG: That's a very good point.  
5 That's one of the challenges that we've found with the  
6 states is that oftentimes there are not resources to  
7 designate an agency or the personnel to take this on  
8 as a full-time position. Oftentimes it's something  
9 that's been delegated on a part-time level, and that's  
10 been a struggle that we've found for states.

11 We recommend that any type of communications  
12 planning be undertaken. As a matter of fact, relative  
13 to the SCIP we've asked that there be a designated  
14 communications leader, a person that's responsible for  
15 pulling together these entities to make sure that  
16 they're included as part of this plan, it's been  
17 recommended, and as part of our guidance.

18 Has that been done? We don't know, but we  
19 strongly recommend that states identify whether it's a  
20 vocal agency or a lead person to take ownership of any  
21 type of planning that we put out as guidance and lead  
22 that. So that has been a challenge.

23 MR. ADAMS: Well, in my experience if you  
24 don't have, like you said, a director at the state  
25 level to direct these challenges, I mean, these

1 energies, it's not going to happen. I mean, you're  
2 going to have pitfalls. I mean, it just won't get  
3 done. It's going to be critical to us as far as what  
4 we're trying to address to have someone there as a  
5 vocal point to get this done.

6 MR. YOUNG: I agree. I agree. That has  
7 been part of our recommendation, and it has been  
8 included in our guidance that we've put out relative  
9 to DHS in our operable communications guidance.

10 MR. ADAMS: Okay.

11 MR. YOUNG: Thanks.

12 MR. BUGEL: Any other questions?

13 (No response.)

14 MR. BUGEL: Again, thank you very much.  
15 Appreciate it.

16 MR. YOUNG: Thank you.

17 MR. BUGEL: I'd like now to move on to the  
18 FCC's Rural Health Care Pilot Program and Mr. Jake  
19 Jennings of the Federal Communications Commission.

20 MR. JENNINGS: Thank you, and good morning.  
21 See a few familiar faces in here. I'd like to  
22 recognize some leaders in the health care field  
23 dealing with telemedicine, telehealth issues. Dr.  
24 Nesbitt I see from UC Davis, Jonathan Linkous from the  
25 American Telemedicine Association, and Dr. Ackerman

1 from the National Institutes of Health. It's nice to  
2 see some familiar faces here.

3 I also want to thank the Committee for all  
4 the hard work that has been done thus far and the hard  
5 work that is upcoming. I know you've got tight  
6 deadlines, and look forward to the reports that come  
7 out of the Committee. What I'd like to talk about  
8 today is the Commission's recently announced Rural  
9 Health Care Pilot Program.

10 Broadband deployment is the Chairman's and  
11 the Commission's top priority. Broadband technology  
12 is the key driver of economic growth, and relevant for  
13 today's discussion, the key driver for improving the  
14 quality of health care and reducing the cost of health  
15 care delivery.

16 Over the past two years the Commission has  
17 taken a number of actions to stimulate and encourage  
18 the deployment of broadband facilities. Most  
19 recently, on November 19, 2007, the Commission  
20 released an order dedicating more than \$400 million  
21 over three years to the construction of broadband  
22 networks for statewide and regional health care  
23 networks in 42 states, three U.S. territories, all  
24 connected to a national backbone provider.

25 The networks will connect over 6,000 health

1 care providers across the country including hospitals,  
2 clinics, public health agencies, universities,  
3 research facilities, behavioral health sites,  
4 community health centers and others. All of the  
5 networks will construct innovative and highly  
6 efficient regional broadband networks either by  
7 building new, comprehensive networks or upgrading  
8 existing ones.

9 All of these networks will be able to  
10 connect to the public Internet as well as to one of  
11 the nation's dedicated Internet backbones, either  
12 Internet2 or National Lambda Rail. As a background,  
13 the Commission has provided support to public and not  
14 for profit health care providers under Section 254 of  
15 the 1996 Communications Act.

16 Section 254(h) requires the FCC to ensure  
17 that rural health care providers pay no more than  
18 their urban counterparts for their telecommunications  
19 needs in the provision of health care services. In  
20 1997, the Commission implemented this statutory  
21 directive by adopting the current rural health care  
22 support mechanism funded by monies collected through  
23 the Universal Service Fund.

24 The Commission also adopted mechanisms to  
25 provide for support for limited toll-free access to



1 Internet service providers. Finally, the Commission  
2 adopted an annual cap of \$400 million for Universal  
3 Service support for rural health care providers. The  
4 current Rural Health Care Program is administered by  
5 the Universal Services Administrative Corporation or  
6 USAC.

7 Over time, the Commission has made a number  
8 of modifications to the existing support mechanism.  
9 Despite these modifications, however, the program has  
10 yet to fully achieve the benefits intended by the  
11 statute and the Commission. Notably, although \$400  
12 million per year has been authorized for funding this  
13 program since the program's inception in 1998 the  
14 program generally has disbursed less than 10 percent  
15 of the authorized funds each year.

16 Although there are a number of technical  
17 factors that may explain the underutilization of this  
18 important program it has become apparent that despite  
19 prior Commission efforts health care providers  
20 continue to lack access to the broadband facilities  
21 needed to support the types of advanced telehealth  
22 applications, like telemedicine, that are so vital to  
23 bringing medical expertise and the advantages of  
24 modern health care technology to rural areas of the  
25 country.

1           In April 2004 the President issued an  
2 Executive Order to provide leadership for the  
3 development and nationwide implementation of an  
4 interoperable health information technology  
5 infrastructure to improve the quality and efficiency  
6 of health care.

7           A key goal of the Executive Order is to help  
8 Americans obtain access to secure electronic medical  
9 records. Electronic medical records will improve the  
10 health care treatment Americans receive by certain  
11 things as ensuring that appropriate medical  
12 information is available, reducing medical errors,  
13 reducing health care costs, improving the coordination  
14 among health care providers.

15           In order to receive the benefits of  
16 electronic health care records health care providers  
17 must have access to the underlying broadband  
18 infrastructure. Without this underlying  
19 infrastructure efforts to implement electronic health  
20 care records cannot succeed.

21           Last year the Commission took action to  
22 address the lack of broadband for health care  
23 providers and to work to establish a true nationwide  
24 health information network. On September 26, 2006,  
25 the Commission launched the World Health Care Pilot

1 Program under Section 254(h) (2) (A) which states that  
2 the FCC shall establish competitively neutral rules to  
3 enhance access to advance telecommunications and  
4 information services for health care providers.

5           The pilot program provides funding for up to  
6 85 percent of an applicant's cost of deploying a  
7 dedicated broadband network connecting health care  
8 providers in rural and/or urban areas within a state  
9 or region.

10           It also provides funding for up to 85  
11 percent of an applicant's costs of connecting the  
12 state or regional networks to Internet2 or National  
13 Lambda Rail, which are both dedicated nationwide  
14 backbones, as well as the public Internet. The pilot  
15 program is structured to encourage applicants to  
16 aggregate the needs of health care providers in both  
17 rural and urban areas and select the most efficient  
18 technology based upon their network needs.

19           For example, the pilot program encourages  
20 multiple health care providers in a state or region to  
21 join together and aggregate their demand, provides  
22 flexibility in network design to meet the specific  
23 needs of health care providers, encourages the  
24 creation of self-sustaining networks, encourages  
25 broadband connections for rural health care providers.

1           The Commission received an overwhelming  
2 response. Eighty-one regional and state health  
3 networks across the country submitted applications.  
4 The Commission selected 69 projects for funding.

5           The types of funded projects include large  
6 scale networks connecting hundreds of facilities over  
7 a multistate region, small scale networks providing a  
8 critical advanced broadband link for several regional  
9 hospitals or clinics, connections to insular areas in  
10 isolated regions such as Indian reservations where  
11 transportation costs are high and health care  
12 specialists are concentrated in distant urban areas,  
13 networks in states with severe shortage of health care  
14 professionals enabling health care and mental health  
15 care providers to treat patients hundreds of miles  
16 away.

17           Over these networks applicants will provide  
18 telehealth and telemedicine services that support  
19 clinical care, consumer and professional health  
20 education, public health, health administration,  
21 research and of course electronic health care records.  
22 The organizations participating in the pilot program  
23 will also use the resources consistent with the health  
24 IT initiatives being promoted by the Health and Human  
25 Services.

1           Participants are required to coordinate with  
2 HHS and CDC during public health emergencies such as  
3 pandemics or bioterrorism events. They shall also use  
4 the funding in ways to ensure that their funded  
5 projects are consistent with HHS's health IT  
6 initiatives in several areas.

7           For example, the participants shall use  
8 their health IT systems in products that meet  
9 interoperable standards recognized by HHS, use health  
10 IT products certified by the Certification Commission  
11 for Health Care Information Technology, and support  
12 the National Health Information Network architecture  
13 and coordinate with HHS.

14           By providing public health officials with  
15 access to these telehealth networks they will be able  
16 to share critical time sensitive information including  
17 risk management guidance with first responders and all  
18 health care providers when responding to public health  
19 emergencies.

20           This will improve the government's ability  
21 to provide a comprehensive and cohesive response to a  
22 public health crisis in coordination with the nation's  
23 health care system and public health care community.  
24 In the order the Commission addressed several  
25 implementation issues in order to ensure the success

1 of the pilot program.

2           The program will utilize the existing USAC  
3 reimbursement process including the competitive  
4 bidding requirements as a safeguard against waste,  
5 fraud and abuse, streamlined Form 465, which will  
6 identify the locations and broadband capacity  
7 requirements to initiate the process, the form for  
8 selecting a vendor, as well as the form for  
9 reimbursement of the costs.

10           Within 30 days of the effective date of the  
11 order USAC is required to conduct an initial  
12 coordination meeting with selected participants. USAC  
13 will also conduct a targeted outreach program to  
14 educate and inform the participants of the  
15 administrative process including the various filing  
16 requirements and deadlines.

17           I'd like to note that the award amount acts  
18 as a cap. Participants will be permitted to add  
19 locations as well as increase capacity provided that  
20 the additional entities are eligible under the  
21 definition of health care providers and the cap does  
22 not exceed it.

23           The program covers nonrecurring and  
24 reoccurring costs of broadband facilities along with  
25 network design studies. The Commission also in the

1 order identified examples of ineligible costs such as  
2 the software for electronic medical records management  
3 and expenses. The Commission also required  
4 participants to cover 15 percent of the cost of the  
5 pilot, and the order specifies the eligible network  
6 costs that may be funded by the source.

7 In conclusion, a key goal of the pilot  
8 program is to lay the foundation for the development  
9 of a digitally connected health system and implement  
10 the Chairman's vision that every health care facility  
11 in the nation is connected to each other with  
12 broadband providing the medical expertise and  
13 specialty care to all Americans and ensuring that  
14 people living in rural areas will have expanded access  
15 to health care. Thank you.

16 MR. BUGEL: Thank you very much, Mr.  
17 Jennings. Again, we appreciate you taking the time to  
18 come and address the Committee, as has been recognized  
19 several times this morning. This is very germane to  
20 our mission. Any questions from the bridge?

21 Colonel Ebberts?

22 MR. EBBERTS: Is there a system or a process  
23 where this is integrated with the other programs  
24 through DHS and Justice? I've got a new 700, 800  
25 system in six parishes and 47 agencies that has

1 endless capacity, but we're still held up by the lack  
2 of the broadband capability in our new system. We  
3 have the infrastructure.

4           So what I'm concerned with, are we going to  
5 respend money on infrastructure that's already in  
6 existence that could be used when adding it to a  
7 system that the federal government principally has  
8 subsidized throughout southeast Louisiana? I don't  
9 know how that integration takes place.

10           Nobody has talked to us about this. We are  
11 concerned about the hospitals and this but probably  
12 more than anybody because the lack of our medical  
13 capacity, and we know that we're going to have to move  
14 people multiple times in the future, and this really  
15 becomes a concern.

16           I have a concern that we've built towers,  
17 repeaters, millions of dollars, created a system that  
18 nobody owns so that we can bring anybody else into it  
19 that we want that I don't want to see the health care  
20 community go over and be building towers and repeaters  
21 rather than coming onboard a system and infrastructure  
22 that's there. So I don't know how we integrate that.

23           MR. JENNINGS: Thank you for your question.  
24 I think the focus is that the pilot program connects  
25 rural health care providers and the urban health care



1 providers to each other. The process that we're going  
2 to go through is the existing competitive bidding  
3 process that USAC administers, so there's no  
4 limitation on either the technology, whether it's  
5 fiber, or 700, or 800 megahertz.

6           The key is what is the capacity requirements  
7 of those health care providers, and how do they need  
8 to design their networks to connect to each other? We  
9 would then go through the competitive bidding process.  
10 There is no limitation on who may bid for those links,  
11 so in that situation if you have existing capacity  
12 available then that would be part of that competitive  
13 bid process.

14           I would expect that the cost would be quite  
15 low when you make that bid. Then the applicants, the  
16 69 participants, will have to justify, you know, who  
17 have they selected and what is the basis for the  
18 selection for the broadband facilities, again, whether  
19 that is fixed line or wireless services.

20           We are coordinating with HHS through their  
21 health information network, and I'm sure that other  
22 government agencies will be part of that as we go  
23 forward. Our purpose here is to raise this issue with  
24 the Committee so that you, also, are aware of the  
25 pilot program and can participate in it.

1 MR. EBBERTS: Thank you.

2 MR. BUGEL: Mr. Delahousey?

3 MR. DELAHOUSEY: Yes. I'm not sure if this  
4 question goes to Mr. Jennings or perhaps some of the  
5 other Committee members. You mentioned in your  
6 presentation about the sharing of medical records and  
7 the bioterrorism implications. It would seem that  
8 rapid identification of and reporting of  
9 epidemiological adherent trends can be key in  
10 minimizing the impact of a bioterrorism threat or a  
11 chemical disaster.

12 There's a need for symptom surveillance as  
13 we saw post-9/11; immediately there was a concern.  
14 After Katrina there was a need to monitor, and  
15 epidemiological trends. More importantly, now we're  
16 looking at the emerging pandemic influenza threats.  
17 Certainly being able to monitor that information,  
18 transmit that information in an in-hospital setting is  
19 important.

20 I guess we're doing some of that to some  
21 extent now in this country, but it would seem that to  
22 be able to do it real time in a pre-hospital situation  
23 would be even more important. We saw that after 9/11.  
24 Are there any efforts ongoing? Are any of the three  
25 committees working on any recommendations for symptom

1 surveillance early on in a real time setting such as  
2 in a pre-hospital setting to be done nationwide?

3 MR. BUGEL: Dr. Kaplowitz?

4 MS. KAPLOWITZ: There is a great deal being  
5 done at the present time for syndromic surveillance  
6 including real time syndromic surveillance. For  
7 example, in Virginia and the National Capital Region  
8 we're using the ESSENCE system collecting data from  
9 emergency rooms, from patient firsts, some are getting  
10 data from schools, from pharmacies, that are going to  
11 health departments.

12 What we're trying to do in Virginia is as  
13 much as possible, especially planning for pandemic  
14 flu, link with existing hospital systems because we  
15 know that during a pandemic hospitals aren't going to  
16 have the personnel to put in special information, so  
17 we are working very closely with all the hospitals to  
18 link up to existing systems.

19 This is absolutely key. It's challenging  
20 because hospitals have many different systems.  
21 They're not necessarily linked to each other, let  
22 alone linked to other institutions. It's a major  
23 challenge, but I know it's being addressed by a number  
24 of entities within states and nationally.

25 I can tell you from a public health

1 perspective this is happening. We have a ways to go,  
2 but a great deal has been done to put in place  
3 syndromic surveillance. We have it from over 60  
4 institutions within the Commonwealth of Virginia, for  
5 example.

6 MR. DELAHOUSEY: My concern is, though, that  
7 in a mass care situation a lot of patients will never  
8 see the inside of a hospital. They'll be treated at  
9 the scene, or they'll be treated at shelters, or other  
10 makeshift locations, and, you know, is there a way for  
11 us to be able to monitor and communicate that in an  
12 out of hospital setting?

13 Certainly if a patient arrives at the  
14 emergency department and their symptoms are identified  
15 that's very important, but in a mass casualty  
16 situation I think there will probably be a lot of  
17 those patients that will never see a hospital.

18 MS. KAPLOWITZ: Well, I can tell you again  
19 that we're going to be working closely with EMS  
20 throughout the Commonwealth to link into their data  
21 system. They're putting a new one in place in  
22 Virginia, for example. It's much more of a challenge  
23 when you're dealing with private providers' offices  
24 because they often don't have the resources to invest  
25 in electronic systems.

1           Some have, some haven't. The reason we're  
2 focused on hospitals is in a sense that would be a  
3 good measure of what's happening in the community if  
4 systems are in place as much as possible ongoing to  
5 make sure that we've linked to whatever systems are  
6 out there.

7           As I said, ESSENCE is also linked to  
8 pharmacies, to schools. School absenteeism is going  
9 to be absolutely key, so we're trying to link to our  
10 Department of Education to get data from a number of  
11 different sources. As John mentioned already, a major  
12 challenge is getting systems to talk to each other  
13 within health care.

14           Major, major. Now, I understand some things  
15 are happening to connect systems to systems, but we  
16 clearly have a ways to go. I'm going to make sure  
17 that public health is part of that whole discussion to  
18 make sure that we have access to as much surveillance  
19 data as possible.

20           So not there yet, but we're working very  
21 closely, and you have public health and health care  
22 working very closely together to make sure this  
23 happens when the systems are actually developed.

24           MR. DAWSON: If I could just make one more  
25 comment on that?

1 MR. BUGEL: Yes, Mr. Dawson.

2 MR. DAWSON: Steve, I think you make a very  
3 important point which is the importance of emergency  
4 medical services and also 911 data systems as part of  
5 syndromic surveillance.

6 The group that was brought together through  
7 DOT and some other agencies that looked at pandemic  
8 flu, for instance, and as you know, Steve, looked at  
9 pandemic flu and provided guidelines for state  
10 Emergency Medical Services systems and for local  
11 Public Safety Answering Points providing some fairly  
12 strong recommendations about the use of both 911 and  
13 Emergency Medical Services data as integrated with  
14 public health in terms of syndromic surveillance.

15 So I think those might be something in  
16 particular as Kevin looks at the chapter on EMS and  
17 ties in 911, those may be important considerations as  
18 part of that for this group as well. I also would tie  
19 in the national EMS information system at least as a  
20 data source for syndromic surveillance.

21 MR. BUGEL: Okay. Appreciate it. Yes, Dr.  
22 Kaplowitz?

23 MS. KAPLOWITZ: I should mention, also, that  
24 we are linking up with poison control centers. There  
25 are a number of entities out there collecting data

1 that we want to have access to from a public health  
2 perspective, a major issue, but poison control centers  
3 are an important source of data as well.

4 MR. BUGEL: Okay. Dr. Nesbitt?

5 MR. NESBITT: Well, first of all, I'd like  
6 to thank Jake Jennings for his work on this and the  
7 leadership of the FCC. I think this is a really  
8 important program. Two questions and maybe  
9 recommendations.

10 Is there going to be a mechanism that the  
11 work of this Committee that there would be an  
12 information flow from this Committee to the awardees  
13 so that some of the recommendations and some of the  
14 things that we recommend in terms of  
15 telecommunications, particularly in health care, can  
16 get to the, you know, awardees of this so that they  
17 don't make some of the mistakes that we are talking  
18 about, so I think some mechanism of information from  
19 this Committee to them.

20 The second thing is a mechanism to get the  
21 awardees, the participants of this program, to  
22 communicate with each other and share best practices,  
23 and also so that they can intercommunicate so we can  
24 create networks of networks in regional areas. You  
25 know, it could be for disaster actual events, but also

1 for just disaster education and those kinds of things.

2 MR. BUGEL: To your first question,  
3 obviously our report goes directly to Congress to the  
4 committees of jurisdiction. I don't know procedurally  
5 exactly how it becomes public, but I'm sure that the  
6 work of this Committee will not be held underneath a  
7 bushel basket.

8 MR. JENNINGS: One thing I'd like to point  
9 out is the requirement that the awardees coordinate  
10 their work with HHS, and in particular the CDC. So it  
11 kind of goes to the earlier question as well as  
12 working with CDC. So they will have access to that  
13 information. You're already starting to see some  
14 working groups form on an AD HOC basis.

15 We said earlier the awardees will be  
16 participating with the USAC for the administrative  
17 purposes. I know there has been some interest from  
18 Health and Human Services, the Office of National  
19 Coordinator, to also have a debriefing with them and  
20 to kind of explain their side of the requirements and  
21 how that's going to work.

22 So I can have a natural tie in with the  
23 work of this Committee into what the Office of  
24 National Coordinator of HHS is going to be doing.

25 MR. NESBITT: Great. Thank you.



1           MR. BUGEL: I have one question. What is  
2 the time cycle of a grant traditionally?

3           MR. JENNINGS: Well, I don't know about  
4 traditionally, but this program is set up so that it  
5 is part of the existing universal service process.  
6 Similar to the rural health, we've got the existing  
7 process of a reimbursement so that the timing is the  
8 funding year essentially ends June 30 of this year.

9           So within 30 days of the effective date of  
10 the award USAC will host their debriefing for the  
11 implementation and to explain the forms and the  
12 administrative process for seeking reimbursement. It  
13 is up to the participants on how quickly they want to  
14 move on identifying their locations and capacity  
15 requirements.

16           They actually may want to increase their  
17 capacity given that it's been nine months since they  
18 filed their applications and technology costs might  
19 have driven down the broadband costs. So they will  
20 file that information, and then there is a 28 day  
21 competitive bid process that entities will be going  
22 through to bid on those locations and capacity.

23           Then, once the participants select their,  
24 you know, vendors, then they will file another form  
25 with USAC to identify those including justification

1 and then we move forward with the deployment.

2 MR. BUGEL: Thank you. Mr. Linkous?

3 MR. LINKOUS: Yes. I just wanted to say on  
4 behalf of the American Telemedicine Association I  
5 wanted to echo what Tom had to say, to thank you Jake  
6 and the Chairman. I know that these last few months  
7 have been hectic for you and you suffered through a  
8 little bit of flack, some of it from us and some of it  
9 from others, but again, I think you've come out with a  
10 gem.

11 I know there's a lot of work ahead both for  
12 you, and now if you pass it off, to the staff at USAC.  
13 They have a little bit of work ahead of them as well,  
14 but again, I think it's tremendous opportunities, and  
15 our group and I'm sure others will be working with you  
16 to help make this a success, so thank you.

17 MR. BUGEL: Thank you. Thank you very much.  
18 I'd like now to move on to our next two presenters,  
19 the first of which will be Mr. Kevin McFadden from  
20 Cisco Global Government Solutions Group, and the next,  
21 Generation IP Platforms for Emergency Medical and  
22 Public Health Communications.

23 The next two presenters are going to be  
24 talking basically about the underlying technology and  
25 the evolution of the technology that enables the

1 applications that we've been discussing both in our  
2 working groups and in the public meetings.

3 Mr. McFadden?

4 MR. MCFADDEN: Good morning, Mr. Chair, and  
5 thank you for inviting me, Committee members. The  
6 purpose of my discussion this morning will be to  
7 discuss a variety of things that we see as a company  
8 in the field in terms of being able to provide  
9 communications not only to fixed infrastructure but  
10 also to rapid response and being able to address  
11 events that are both planned as well as unplanned.

12 So I would open the opportunity for  
13 questions during my discussion, and also, questions  
14 afterwards. We're going to cover three predominant  
15 topics. Obviously IP communications and what we  
16 believe are some areas where Cisco has been very  
17 influential in these, hopefully deemed influential,  
18 requirements in terms of ease of use and integration  
19 with daily operations, so we're not talking about just  
20 the occasional use or when a situation arises that  
21 needs these technologies, we're talking about the ways  
22 in which these technologies can be used on a daily  
23 basis to enhance the existing operations and existing  
24 capabilities, and also providing investment protection  
25 so that we're not simply discarding what we currently

1 have but finding ways in which we can actually  
2 leverage the existing assets, the existing  
3 infrastructure and make them most valuable and most  
4 useful.

5           Then looking at the term interoperability  
6 used here, I liked the earlier gentleman's use of  
7 operability. In fact, we use that quite a bit.  
8 Because interoperability is perhaps misused or  
9 misunderstood what we're trying to do is develop new  
10 ways in which we can describe that process.

11           A little bit about myself and why I was  
12 asked to present to you. I have about 16 years of  
13 experience in the communications field, eight of which  
14 have been with Cisco, four very specific in this  
15 environment and looking at various ways in which are  
16 customers are needing support and capability.

17           As a matter of fact, prior to 9/11 the  
18 organization that I work for today, the Global  
19 Government Solutions Group, was established by our  
20 CEO, John Chambers, to specifically look at the  
21 requirements and the interests of government. We  
22 realized that Cisco was very good in the retail space,  
23 and commercial and other types of industries.

24           We probably overlooked some of the specific  
25 requirements that were necessary for government. So

1 as a result there are over 250 of us located worldwide  
2 to be able to look at the challenges of government,  
3 what the special needs are, how we can take our  
4 existing products, existing capabilities, and adapt  
5 them.

6           Maybe it's just through use of those  
7 products in specific ways, other situations where we  
8 actually take the product and modify it or put it  
9 through what we call our adaptation group to modify  
10 those products to meet special requirements, and  
11 others are to develop products specific to that need.

12           Other reasons that I might be speaking with  
13 you this morning and addressing you, I've been  
14 involved with quite a few of the federal entities down  
15 here in Washington, D.C., a variety of entities in the  
16 federal law enforcement, also in Treasury and the  
17 Department of Homeland Security, working with them at  
18 their senior levels to identify how they work with  
19 their fixed infrastructures, things like DHS ONEnet, I  
20 heard IWIN mentioned, very involved with that, SBInet,  
21 are several programs, again, trying to move focus  
22 outside of what we're doing in the fixed  
23 infrastructure and looking at the mission, looking at  
24 the specific challenges that are required in areas  
25 where you don't have power or you may not have

1 connectivity readily available.

2           Broadband has been discussed quite  
3 throughout this briefing this morning, significant  
4 need for how to actually get high speed connectivity  
5 to these individuals and make it most useful to them.  
6 Obviously in the health care industry and I think more  
7 health care problem as it might be stated is a unique  
8 requirement itself because of the sensitivity of the  
9 information that's being passed, the timeliness and  
10 the effectiveness of that information, and to know  
11 that information requirement may change, specifically  
12 some of the things that I saw as I was responding to  
13 events like Katrina, the gentleman not with us this  
14 morning or absent for a moment here.

15           I've had an opportunity to see some of these  
16 activities in real world, understand how they  
17 transform over time -- the events change, obviously  
18 within the first five minutes to the first 24 hours  
19 are going to be very different than what occurs after  
20 that first 24 to 48 hours -- and how the change of  
21 information requirements and change of how we respond  
22 as technologists and industry to be able to support  
23 those requirements.

24           So with that said, I think there's probably  
25 broader things that we can go through here. What I'd

1 like to first of all talk about is -- if we'll go back  
2 to the slides for a moment. There we go. Cisco,  
3 first of all, is a fairly large company of 55,000  
4 employees looking at various aspects of information  
5 technology.

6           We have had a historical background in IP  
7 based communications, obviously that's our heritage,  
8 and really a fundamental concept of how we can  
9 potentially change the way we work, live and play.

10           Those are key in this particular discussion  
11 because in all cases we're dealing with legacy  
12 technologies, legacy infrastructures, siloed  
13 infrastructures, and so we're working very hard with  
14 our constituents, our systems integrators and partners  
15 to be able to help them understand how integration and  
16 convergence can occur.

17           As an example, this slide tries to portray a  
18 holistic, almost an ecosystem of various entities  
19 coming together. Obviously there are challenges  
20 associated with this.

21           We believe that through some of the  
22 conversations you've heard earlier, the Internet, the  
23 Internet2, some of the other entities, even some  
24 private entities, to be able to start developing ways  
25 in which to integrate those together and form a common

1 place for where we can share information, obviously  
2 secure information, and be able to make that most  
3 meaningful.

4           So this is a common message that we've  
5 shared with our customers and believe is very  
6 important for quite some time. I think that one of  
7 the things that this group is very focused on, and I  
8 applaud that, is some of the grants recommendations  
9 and things that may be coming out of that.

10           We've heard this morning a little bit about  
11 PSIC grants, and we're very interested in how that  
12 focuses, obviously some of the E-911 legislation  
13 that's occurring, and we support that very heavily,  
14 and obviously taking advantage of IP based technology  
15 that was really designed to be very adaptive, very  
16 flexible, are things that we're obviously keying on  
17 and focused very heavily on.

18           One of the beliefs that we have is that as  
19 we look at these application verticals Cisco not only  
20 is looking at the underlying transport that's  
21 described here in this slide, but also the way in  
22 which those applications can be integrated. What I  
23 would focus on, actually, the term operability is a  
24 great example of that.

25           Consider a single entity, a single agency.



1 That's a challenge in itself. Some of the things that  
2 we experience -- I was actually a party to one of the  
3 recent pandemic exercises up in Oakland County,  
4 Michigan. I believe you heard some background on  
5 this. A previous presenter at one of your last  
6 meetings talked a little bit about this.

7 I was present there, and it was an  
8 opportunity for me to see how the legacy  
9 infrastructure had potentially not progressed, had not  
10 been able to take advantage of some of the things that  
11 I've been able to see on a more daily basis.

12 It's actually a little bit difficult for me  
13 because when I go to a customer environment or an  
14 environment where there's going to be an exercise or  
15 other type of specific event, those events have  
16 progressed and allowed opportunity for exposure but  
17 there are so many that have not, so it's very  
18 important that we try and share this information.

19 I think that's very important for this  
20 group. Within a single enterprise the ability to  
21 provide this cross-application of integration is going  
22 to be very important. We've seen a variety of  
23 technologies inside Cisco as well in the industry that  
24 are starting to make significant progress in this.

25 What we believe is that horizontal

1 integration can occur across these silos again by  
2 leveraging IP technologies. As you look at beyond  
3 just the single organization, IP technologies can be  
4 used very effectively to provide, again, horizontal  
5 integration and cross-organizations as well, again,  
6 leading back to the original slide that I started with  
7 in this discussion.

8           So very important. Probably stating the  
9 obvious, but I want to continue to drive that thought  
10 home. I talked about the ability for technology to be  
11 easily used in the event of an emergency or other type  
12 of activity. One of the things that you're seeing is  
13 the convergence of these capabilities, making them  
14 smaller, lighter, better efficient in terms of being  
15 able to respond.

16           This slide is maybe an example of how  
17 security, voice, video, wireless, various other types  
18 of technology, are all being reduced in size and being  
19 able to provide it, again, at a moment's notice,  
20 carried in a lightweight fashion to the environment  
21 not only in the fixed infrastructure is going to be  
22 benefiting from this, but also in the ability to  
23 deploy rapidly, so anywhere that you can actually take  
24 advantage of these technologies that were previously  
25 very heavy and difficult to carry into the

1 environment, being able to shrink those down, some of  
2 the things that we've been able to do inside Cisco  
3 have been very effective in doing that. Also, looking  
4 at mobility, again, reuse of the existing pictorial.  
5 Cisco has been quite focused on how to do this inside  
6 the corporate environment, the fixed infrastructure.

7           We've also been very focused in looking at  
8 how we extend that to the field. There are some  
9 examples here. These are real examples, examples of  
10 where we're actually taking effective means to be able  
11 to modify, examples that I've been specifically  
12 involved in, Florida Highway Patrol, some of the folks  
13 in various counties within Florida.

14           Obviously Michigan got an opportunity here  
15 recently to be able to see how they could change their  
16 way in which they had responded to the pandemic event.  
17 Maybe a sidebar for a moment. It was very interesting  
18 to watch the Incident Commander, George Miller,  
19 communicate with his various entities in the field.

20           He had seven incident site commanders that  
21 were responsible for administering -- yes? There was  
22 a question?

23           MR. ROSKIND: Yes. Just a question on this  
24 slide. So this is a multiple pathway router that  
25 you're talking about. You have one router in the

1 trunk of a vehicle, you have multiple transport  
2 mechanisms coming in and the router automatically  
3 shifts from one to the other to keep the client  
4 connected. Is that correct?

5 MR. MCFADDEN: Established, yes. In fact,  
6 if I could expand on that for a moment. That's a  
7 concept that is considered mobile IP or sometimes  
8 generally referred to as mobile IP, the ability for  
9 that device, again, on the right-hand side, the remote  
10 of this slide, to remain connected. Those connections  
11 could be wired or wireless connections.

12 The importance there is the fact that I  
13 don't have to change my applications or change my  
14 persona every time I move from connectivity to  
15 connectivity.

16 Obviously we've proved this in a variety of  
17 different environments, Department of Defense, ships  
18 being able to be docked in a port obviously  
19 communicating and having a meaningful relationship  
20 back with the larger enterprise as the ship moves out  
21 and into the harbor or into the near sea has similar  
22 capabilities, and then as they move into deep water,  
23 have the ability to continue to communicate.

24 These are all technologies that are being  
25 used in various environments, perhaps not been

1 leveraged as meaningful in your environment.

2           MR. ROSKIND: Right. These overcome two  
3 huge technical challenges that I saw, one when I was a  
4 Deputy Sheriff deploying computers into Snohomish  
5 County, which was a huge county. Take you an hour to  
6 drive from one side to the other, population about  
7 600,000.

8           It had terrain features which included in  
9 large portion a national park that were difficult.  
10 What it does is it would allow you multiple pathways  
11 to get at the vehicle to maintain connectivity in the  
12 mobile unit. The other thing is one of the objectives  
13 of the President is to develop not only interoperable  
14 communications but resilient communications.

15           When I was flying Prowlers trying to defeat  
16 communication systems what it does is it prevents one  
17 pathway from going down and then losing connectivity  
18 to your unit, so it makes it very resilient. So this  
19 is actually an enabling technology that really is an  
20 enabling technology within emergency services to  
21 provide assured connectivity to your mobile client,  
22 which is the heart of the emergency communications  
23 problem.

24           MR. MCFADDEN: Agreed. As a matter of fact,  
25 there's one other aspect of what you described there

1 in terms of the ability to maintain connectivity but  
2 also be able to recover from what we might call  
3 episodic connectivity, the ability to route in and out  
4 of connectivity, maybe it's because you've gone into  
5 an area that there is no coverage or no ability to  
6 have communications, and so those applications need to  
7 be potentially modified, the network infrastructure  
8 needs to be taking advantage of the fact that there  
9 are intermittencies in that connectivity and we don't  
10 have to burden the end user with having to re-login or  
11 re-provide credentials or other type of things, and at  
12 the same time we don't create an open hole for someone  
13 who might be unauthorized to be able to gain access  
14 through those holes.

15           So those are all part of this. Again, what  
16 we're seeing is a real application of a lot of these  
17 technologies, you've heard some of it here. These are  
18 really then real activities that we're able to point  
19 to and provide examples for. In fact, you mentioned  
20 from the State of Virginia that there were some  
21 examples of ways in which you were starting to provide  
22 linkage between your various information systems.

23           Those are outstanding. I guess my point  
24 would be and what my experience has been is that not a  
25 lot of that information has been brought forth and

1 documented properly, shared with other agencies.  
2 Maybe you're doing a good job there. I would stress  
3 the need for awareness and being able to bring those  
4 together as best practices. That's the challenge that  
5 we're having even inside our organization. Yes, sir?

6 MR. ROSKIND: I know there's a lot of talk  
7 now about video in mobile, you know, in moving  
8 ambulances and those kinds of things. How stable can  
9 you get high frame rate video with broadband in that  
10 kind of situation?

11 MR. MCFADDEN: Well, broadband is really  
12 going to be -- in this particular setting 3G wireless  
13 is probably one of the better high performance data  
14 mechanisms, but you're only going to be seeing  
15 anywhere between 100K to 500K, and there is not going  
16 to be a high quality of service across those  
17 infrastructures.

18 So what I would suggest is that the  
19 technologies that are driving those video applications  
20 would have to be very sensitive to that. I would  
21 suggest to you today that those are not generally  
22 sensitive. In fact, the result of the underlying  
23 technology issue is a phenomenon called jitter, the  
24 fact that I'm getting these large clumps of data being  
25 delivered in an unpredictable time fashion.

1           So what is required to put the system back  
2 together or the communication stream back together is  
3 the buffering of that information. Buffering  
4 generally leads to latency and delay. So there may  
5 also be human factors, even governance, that is  
6 necessary to be able to understand those latencies and  
7 maybe some education process.

8           The technologies are here today to try and  
9 deliver some of that, but again, the latency and the  
10 jitter are going to be driving some of those issues to  
11 a question of usability. So interesting things coming  
12 along in some of the 700 megahertz discussions and  
13 broadband discussions that may help to solve some of  
14 those things, but today, again, I think we're in an  
15 experimental phase, definitely useable, but probably  
16 not something that you would want to say is real time.

17           MR. ROSKIND: Right. Okay. Thank you.

18           MR. BUGEL: Let me just also remind the  
19 Committee members that when you do ask a question if  
20 you could identify yourself since it is being recorded  
21 and we are being viewed out across the World Wide Web.

22           MR. BASHFORD: Hi. This is Curt Bashford.  
23 On that application of the needed bandwidth, there are  
24 examples out there that you probably want to take a  
25 look at. The speaker is correct, the 3G you're going



1 to have that lower bandwidth. A lot of it comes down  
2 to expectations of the actual user.

3           When we offer video to a user the  
4 expectation today is TV quality, and those  
5 applications, you know, may not really require TV  
6 quality. That just happens to be what the perception  
7 is. When you ask them if you have a choice between a  
8 slower frame rate or a store and forward technology  
9 versus nothing the obvious choice is something is  
10 better than nothing.

11           So, yes, depending on what the needs are  
12 there are ways of working around, and correct with the  
13 time delays and the jitter, and that comes into play  
14 primarily when you're looking at voice sync with lip  
15 sync on video. If you don't need the real time aspect  
16 of the video, if you can afford a several second delay  
17 and can do voice by a traditional mechanism, a two way  
18 radio or a cell phone, you may be able to accomplish  
19 both your needs.

20           Some applications of other networks such as  
21 what the City of Tucson is doing where they have a  
22 mesh broadband network, you have some higher  
23 throughput, you have more capabilities.

24           MR. MCFADDEN: Correct. In fact, there's  
25 probably about four points that I could respond to the

1 comments that just came from the phone. Definitely  
2 expectation. Actually, I'll draw you back to an  
3 analogy when cellular telephone service was first  
4 introduced.

5           There were a lot of folks in the industry  
6 that said the voice quality is going to be so low I'm  
7 not going to want to use it. That want was  
8 overpowered by the desire to have connectivity. In  
9 our cases we dealt with analog, and now we obviously  
10 moved to digital. That theory of the fact that the  
11 quality is not high enough was overcome by demand.

12           I think that is going to be the phenomenon  
13 here as well, that the ability to get at least some  
14 frame rate, some ability to see the other party, to be  
15 able to communicate, is far more important than no  
16 ability to communicate at all. We also saw that very  
17 clearly in the Oakland activity just recently.

18           It was very clear that George Miller, again,  
19 the Incident Commander, found a great utility in being  
20 able to watch over what was happening with the site  
21 commander at the particular site that we used as the  
22 experimentation area.

23           He was able to identify problems in flow of  
24 traffic, flow of individuals, through the process, he  
25 was able to help and be a force multiplier if you will

1 being able to provide additional situational awareness  
2 that was not necessarily able to be developed right on  
3 site, the ability to add additional value, additional  
4 expertise and experience coming in to the site  
5 commander's knowledge base.

6           Having troubles? It's the problems of being  
7 a soft spoken person. I don't want to read this slide  
8 too much to you, but what I wanted to do was talk a  
9 little about IP interoperability or IP operability.  
10 What I want to do is to expand on the ideas of ease of  
11 use and management.

12           Obviously the ability to make the system  
13 such that I can have a nontechnical inexperienced  
14 person perhaps be able to pull a case from a rack, be  
15 able to take that case and be able to do something  
16 with it or to be able to sit in front of a very simple  
17 device and be able to have a meaningful ability to  
18 communicate via voice, video or data, are going to be  
19 key to this.

20           We've seen so many instances where the  
21 technology is a wonderful technology, but it's set in  
22 a corner and off to the side. Only in times of  
23 emergency would it be actually pulled out. That's  
24 obviously going to be less beneficial, and in fact,  
25 potentially problematic when the situation arises

1 because there's not the daily use, the daily  
2 understanding of how to use the technology and use it  
3 properly.

4           We've seen a variety of situations where  
5 technology is properly staged and everybody just  
6 unfortunately jumps to conclusions as to how to use it  
7 and winds up causing more problems than it's actually  
8 designed to solve. Obviously the ability to do  
9 response, flexibility and reach are also very  
10 important.

11           IP technologies, as we talked about a little  
12 earlier, are going to be more resilient. That was one  
13 of the reasons the Department of Defense and some  
14 other organizations really looked heavily on how to  
15 develop IP. DARPA and other organizations brought it  
16 to light. Obviously we're using it quite a bit in the  
17 commercial sector and in our personal lives to do a  
18 variety of things.

19           There is a lot more that can be done in  
20 health care and the emergency response industries to  
21 leverage this technology. Flexibility. Tremendously  
22 flexible. One of the examples I'll give from the  
23 Oakland exercise. We literally came with four kits.  
24 We were able to stage these kits two weeks prior to  
25 the event with minimal amount of understanding of what

1 they wanted to accomplish.

2           We showed up one day in advance of the event  
3 and were given very little opportunity to actually  
4 implement the technology prior to the exercise. The  
5 morning of the event was a Saturday morning. We were  
6 given a green light to actually deploy. Within  
7 approximately two hours we were able to communicate  
8 with the site, even given some of the site issues in  
9 terms of some policy, ability to get on some of the  
10 networks that were available to us.

11           We didn't bring our own network, we  
12 leveraged networks that were there to use. The public  
13 school system gave us access to their network, and the  
14 county gave us access to their network, and we were  
15 able to effectively communicate over those two  
16 infrastructures without significant rebuilding or  
17 restructuring of those infrastructures.

18           The kits that we brought were such that I  
19 could carry them on the plane with me. Obviously I  
20 didn't because three of them would be a bit more than  
21 I would like to carry, but again, the size, weight and  
22 power of these pieces of equipment gave us the ability  
23 to respond very quickly with a limited amount of  
24 weight and shipping requirements.

25           So flexibility is very important. Also, the

1 ability to respond to a request. We came such that if  
2 they said go set up in a structure that was undefined  
3 or not previously allocated for our services, to be  
4 able to do that as well. That could be done either,  
5 again, through fixed infrastructure or maybe even  
6 through some wireless technologies.

7 I don't want to overlook the need for  
8 wireless and flexible means of communication. 3G was  
9 talked about. Satellite technologies, very, very  
10 important. Maybe a small sidebar on satellite  
11 technologies.

12 Colonel, you could probably appreciate this  
13 from your experiences in Katrina. When I was there we  
14 saw so many organizations come through. We, in fact,  
15 came through as well with technology. There was an  
16 absence of a plan, and it's good to hear that there  
17 are some planning activities, but even some of the  
18 folks that came with technology came with very  
19 expensive technology, but they didn't use it to its  
20 optimal performance.

21 In a lot of cases we saw Red Cross and other  
22 type of NGO organizations coming through with huge  
23 satellite capability and only four phone lines, which  
24 is almost a travesty because there was so much more  
25 that we could do. In fact, we came with a dish, we

1 came with a similar capability, but we were able to  
2 create a medical triage area, we were able to create a  
3 humanitarian aid capability, we were able to create  
4 our own incident management center all off of one  
5 infrastructure, again, the power of IP.

6           The ability to deliver not only the  
7 telephones that were needed by the individuals there  
8 that wanted to call home to their loved ones, be able  
9 to reach back to their own medical aid and so forth,  
10 but also the ability for them to fill out forms and  
11 other types of things on line, the ability to  
12 communicate.

13           A variety of different capabilities that all  
14 came out of that. Mobile IP was used. We were able  
15 to use small suitcase implementations to be able to  
16 create these tents that were not necessarily fixed  
17 infrastructure. So tremendous amounts of capability.

18           Again, stress the need to pull it back  
19 together and document it as institutional best  
20 practices so that we don't have to relearn in the  
21 midst of crisis how to be able to provide some of  
22 those things.

23           Policy based administration capabilities.  
24 One of the biggest challenges, and in fact, I see it  
25 daily with some of the folks that I work with in law

1 enforcement, once they make these connectivities they  
2 tend to feel like they've lost control. I'll give you  
3 an example of federal, and state and local  
4 interoperability.

5           Once they connect those systems together in  
6 a lot of cases there's an absence or a feeling of  
7 absence of control.

8           A lot of these systems that we're talking  
9 about, the IP capabilities are going to have inherent  
10 abilities for me to, as an example, publish a service,  
11 maybe a radio channel, maybe a sharing of a chat or  
12 other type of means to be able to communicate and be  
13 able to withdraw that or be able to disseminate it  
14 according to policy, be able to look at credentials of  
15 people coming in to the system and be able to in real  
16 time change those credentials.

17           Maybe I need to advance somebody or decrease  
18 their ability on a moment's notice. Those are all  
19 very important and we believe that they will be very  
20 timely in some of the capabilities that are involved  
21 here. I also talked a little bit earlier about  
22 investment protection.

23           In many cases we're finding even with Legacy  
24 infrastructure, and I'll point to some radio systems  
25 as an example, the ability to take those legacy



1 infrastructures and enhance them, enhance their  
2 ability for survivability, resiliency, change some of  
3 the single points of failure that are involved in  
4 those systems, so, again, just basic enhancements.

5           Then, the ability to leverage, the ability  
6 to change those technologies that change the  
7 protocols, maybe link the systems, as you described  
8 earlier, and be able to make that information more  
9 meaningful, the ability to present it in a different  
10 fashion or different mode of communication. Change  
11 audio to text and text to audio, a variety of  
12 different things.

13           Those are all very possible, and they're  
14 available in many cases today. Any questions on some  
15 of the things I've chatted about so far?

16           (No response.)

17           MR. MCFADDEN: I don't want to take up too  
18 much time. Think we've talked a little bit about the  
19 integration of city, state and local activities. The  
20 slide speaks for itself. In a lot of cases it's going  
21 to take capability to bring people together and a  
22 variety of means by which to do that.

23           Policy administration, flexibility of the  
24 technology and the ability to pull them together all  
25 exist today, but it's really going to depend on

1 memorandums of understanding, ability to change  
2 governance and a variety of things in that area. In  
3 the interest of time I'm going to skip to probably my  
4 conclusions here.

5           It goes without saying IP-based emergency  
6 communications has been a highlight of some of the  
7 things I've talked about here. Availability,  
8 scalability, security, mobility. Apologize, a lot of  
9 abilities, but they're all there. In a lot of cases  
10 what we need to do is focus on how to use them best.  
11 Probably still some advancements.

12           I'll actually focus on the gentleman's  
13 comments a little earlier about mobile IP. There's an  
14 evolution that needs to occur there. The episodic  
15 connectivity is an example, the jitter, and the delays  
16 and enhancements that need to occur on the application  
17 side.

18           Again, I'll stress the ability for us to get  
19 that connectivity out there and to start experimenting  
20 with it and finding ways in which we can leverage it  
21 best. A rapid response for both fixed deployments as  
22 well as restoration, being able to provide things like  
23 mesh networks. Mesh networks is a great example.

24           Mesh networks don't always have to be fixed  
25 to light poles and be put in place months in advance

1 of an infrastructure or event. In a lot of cases, in  
2 fact, I have a kit that I carry with me to some of  
3 these activities where I can provide an ability to  
4 communicate with a matter of cases that might sit in  
5 front of me to cover three or four football fields  
6 worth of area in geography, both in-building as well  
7 as outside. So those types of technology are very  
8 interesting and the portability of that technology  
9 becomes very interesting as well.

10           Recommendations for your report. We would  
11 stress the need to continue to focus on IP  
12 technologies. We would also stress and recommend  
13 immediate funding for advancements in technologies in  
14 support of emergency communications in the healthcare  
15 industry through things like pilots, other types of  
16 events where we're pulling, again, these best  
17 practices together and documenting them such that they  
18 are able to be shared and proliferated throughout the  
19 community at the federal, state and local levels.

20           Again, best practices documentation.

21 Questions? Thank you.

22           MR. BUGEL: Any questions for Kevin on the  
23 bridge?

24           (No response.)

25           MR. BUGEL: Committee members?

1 Dr. Ackerman?

2 MR. ACKERMAN: One of the services that we  
3 found very useful is the IP service of multicast. If  
4 you have a multiple vendor network setting up  
5 multicast is a horrendous problem. Is there any work  
6 within the industry across the manufacturers to fix  
7 the standard on doing a multicast-enabled network?

8 A second question if I could, and this may  
9 be coming in future technology, one of the dreams that  
10 we've talked about is the ability to have something  
11 which I've been calling an ambulance packet. Using  
12 the old metaphor of the super highway, if the  
13 ambulance comes out on the road you all step aside and  
14 the ambulance goes through.

15 In health care it would be really nice in a  
16 network if you could somehow in the header put a red  
17 cross in there, and call it an ambulance packet, and  
18 everybody else gets out of the way including my  
19 grandchildren's MP3s, which they're not going to  
20 understand.

21 Is there any, again, industry progress  
22 because it's something that the industry is going to  
23 have to enable for us so that we can have this  
24 capability which would be an extremely helpful and  
25 useful capability?

1 MR. MCFADDEN: So two very good questions.  
2 First of all, the multicast interoperability between  
3 vendors. Personally, I'm not familiar with the issues  
4 that you describe. I do know that those have been  
5 challenging environments. Multicast is not a daily  
6 activity. In many cases, it also eludes to some  
7 security concerns.

8 MR. ACKERMAN: Yes, but it is a daily  
9 activity health care because we collaborate.

10 MR. MCFADDEN: Absolutely, so I apologize.  
11 The microphone didn't catch those comments.

12 MR. ACKERMAN: That's okay.

13 MR. MCFADDEN: Collaboration is very  
14 important, and the bandwidth optimization associated  
15 with these protocols is very important. I would  
16 suggest that maybe there's an opportunity for us to  
17 take that question offline. It's a very good comment,  
18 though, and one that I have not experienced directly  
19 but one that we can continue to discuss.

20 In terms of the ambulance packet, I think  
21 that was an interesting term, one that I haven't heard  
22 before. Your question is actually fairly well-known,  
23 well-understood. Really what you're talking about is  
24 the prioritization of communication. In fact,  
25 prioritization might even be in terms of real time

1 versus non-real time.

2           When I say that I mean audio based  
3 communications versus maybe something that's, you  
4 know, if I wave my hand in front of you and it's a  
5 video application and you lose some portion of that  
6 communication, you still can interpret or extrapolate  
7 where my hand moved, but if you lose a portion of my  
8 audio, you may lose very vital information.

9           There are technologies, both differentiated  
10 services and IP precedence, that are available today,  
11 industry-standard technologies that allow us to  
12 prioritize that. I don't want to lead you to the idea  
13 that I've solved your problem completely. Governance  
14 is still a huge problem in that area. The ability to  
15 agree what is priority and what is not are huge  
16 issues.

17           Even in cellular networks today there are  
18 the GETS programs and others which allow emergency  
19 responders to be able to identify themselves to the  
20 cellular system or to the telephone system and be able  
21 to gain access to an over-congested environment based  
22 on ruthless preemption of resources.

23           I would suggest to you that some of those  
24 have not been perhaps evolved to the standards that  
25 you might need in this industry and probably an area

1 that needs further discussion. There is technology  
2 there today, but is it specific to this particular  
3 application? There's, again, probably a room for  
4 improvement.

5 MR. BUGEL: Thank you, gentlemen. I  
6 appreciate it. The Committee appreciates it. As you  
7 said, I think the common thread that we're continually  
8 seeing is access to broadband, speed and IP based non-  
9 siloed systems. We appreciate it.

10 MR. MCFADDEN: Thank you, Mr. Chairman.  
11 Thank you, Committee.

12 MR. BUGEL: We now go to Mr. Scott Landau  
13 from Motorola talking about the higher capacity,  
14 greater bandwidth technology in emergency medical and  
15 public health services.

16 MR. LANDAU: Well, thank you, Mr. Chairman.  
17 Motorola is very appreciative of the time that the  
18 Committee has allowed us, but more importantly, we're  
19 very appreciative of the fine work that you're doing  
20 in what we think will be a major impact in the  
21 emergency medical services and healthcare marketplace,  
22 so thank you again.

23 What I've been asked to speak to is our view  
24 of the next generation in wireless broadband, but more  
25 specifically, the impact to the folks in this room,

1 and the folks on the phone and folks that you will be  
2 impacting, so I thought I would start with an  
3 interesting fact to give you maybe a different  
4 perspective on this.

5           There are in the world today four births per  
6 second, but many of you may not know that there's  
7 actually 25 mobile phones sold per second, so that  
8 would probably explain why a lot of us in this room  
9 and on the phone are very, very busy. So you will see  
10 that this is really a changing and evolving  
11 technology.

12           When we talk about broadband we're in a  
13 world today where everything is going mobile. I  
14 remember when I first got into working with medical  
15 services and pagers were the big thing. The doctor  
16 wanted to have a pager, but as soon as he realized he  
17 had to go to another facility, pager no longer worked.

18           So you started thinking about mobility and  
19 how are we going to start seeing that mobility?  
20 Today, the expectation is everything is mobile. The  
21 other expectation is that everything is digital, so  
22 even things as simple as reading a book. My daughter  
23 came home for this Thanksgiving break with her Sony  
24 reader, and all of her books now are digital.

25           She told me that she can take a format and



1 with three different programs basically turn any book  
2 into digital format. I'm happy to sit and curl up  
3 with a good book, but the expectation for the next  
4 generations and the people that are going to be  
5 working in this field are going to be somewhat  
6 different than the expectation that we've had.

7           Then clearly, broadband has gone wireless.  
8 It's not enough to just have broadband in your home,  
9 now you want to be able to print remotely, you want to  
10 be able to send MP3 to your stereo. The whole  
11 marketplace, both in the home and at work, is critical  
12 to going wireless.

13           With the events that the Colonel and other  
14 folks in this room experience we don't even know where  
15 we need to have that connectivity sometimes. It may  
16 change. So it's a wireless broadband revolution.  
17 When you think about it today it's probably the most  
18 significant shift in communications since cellular  
19 network.

20           I'm going to show you some slides that will  
21 back that up. You see the need for wireless broadband  
22 in rural, we spoke about that earlier in some of the  
23 reports and the funding that's taking place, in  
24 residential, as I mentioned, but even in point to  
25 point.

1           Some of the connectivity that was discussed  
2 earlier and some of the grant money is clearly going  
3 to go to wireless backhaul where it's more highly  
4 reliable, more resilient and perhaps more cost  
5 effective. So what I'm going to speak to during my  
6 time here is really what's important for Emergency  
7 Medical Services and healthcare.

8           I want to give you some examples of how some  
9 of these wide area wireless technologies are going to  
10 impact you, what we see as technologies that are  
11 suitable for different spectrum that's going to be  
12 available and has come available recently, and then  
13 we'll give you some of probably the next view of how  
14 it will help.

15           So vehicle accident. This is a very common  
16 EMS activity. What's missing today is the ability for  
17 a wireless network to show you on site what's  
18 happening. So with the advent of high capacity video  
19 you can have a portable or fixed mounted camera that  
20 can be used to capture video still images at the scene  
21 of an accident and be able to send that to emergency  
22 room doctors.

23           The doctors at the emergency room can see  
24 the vehicle and get an understanding of the mechanism  
25 of injury to guide them in their treatment of the

1 victim. Clearly, video is going to increase the  
2 emergency room doctor's knowledge of the mechanism of  
3 injury. It's going to give them biometry data from  
4 the incident scene, enable real time monitoring  
5 patients on the way to hospitals.

6 I mean, it's really some exciting things  
7 that I think everybody's talked about but as been  
8 pointed out previous we really haven't had some of the  
9 technologies to bring that video and some of these  
10 things over the air real time.

11 Then when you think about remote diagnosis  
12 cameras inside of the ambulance can capture the video  
13 of patients, send it to an emergency room doctors for  
14 a consultation and then the doctors in the emergency  
15 room can help guide treatment of the victim which is  
16 really time critical.

17 So by having some of these video and  
18 technologies enabled through broadband wireless the  
19 remote diagnosis can shorten the time between  
20 treatment. When you think about any type of network I  
21 think it's helpful if we all get grounded on what I'd  
22 like to consider the five Cs.

23 Coverage is really different for the rural  
24 areas that we've talked about as opposed to the city.  
25 You can think about a broadband requirement to be on

1 12th Street in Washington, D.C., may be very different  
2 than you need in Loudoun County, Virginia. How do you  
3 cover those areas where, again, you may or may not  
4 know where the scene is going to be or where the  
5 incident is going to be?

6           Cost is a major consideration these days.  
7 As we talked about, there's not necessarily funding in  
8 place, both on a statewide, local or even federal  
9 grant program for some of these things, so you really  
10 have to look at total cost of ownership.

11           Do you leverage the great work that's been  
12 done by the carriers, do you look at the potential 700  
13 nationwide broadband work, or do you think about doing  
14 your own system? Those are really dependent on your  
15 cost analysis. Then control. There's been a lot of  
16 talk this morning about governance. Clearly, Motorola  
17 views that as a primary issue.

18           You start getting into even in discussions  
19 about the statewide plans; who is going to control it,  
20 who is going to decide what the plan is, but more  
21 significantly, how are you going to work among each  
22 other? Some of my experience was in south Florida  
23 where the technology was never the issue.

24           You had the ability to do a closest unit  
25 response, but then you got into issues like well, how

1 many people ride on the ambulance, what medication do  
2 you give in case of a heart attack, what type of units  
3 do you send in certain events? So a lot of it never  
4 really got off the ground very quickly because of this  
5 governance issue.

6           They're not really necessarily technology  
7 issues. Then capability. Do you need voice? We  
8 spoke a lot this morning through some of the reports  
9 about antiquated voice systems, but you still have the  
10 requirement for voice. Video data interoperability  
11 and then capacity. How do you have operability for  
12 your everyday needs, and then how do you have the  
13 interoperability capacity in time of events?

14           So this is a somewhat simple chart to  
15 basically show that based on the applications that you  
16 need and based on the governance and how you plan on  
17 operating you may find that you need a hybrid network  
18 with multiple systems or you may be okay with a single  
19 network. Those are choices that are going to have to  
20 be formed as you start looking at those five Cs.

21           So when we talk about networks today, and as  
22 I speak about this I'm going to spend most of my time  
23 talking about the technology that enables the  
24 broadband networks in the next generation, but there's  
25 really three pieces to any broadband solution, one is

1 the network, the other would be the devices and then  
2 clearly the applications which drive both the devices  
3 and the networks.

4           So let's spend just a moment talking about  
5 typical type of applications for the medical field.  
6 As I said earlier, messaging, and paging and those  
7 sort of things have been around a long time, it's  
8 nothing new, but clearly, today's networks provide,  
9 even through P25 systems and a lot of the current  
10 systems that have been deployed, you have the ability  
11 to do basic dispatching, you can do driver's license,  
12 license plate, you can do some AVL and you can also  
13 do, you know, basic commercial applications.

14           As you start moving toward the next  
15 generation, Tier 2, you can do all of those things,  
16 but then with a 96 kilobit system you can start doing  
17 some reporting, you can start looking at Internet,  
18 intranet, and you can do a little more AVL  
19 applications.

20           Tier 3 is basically 3G technology which a  
21 lot of you are familiar with as available today, and  
22 that includes Tiers 1 and 2, but then you can also do  
23 images, some buffered video, you can do remote cameras  
24 and you can start doing a little bit more bandwidth.  
25 What I'm going to focus the rest of this conversation

1 on is Tier 4, which is 4G.

2           It's WiMAX, LTE, it's 4.9 mesh and other  
3 meshing technologies, and I'll explain these in a  
4 little more detail. Now, you're getting into the  
5 biometric data, you're doing full motion video, you're  
6 doing multimedia, remote cameras, video archiving.  
7 We're really starting to see the benefits to your  
8 constituents when we start moving to 4G, so we think  
9 4G enables the next gen.

10           When you look at wireless broadband wide  
11 area landscapes you can see that, again, when you look  
12 at 2G you're going all the way back to 1992 with some  
13 of those capabilities that we spoke about with basic  
14 messaging, some of the dispatching, et cetera. As you  
15 start moving forward we're really at an evolution here  
16 with 4G because right around the corner—  
17 I heard a lot of discussion today, also, about from  
18 the reports that either you have legacy systems or  
19 people are in a position now to look at, you know, do  
20 you jump into today's platforms at 3G and WiMAX and  
21 mesh technology, do you look at a 700 broadband? You  
22 know, clearly some of these were themes coming through  
23 today.

24           We think there's a great opportunity here  
25 because 2009 to 2011 is pretty close, so as you start

1 getting your planning, and funding and everything in  
2 place clearly you might want to look at these LTE, and  
3 WiMAX and meshing technologies. That's where we're  
4 putting our investment.

5           The interesting thing about this slide is  
6 when you look at GSM moving to LTE, 82 percent of the  
7 worldwide deployments in cellular are GSM, so that  
8 would give you a feel for why Motorola is putting a  
9 heavy investment into LTE and WiMAX. Really, this  
10 slide I think is pretty helpful if you watch the  
11 screen for a moment.

12           When you look at the upper part of the  
13 screen this is really the 2G technologies, and this is  
14 the transfer rate for an MP3 song. We talked about  
15 that earlier. You know, it's a typical five megabit  
16 file, and watch at the bottom of the screen as you  
17 start looking at 4G. I mean, with a WiMAX system  
18 you're talking about three seconds to transfer a five  
19 meg file.

20           The last two slides that just took 10  
21 seconds are LT and WiMAX, the last was mesh, and then  
22 you'll see the darker green are 2G and the middle  
23 ground there is 3G. I won't painfully make you wait  
24 through the 14 minutes or 11 minutes that it will take  
25 to get through, okay? That's why people want



1 broadband. This really shows it.

2 I'm not going to spend a lot of time talking  
3 about this technology, but we'd be happy to follow-up  
4 with anybody and talk about OFDMA. There are some  
5 very important characteristics in 3G and 4G as to why  
6 we believe this technology enables everybody in this  
7 room.

8 It has to do with the spectral efficiency  
9 and the throughput on the spectrum that's going to be  
10 used, there's better performance on non-line of site,  
11 interference, faded conditions, so that, again, we see  
12 the future as LTE, WiMAX and meshing technologies.  
13 The reason I'm showing this is to us there's really  
14 probably a third area which is -- well, no, 4.9 is on  
15 there -- there's really three areas that you have to  
16 look at when you're considering what technology you're  
17 going to go, whether it be WiMAX or LTE.

18 Obviously 700 megahertz for public safety is  
19 a huge nationwide initiative. Clearly, there are now  
20 channels set aside, but some of the areas of the  
21 country it may make more sense to look at WiMAX in  
22 terms of what spectrum's available. We think that 4.9  
23 that's been around now for a few years is an enabler  
24 today for some folks.

25 So where do you use these? Again, it's

1 going to depend on where you have the spectrum  
2 available, but there are some really nice advantages  
3 at 700 megahertz LTE because you have very good  
4 throughput, coverage really is very nice because  
5 you're looking at portable coverage, and this is miles  
6 per site, so in an urban environment you're looking at  
7 four miles per site, suburban 15 and then at rural  
8 areas you're getting 75 miles per site, which has  
9 really been unheard of.

10           With high power you can get up to 400 rural  
11 miles per site. Again, the other thing that's nice  
12 about some of these technologies is that even though  
13 we're not going to specifically talk about devices  
14 there will be a high availability of devices.  
15 Motorola's view of that is we think that folks want to  
16 operate so that technology is second nature.

17           We think in the past people have had to make  
18 choices about what device they've had to buy, what  
19 networks they're going to operate on based on strictly  
20 what was available.

21           We think this will enable you to really look  
22 at how you operate, how do you need to communicate  
23 among health care and EMS with other first responders  
24 and then decide how you're going to leverage those  
25 applications through these networks and maybe not have

1 to compromise to the point that you did in the past.

2           The other nice thing is that these  
3 technologies provide high speed motion, which is,  
4 again, something that you really have suffered through  
5 because of lack of spectrum and lack of technology in  
6 4G. Then here is an example of where you have 2.5 and  
7 3.5 gigahertz spectrum available.

8           Again, you have a whole bunch of devices,  
9 everywhere from handheld to commercial handsets, and  
10 coverage is really pretty nice, also, because on a  
11 portable you're still getting one to two urban and 20  
12 to 30 rural square miles. You can see there's  
13 differences, so, again, you look at the five Cs and  
14 based on the applications and how you want to  
15 interoperate make choices about what technology you  
16 want to use.

17           Again, this allows for high speed motion.  
18 So key, 4G technologies. I spoke briefly about OFDMA,  
19 which is really the key to moving toward a WiMAX, LTE  
20 or MESH solution. Peer to peer communication is  
21 fundamental. Meshing, in fact, is part of many  
22 wireless standards, and as was pointed out earlier,  
23 it's available today.

24           There are key benefits for emergency  
25 medical. We talk about mobile Internet, we talked

1 about mobile routers a little bit earlier. You know,  
2 these are technologies that are available today so  
3 that you can look at multiple networks, single  
4 networks, make those choices.

5           Next generation multimedia applications.  
6 Clearly, you're interested in faster response times,  
7 and we think that you have the ability to leverage  
8 commercial solutions that will be customized for  
9 mission critical applications. So there's a wide  
10 variety of commercial public safety devices, and we  
11 think the future is very bright in 3G and 4G  
12 broadband.

13           So, again, thank you for your time. I'd  
14 open it up to questions, Mr. Chairman.

15           MR. BUGEL: Scott, thank you very much.

16           Questions from Committee members on the  
17 phone?

18           (No response.)

19           MR. BUGEL: Committee members in the room?

20           (No response.)

21           MR. BUGEL: Again, I would like to thank  
22 you, and I'd like to also acknowledge your colleague,  
23 Michael Alagna, who has worked with us many times  
24 educating both policy makers, carriers and  
25 practitioners in this area. We do appreciate both you

1 and Cisco participating today.

2           Underneath all the applications, as I said  
3 before, is the underlying technology, and furthermore,  
4 it's good to get a future look at what's going to  
5 come. Sometimes we tend to get a little myopic and  
6 think well, how are we going to get out of this one?  
7 Technology may actually provide a solution. So thank  
8 you very much.

9           MR. LANDAU: Thank you.

10           MR. BUGEL: I'd now like to just open up the  
11 floor to any of the Committee members in terms of any  
12 comments on process, progress, direction. We have the  
13 opportunity to get together every 30 days or so.

14           As I said, I and the people that I'm working  
15 with, the FCC and NTIA, have been monitoring,  
16 participating and trying to facilitate with the  
17 working groups, but it's not often that we have the  
18 opportunity to talk face to face, so if there's  
19 anything you'd like to say to our FCC or NTIA  
20 colleagues?

21           Mr. Traficant, thank you for making it.  
22 Proof that the airline system still does work.

23           MR. TRAFICANT: It's the Harris network.

24           MR. BUGEL: Mr. Dante Murphy, thank you for  
25 joining us. Mr. O'Brien was with us the last time.

1 Appreciate your participation. We're going to  
2 conclude here then, and I'd like to see if we can meet  
3 with the Chairs and Vice Chairs just right over here  
4 by this section just for about five minutes. That  
5 would be great, those folks.

6           Again, thank you to Mr. Roskind for  
7 facilitating the document sharing, and I believe  
8 someone that's working with you is here?

9           MR. ROSKIND: Right. SRA Touchstone is  
10 giving us technical support. Also, for those of you  
11 afraid to learn yet another technology it turns out  
12 the portal took me about three minutes to get through.  
13 The truth is it's just a matter of, you know, where do  
14 you look for the document, opening a Word document,  
15 saving it.

16           It gives you a very clean Word document  
17 management trail and only one document opened at a  
18 time, so you don't have to worry about multiple  
19 versions. We have staff committed from SRA Touchstone  
20 in our budget to support you if you need a password or  
21 need training. Really, it takes about three minutes.  
22 Trick is to get the password, get on the phone, talk  
23 to somebody from SRA.

24           Mr. McFadden or Lauren, will be glad to help  
25 you. I think you'll find it's not that hard. Just

1 one overarching comment. What I see is true in this  
2 area and every other area that we look at is there are  
3 emerging technologies that are in play. You have net-  
4 centric technologies being developed, you have  
5 pathways to enable mobile client interfaces, you have  
6 expanding commercial infrastructure which is  
7 available.

8           The underlying issue that is not present is  
9 data strategy and data architecture and defining core  
10 exchange requirements across multiple boundaries in  
11 the data world. That continues across all sectors  
12 that I look at to be the underlying missing critical  
13 infrastructure is the underlying data strategy for  
14 identifying key issues and data and how do you share  
15 them? That's something that might be considered.

16           MR. BUGEL: Okay. Anybody else? Kevin?

17           MR. MCGINNIS: I guess kind of related to  
18 that and related to a meeting I had mentioned earlier  
19 that's coming up, I think one of the issues in data  
20 strategy is really figuring out what we want to  
21 communicate. Quite frankly in the emergency medical  
22 field when I say medical quality video half the room  
23 lights up and half the room goes to sleep, and these  
24 are docs, okay?

25           There are those of the persuasion that

1 paramedics can do what they need to do without a video  
2 camera looking over their shoulder, and there are  
3 other physicians who feel like they might make a  
4 difference with a video camera looking over the  
5 medic's shoulder.

6           To that end, we're having this meeting in a  
7 couple of weeks to try and start what we view as a  
8 fairly normal process of developing a white paper on  
9 future technologies, field technologies, and their  
10 implications for bandwidth and other resource  
11 utilization because we've got to start the  
12 conversation.

13           You know, before we can really do  
14 strategizing like that we've got to figure out what we  
15 want, what we need, and we're not there yet.

16           MR. BUGEL: All right. Mr. Linkous,  
17 anything?

18           MR. LINKOUS: I would just like to add to  
19 those comments I think there is a great deal of  
20 overselling of data in terms of systems, and I think  
21 that is a good question in terms of what types of data  
22 streams we're going to be needing. It's one thing to  
23 say we need a high quality video going into the  
24 physician emergency room.

25           It's another thing to say whether the



1 physician has the time to look at a video or whether  
2 it's just going to go to somebody like a triage nurse  
3 and maybe the information that is needed is not quite  
4 the same level of information that we're being sold  
5 right now. So I think before we develop a solution we  
6 should probably take a very good look at the problem.

7 MR. BUGEL: Okay. Mr. Adams?

8 MR. ADAMS: I think, also, we need to  
9 qualify the data stream, the bandwidth, because, you  
10 know, if you don't have the right bandwidth then  
11 you're not going to be able to get the data through,  
12 and you're not going to be able to do multicasting and  
13 any other stuff. So we need to qualify what bandwidth  
14 we're looking for, too, for the technology.

15 MR. BUGEL: Okay. Dr. Kaplowitz?

16 MS. KAPLOWITZ: I would like to emphasize  
17 that for public health as well. We don't need to get  
18 every single little piece of data to track what's  
19 happening, and we have to look at what we really need  
20 for surveillance, for example. Data overload could be  
21 a real issue. So I want to agree with what was said  
22 by both Kevin and John on this one.

23 MR. BUGEL: Mr. Griffin?

24 MR. GRIFFIN: I also want to echo the  
25 sentiments of my peers here. Also, think about

1 whatever we implement needs to be really as automated  
2 as possible and have as little impact on the end user  
3 as possible. Again, looking at the technology  
4 implications, and the knowledge base of our paramedics  
5 and even some of our emergency physicians, the  
6 technology aspect is kind of limiting on some of them,  
7 so I just hope we can keep that in mind as well.

8 MR. BUGEL: Absolutely. Absolutely. I  
9 think we're certainly on a course that in terms of  
10 bringing the networking, and the enabling transport  
11 and network capability to a point where the user has  
12 the discretion to utilize the application.

13 I mean, in essence they're not embedded  
14 elements of the network, they're applications on a  
15 network, and what one person finds beneficial they're  
16 able to utilize and another person can utilize another  
17 application, but basically have those things enabled  
18 they can make those decisions as opposed to making  
19 them mutually exclusive.

20 So with that, I do appreciate everyone  
21 taking the time. As I said, our next meeting is  
22 tentatively scheduled for the 18th. We will move  
23 forward given our timeline and structure. Again,  
24 thank you very much.

25 (Whereupon, at 12:55 p.m., the meeting in

1 the above-entitled matter was concluded.)

REPORTER'S CERTIFICATE

CASE TITLE: Joint Advisory Committee Meeting  
MEETING DATE: November 28, 2007  
LOCATION: Washington, D.C.

I hereby certify that the proceedings and evidence are contained fully and accurately on the tapes and notes reported by me at the hearing in the above case before the Federal Communications Commission.

Date: November 28, 2007

Barbara Berney  
Official Reporter  
Heritage Reporting Corporation  
Suite 600  
1220 L Street, N.W.  
Washington, D.C. 20005-4018lf

Heritage Reporting Corporation

(202) 628-4888