

1 NEW MILLENNIUM RESEARCH COUNCIL

2

3 MAKING COMMUNITIES SAFER:

4 IMMEDIATE AND NEAR-TERM SOLUTIONS TO RESOLVE

5 INTEROPERABLE COMMUNICATIONS PROBLEMS

6 FOR FIRST RESPONDERS

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11 9:14 a.m.

12 Tuesday, September 14, 2004

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18 The Reserve Officers Association

19 1 Constitution Avenue, N.E.

20 Washington, D.C. 20002

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## 1 P R O C E E D I N G S

2 (9:14 a.m.)

3 MR. HEPNER: Well, good morning. We'll have a  
4 couple minute late start and hope that some of our  
5 additional friends in the media will show up. As we know,  
6 we serve them food and hope that they will come in for  
7 that.

8 (Laughter.)

9 MR. HEPNER: My name is Allen Hepner. I'm  
10 Executive Director of the New Millennium Research Council.  
11 I, of course, would like to start by welcoming you all  
12 very much to this New Millennium Research Council event,  
13 Making Communities Safer: Immediate and Near-Term  
14 Solutions to Resolve Interoperable Communications Problems  
15 for First Responders. I am very pleased to see you here  
16 today, no doubt very interested in hearing the assembled  
17 panel of experts speak about problems and possible  
18 solutions affecting first responders' ability to properly  
19 communicate with one another.

20 As recent panels, commissions, and public  
21 hearings have unfortunately highlighted, communications  
22 interoperability, the ability of first responders from a  
23 variety of services being able to clearly speak with one  
24 another during an emergency situation, remains a critical  
25 public safety issue three years after 9/11. As many of

1 you are aware, it has been reported that many first  
2 responders perished in the Twin Towers as a result of  
3 communications systems interoperability failures.

4                   During the past year, the 9/11 Commission and  
5 the House Government Affairs and Senate Commerce  
6 Committees, to name but a few bodies, have recently held  
7 public forums to discuss what can be done to improve  
8 communications interoperability between first providers.  
9 Many experts have testified that the problem is long-term  
10 in nature, as I was discussing with my colleagues earlier,  
11 and have recommended fixes that accept a longer-term  
12 horizon -- and that is five-plus years -- concluding that  
13 the difficulty was not created overnight, and therefore it  
14 will not be fixed overnight.

15                   There can be little doubt as to the truth of  
16 this assertion for all of those people that are  
17 knowledgeable in the field. Communications  
18 interoperability problems go back at least several  
19 decades, with different agencies employing different  
20 systems, even in the same city. Agencies had very  
21 specific needs and they didn't always anticipate the need  
22 to communicate with other local agencies or nearby  
23 jurisdictions, not to mention State or Federal entities.

24                   Understanding the rudimentary complexities of  
25 the problem first responders face with interoperability

1 and the wide range of issues that need to be addressed,  
2 the New Millennium Research Council posed a simple,  
3 straightforward question when contemplating hosting  
4 today's event, and that is what can realistically be done  
5 in the near term, defined as between tomorrow and the next  
6 24 months, to ensure that first responders are much better  
7 able to speak with one another in an emergency situation,  
8 be it natural or manmade.

9                   To be able to answer this first-order question,  
10 we realized that one really needs to examine the primary  
11 causes behind communication lapses affecting public safety  
12 departments, for example -- and there are many -- outdated  
13 or incompatible equipment, interference issues,  
14 jurisdictional problems, funding lapses, scarce allocation  
15 of resources, expansive standards, interpersonal  
16 communication problems and issues, upgrade or replacement  
17 delays. There are many issues.

18                   One then needs to explore the range of technical  
19 solutions presently or shortly available and understand  
20 the associated expectations for funding, which are  
21 considerable. Following this series of questions, the New  
22 Millennium Research Council was interested in better  
23 understanding what public policy remedies are available to  
24 spur action for improving homeland security and achieving  
25 interoperability. What are the public policy solutions at

1 the Federal level? Is legislation necessary to accelerate  
2 the deployment of interoperable communication systems?  
3 Are there other untapped sources of funding that Federal  
4 or State governments could use for interoperability needs?

5 I started off by saying that the New Millennium  
6 Research Council had but one simple, straightforward  
7 question, and of course, as you can hear, that one  
8 question leads to many other unanswered questions or  
9 perhaps I should say questions with a diverse range of  
10 answers.

11 Today, to help us further investigate and take,  
12 hopefully, another step towards solving some of these most  
13 difficult questions, the New Millennium Research Council  
14 has assembled a distinguished panel of technical experts,  
15 academic researchers, and government officials who will  
16 share their views on the before-mentioned questions and,  
17 no doubt, more.

18 I would like to mention them very briefly by  
19 name and thank them for coming. George Ake will join us a  
20 bit later. He is flying in. He is Program Manager,  
21 Capital Wireless Integrated Network. David Boyd, Director  
22 of SAFECOM Program Office, Department of Homeland  
23 Security. Sal DiRaimo, Principal Engineer, New York State  
24 Technology Enterprise Corporation. William Jenkins,  
25 Director of Homeland Security and Justice Issues,

1 Government Accountability Office. Donald Lund, Research  
2 Associate Professor, Director of the ATLAS Project,  
3 University of New Hampshire. John Peha, Professor of  
4 Electrical Engineering and Public Policy, and Associate  
5 Director of the Center for Wireless and Broadband  
6 Networks, Carnegie-Mellon University. John will also be  
7 serving as the moderator for today's event. Viktor Mayer-  
8 Schoenberger, who is joining us telephonically from  
9 Cambridge. He is Associate Professor of Public Policy,  
10 Harvard University, Kennedy School of Government. Ray  
11 Steele, Director of the Center for Information and  
12 Communications Sciences, Ball State University. And Tom  
13 Tolman, Program Manager and Principal Investigator,  
14 Communications Technology, National Law Enforcement and  
15 Corrections Technology Center, University of Denver. All  
16 in all, an extraordinarily esteemed group.

17                   Before we hear from this panel, I have the honor  
18 and pleasure of introducing this morning's keynote  
19 speaker, a person who has been personally involved and  
20 interested in this topic of communications  
21 interoperability for quite some time. The New Millennium  
22 Research Council is very pleased to have Congressman Bart  
23 Stupak of Michigan speak to the assembled today. The  
24 Congressman is a member of the House Energy and Commerce  
25 Committee and co-chair of the U.S. House Law Enforcement

1 Caucus. Congressman Stupak was named to the Democratic  
2 Caucus Task Force on Homeland Security, and he currently  
3 serves as a member of a task force subgroup, the Domestic  
4 Law Enforcement Working Group, where he has fervently  
5 fought to train and equip local law enforcement and other  
6 first responders to be better prepared for potential  
7 terrorist incidents or other emergencies.

8                   Let me now welcome Congressman Bart Stupak of  
9 Michigan who will share his insights and provide us with  
10 his views on activities that might help first responders  
11 move toward achieving communications interoperability.  
12 Congressman, welcome to today's event. We are delighted  
13 that you could join us.

14                   (Applause.)

15                   MR. STUPAK: Well, thank you. It certainly is  
16 my pleasure to be here.

17                   Let me introduce Chani Wiggins. She is my  
18 legislative director and she does all my work in this area  
19 on telecommunications and a lot of work on the Commerce  
20 Committee.

21                   I want to thank you for the opportunity to speak  
22 to you here today about how far we have come and where we  
23 need to go to ensure that our public safety agencies and  
24 first responders can communicate with each other in times  
25 of natural disaster or terrorist attack.

1                   I represent the northern part of Michigan that  
2 serves as the border to Canada. I have 31 counties. I  
3 have two time zones. I have three of the five Great  
4 Lakes, and I have one-half of the land mass of Michigan.  
5 So I have a very, very rural district, to say the least.  
6 It's extremely difficult for my first responders to  
7 communicate with each other, even through cell phones.  
8 Service is spotty at best, to say the least, just because  
9 of the vastness and ruralness of the district.

10                   Even though I spent most of my time as a police  
11 officer in urban areas, just seeing it in rural northern  
12 Michigan, it really magnifies the problems we have with  
13 interoperability. As a police officer for, like I said,  
14 more than 12 years, I really have a great interest in this  
15 interoperability, and I know how it affects all first  
16 responders.

17                   Let me just start off with a quote, if I may,  
18 and here is the quote. It says, "It is important that we  
19 understand, in the first minutes and hours after attack,  
20 that is the most hopeful time to save lives. And that is  
21 why we are focusing on the heroic efforts of those first  
22 responders. That's why we want to spend money to make  
23 sure equipment is there, strategies are there,  
24 communications are there, to make sure that you have  
25 whatever it takes to respond." That was President Bush

1 when he made the statement up in New York in February of  
2 2002. And I agree with the President 100 percent. The  
3 problem is there has been very little follow-through since  
4 the President made that statement.

5                   Since September 11th, 2001, public safety  
6 agencies all across this nation have been charged with  
7 ensuring the security of our critical infrastructure.  
8 9/11 really served to highlight how critical it is for our  
9 public safety agencies to have the funding, the spectrum,  
10 and equipment that they need to best communicate with each  
11 other to fulfill their mission.

12                   Federal reports on the 9/11 emergency response  
13 concluded that the inability of first responders from  
14 different agencies to talk to each other, the lack of  
15 interoperability, if you will, was a key factor in the  
16 deaths of at least 121 fire fighters.

17                   Unfortunately, scant progress has been made by  
18 the administration and Congress to provide what is needed  
19 to our local, county, and State first responders to become  
20 fully interoperable. Our public safety agencies continue  
21 to lack the ability to communicate with each other,  
22 interagency or inter-jurisdictionally. Fire fighters  
23 cannot talk to police. Local police can not talk to EMS  
24 and none of them can talk to State police, and so on and  
25 so on.

1                   According to the U.S. Conference of Mayors, a  
2 report that was released in June, more than 80 percent of  
3 America's cities are not interoperable with each other or  
4 with State or Federal agencies. This means then in the  
5 event of a terrorist attack, more than three-quarters of  
6 our cities are woefully unprepared to coordinate the  
7 response and communicate effectively, to be safe, to be  
8 secure, and to do their job.

9                   Here are some more troubling numbers from that  
10 same report.

11                   97 percent of the cities are unprepared to  
12 communicate for any chemical plant disaster.

13                   94 percent of our cities are unprepared to  
14 communicate during a rail disaster.

15                   92 percent of our cities are unprepared to  
16 communicate during a seaport disaster.

17                   This is a huge problem. What it says to me, our  
18 local public safety agencies are nowhere closer to being  
19 interoperable than they were 3 years ago or 20 years ago  
20 when I was working the road.

21                   Why is that? I believe there has been a serious  
22 lack of commitment by both the administration and the U.S.  
23 Congress. This administration talks a great game on  
24 homeland security and interoperability, but it doesn't  
25 seem to want to fully deliver a product, especially when

1 it comes to funding. Despite the creation of the  
2 Department of Homeland Security and grant programs for  
3 first responders, funding for modernizing their  
4 communication systems has fallen well short of the  
5 estimated \$18 billion that is needed to make the nation's  
6 public safety agencies fully interoperable.

7 I wonder if, other than Washington, D.C., any  
8 effort or money has been put forth to bring  
9 interoperability to the nation. Actually I have asked  
10 that question, and if you take a look at the funding in  
11 fiscal year 2003, only \$100 million was devoted to local  
12 public safety communication systems and no funding was  
13 available at all in fiscal year 2004. We are in the  
14 middle of the budget process now, the appropriations  
15 process. The President's funding request for  
16 interoperable communication systems for 2005 is zero,  
17 nothing. The President didn't even ask Congress for money  
18 to operate his new SAFECOM division of the Department of  
19 Homeland Security that has been charged with developing a  
20 long-term plan and strategy on interoperability. So  
21 again, the administration, good with the rhetoric, but  
22 there has been very little follow-through.

23 That is why there needs to be a guaranteed  
24 funding stream for communication grants. I have  
25 introduced a bill, along with Congressman Vito Fossella of

1 New York, that would do just that. Our bill, the Public  
2 Safety Interoperability Implementation Act, H.R. 3370,  
3 would set up a public safety communications trust fund to  
4 expeditiously move to provide our nation's public safety  
5 agencies with interoperability so they will be able to  
6 talk to each other.

7                   In the short term, the trust fund would be  
8 funded by a three-year grant program funded through the  
9 trade appropriations cycle, providing up to \$500 million  
10 per year for interoperability grants. In the long term,  
11 the trust fund's revenue would come from the sales of  
12 spectrum conducted by the Federal Communications  
13 Commission. Our bill would dedicate 50 percent of net  
14 revenue from the future spectrum auctions to the trust  
15 fund. By dedicating funds from the sale of spectrum, we  
16 would ensure that funding will be set aside no matter what  
17 happens in the annual appropriations process.

18                   Local agencies simply just cannot afford to  
19 upgrade their communication systems without the assistance  
20 of the Federal government. I believe that Federal  
21 assistance is more than justified when the Federal  
22 government calls upon local agencies to be even more  
23 vigilant and more prepared for possible acts of terrorism.  
24 In fact, the 9/11 Commission in their report outlines a  
25 similar recommendation. The report stated -- and again, I

1 want to quote -- "The inability to communicate was a  
2 critical element of the World Trade Center, Pentagon,  
3 Somerset County, Pennsylvania crash sites where multiple  
4 agencies and multiple jurisdictions responded. The  
5 occurrence of this problem at three very different sites  
6 is strong evidence that compatible and adequate  
7 communications among public safety organizations at the  
8 local, State, and Federal level remains an important  
9 problem. Federal funding of such interagency  
10 communication units should be given a high priority."

11           Some may argue that local agencies can apply for  
12 grants from DHS's State formula block grants. They argue  
13 that money can be used for interoperable communication  
14 systems. Well, earlier this year on the House floor, I  
15 went there while we were debating the bill. I asked how  
16 much of the State funding has gone to interoperability,  
17 and DHS could not tell me. The appropriators could not  
18 tell me but they promised to get back with me in a few  
19 weeks. I think that has been a couple months now and they  
20 still don't know. That doesn't say much about the  
21 oversight or planning from DHS about where the billions of  
22 dollars in State formula grant money have gone.

23           The lack of funding isn't the only obstacle for  
24 public safety agencies to become interoperable. They need  
25 spectrum and they need a long-term plan and commitment

1 from this and future administrations. The 700 megahertz  
2 spectrum, now occupied by the broadcasters, had been  
3 marked for public use as soon as the broadcasters vacate  
4 this analog spectrum and move to digital signals. The  
5 deadline is 2006, but it is a deadline that they are  
6 already talking about extending to 2009. We know  
7 broadcasters are nowhere near making the 2006 deadline.  
8 That again leaves public safety in a real quandary. It  
9 has been awfully quiet over on Pennsylvania Avenue as to  
10 how best to address this issue.

11           Finally, the administration needs to provide a  
12 long-term plan on how to make our nation's public safety  
13 agencies fully interoperable. A report released this  
14 month by the General Accounting Office highlighted the  
15 lack of focus and oversight by DHS. Even the folks at  
16 SAFECOM recently told Congress that at the rate we are  
17 going, it will be another 20 years before public safety  
18 agencies are fully interoperable. We don't have 20 years.  
19 Another terrorist attack on the United States is not a  
20 question of "if," but a question of "when." It won't be  
21 20 years from now. It could be 20 minutes. It could be  
22 20 days. It could be 20 months. We don't know and we are  
23 not prepared.

24           Public safety is not an issue where the  
25 administration and Congress should continue drag its feet,

1 but here we are three years after 9/11 and we're still at  
2 square one. It is a disgrace and it needs to be changed  
3 and it has to be changed now. We need leadership from the  
4 administration and the Congress to get the job done.

5 Thank you for the opportunity to say a few  
6 words. I look forward to hearing more from this  
7 organization. Thanks for the opportunity to allow me to  
8 speak.

9 (Applause.)

10 MR. HEPNER: Thank you, Congressman, for that  
11 very thought-provoking speech. I have no doubt that a  
12 number of panelists are willing and eager to further  
13 discuss a number of your key points raised. We are very  
14 grateful for your participation in today's New Millennium  
15 Research Council discussion on these topics.

16 I'd like now to introduce the moderator for  
17 today's event, Jon Peha. Jon Peha is Professor of  
18 Electrical Engineering and Public Policy and Associate  
19 Director of the Center for Wireless and Broadband Networks  
20 at Carnegie Mellon University. Dr. Peha has been a member  
21 of the technical staff at SRI International, AT&T Bell  
22 Labs, and Microsoft. He has served on the legislative  
23 staff in both the House and Senate, focusing on  
24 telecommunications and e-commerce.

25 Let me now turn it over to Dr. Peha. Jon?

1 DR. PEHA: Thank you, Allen.

2 I'm Jon Peha. As you heard, I am a Professor of  
3 Electrical Engineering and Public Policy at Carnegie  
4 Mellon. That also tells you that I started my career  
5 really as an electrical engineer and then an engineering  
6 professor, but I spent the last dozen years sort of  
7 bouncing between policy and technology, which brings me to  
8 issues like this, which is really both. I also sometimes  
9 get to translate between technology speak and policy  
10 speak. So before we get started, since I don't think  
11 there are many engineers in the room, let me set the stage  
12 in one sense.

13 If a bunch of engineers were to go out and  
14 design a brand new system, starting from scratch, for  
15 emergency responders nationwide, interoperability would  
16 not be among the serious problems we would face. There  
17 would be other challenges, but this would not be a  
18 problem.

19 As many of you know from experience, as you will  
20 hear later today, it is a problem. It is a complicated  
21 problem. And as many of you know from experience, one of  
22 the best ways to get a really complicated is to tie it in  
23 with government policy. So government policy helped get  
24 us here, and I also mean government policy can help get us  
25 out. So I am really glad to see turnout from a variety of

1 different places within the government. The commercial  
2 sector is also going to play a very important role.

3           So with that, let me tell you how today is going  
4 to go. We are going to have three panels. The first  
5 panel is going to talk about the problem. The second  
6 panel is going to talk about some of the technical  
7 solutions and their implications, and the third is going  
8 to focus more on policy options for the future.

9           In this first panel, actually we first asked all  
10 of the panelists other than me -- I got out of this -- to  
11 do something very hard which we will just call "three by  
12 three," that is to make three points in three minutes,  
13 everyone on the panel. After that, I'll be asking them a  
14 few questions, and maybe at the end we'll have a little  
15 time for some questions from the crowd.

16           So with that, let me introduce our very  
17 distinguished panel.

18           David Boyd is here, who is the SAFECOM program.  
19 This is the Department of Homeland Security's program that  
20 is responsible for these interoperability issues.

21           Tom Tolman is from the University of Denver, who  
22 is Program Manager and Principal Investigator for  
23 Communications Technology in the National Law Enforcement  
24 and Corrections Technology Center. He was also formerly  
25 Director of the National Public Safety Telecommunications

1 Support Office. This is a federation of major public  
2 safety associations, which is also a useful perspective to  
3 bring.

4                   We have Don Lund from the University of New  
5 Hampshire who is a Research Associate Professor and the  
6 Director of ATLAS, the Advanced Technologies in Law and  
7 Society project there. He is an applied sociologist and  
8 has done work on these interoperability issues, as well as  
9 incident command structures and crowd management  
10 solutions.

11                   Sal DiRaimo, Principal Engineer from the New  
12 York State Technology Enterprise Corporation, and he has  
13 worked on many public safety wireless communications  
14 projects for New York State and for municipalities,  
15 including right now the statewide wireless network  
16 project.

17                   On the panel, but remotely, is Viktor Mayer-  
18 Schoenberger.

19                   That completes the first panel. I will  
20 introduce the others on the next panel.

21                   Oh, I am sorry. I missed Bill Jenkins from the  
22 General Accounting Office who is Director of the Homeland  
23 Security and Justice Issues at GAO and just completed some  
24 important reports and has testified on the issue of  
25 SAFECOM and interoperability.

1                   Let me start by asking the panel -- there is a  
2 lot of competition for our attention and our resources.  
3 What evidence is there that lack of interoperability is a  
4 real threat to first responders or to the public in  
5 general? Do we know that this is a minor inconvenience or  
6 a major problem? Who would like to take the first one?

7                   DR. BOYD: Well, I think the importance of the  
8 problem is fairly obvious, and I think probably the  
9 easiest thing to point to is the Twin Towers. When the  
10 first tower collapsed, it also destroyed most of the  
11 communications capabilities for the New York fire  
12 department. Because they lacked interoperability, the  
13 police system, which was functioning, could not  
14 communicate on fire department frequencies to alert fire  
15 personnel that they needed to evacuate the second  
16 building. So police got the warning; fire personnel did  
17 not. So there is a clear issue of safety of life  
18 associated with interoperability, and to the extent that  
19 they cannot communicate with each other among disciplines  
20 or in jurisdictions that are supporting themselves, lives  
21 wind up at risk.

22                   The second reason why it's important is that  
23 there's an incredible cost associated with this. For  
24 example, at the Twin Towers again, when urban search and  
25 rescue teams deployed -- and this is the case in most

1 cases -- the urban search and rescue teams are volunteers  
2 who are provided by local communities. When they arrive  
3 on scene, the way they normally establish  
4 interoperability, unless they happen to have the good  
5 fortune to have radio equipment that communicates, is  
6 either to bring extra radios -- and of course, there's a  
7 cost associated with that -- or the agency that they are  
8 coming to support needs extra radios -- and there's a cost  
9 associated with that -- to provide to the urban search and  
10 rescue team in order to allow what is often clumsy,  
11 primitive, and very clugy interoperability.

12 MR. DiRAIMO: Well, as far as interoperability,  
13 I'd have to examine what is the "why." Why does it exist?  
14 And there's a number of technical reasons for that and  
15 historical reasons. But I think one of the most  
16 significant reasons actually is we have thousands of  
17 police and fire agencies out there, and that is a historic  
18 consequence of the way we've done things. There's a good  
19 deal of parochialism out there, that these guys are heroes  
20 and they deserve a good deal of credit for what they do in  
21 delivering public safety services, but these agencies in  
22 many respects still have to learn how to get along. I  
23 think from the managerial level, that is probably the  
24 principal problem that needs to be dealt with.

25 As far as like on the engineering end, there are

1 transitions going on. The transition from the first  
2 generation of land mobile systems is still being  
3 completed, as a matter of fact, is just really kind of  
4 getting underway. By contrast, carriers delivering cell  
5 phone services to all of you have been doing it for many  
6 years and are probably going into their third generation  
7 now. So as a consequence, there's something of a paradigm  
8 shift within the engineering.

9                   On top of it all, the public has been giving  
10 even more and more demands for faster, better, more  
11 efficient delivery of public services.

12                   So all of that has come together, some  
13 parochialism, a transition in the technology, and ever-  
14 increasing demands by the public for more efficient, cost  
15 effective delivery of these services, that has resulted in  
16 people starting to notice that there are interoperability  
17 issues, which historically were really never part of the  
18 initial requirements in the first generation of the  
19 deployment of the technology.

20                   DR. PEHA: If anyone wants to add to that, fine.

21                   Let me actually back up. I set the stage a  
22 little, but I may make you repeat what you're going to do  
23 in your three by three. So let me stop here and I'll give  
24 everybody a chance to talk, and then we'll come back to  
25 questions.

1                   We've heard from you two. Why don't we move  
2 down from there and then you two can finish. So I think  
3 it's Don next.

4                   DR. LUND: Okay. So we're doing the three by  
5 three?

6                   DR. PEHA: Yes. Why don't you start that off  
7 and then we'll go back to questions?

8                   DR. LUND: I look at the interoperability  
9 problems from the point of view of the other apparatus  
10 that's involved in the interoperability equation. That's  
11 the apparatus that has two times as much hearing capacity  
12 as it does transmitting capacity. It frequently wears a  
13 uniform and has a badge and has an uncanny ability to  
14 translate the easiest commands into alphabet soup. We  
15 need to look at some side issues that aren't technical but  
16 do impact communication, which include the linguistic side  
17 of interoperability, that is, the use of different codes,  
18 the use of different descriptors for resources. In other  
19 words, we have no standardized resource nomenclature so  
20 that a town in New Hampshire may call that white boxy  
21 thing a rescue, while another town in New Hampshire would  
22 call it an ambulance. Those make for difficulties in  
23 communication. So we have these linguistic issues of  
24 codes and resource nomenclature. The description of a  
25 building in a fire or a law enforcement encounter, the

1 sides could be labeled 1, 2, 3, or 4. They could be  
2 labeled A, B, C, and D. It does make for difficulty in  
3 communication.

4                   On top of the linguistic, we have the culture of  
5 communications, in which we include those issues that my  
6 colleagues have mentioned, plus the breakdown of  
7 communication discipline. The breakdown of discipline,  
8 meaning that people are talking over each other or  
9 stepping on each other because they don't listen before  
10 they push the talk switch, is an important issue.

11                   Logistics of interoperability. The fact is that  
12 those portable radios run out of battery power at some  
13 interval, and one must plan for the replacement of those  
14 batteries as one interoperates.

15                   So those are my concerns. And my last concern  
16 is something I call the illusion of communication. It's  
17 the illusion that a message that has been transmitted, has  
18 been received and understood. Frequently, yes, you get  
19 your message out, but frequently it's not understood.  
20 There was a wreck of an Amtrak train, a derailment, in  
21 central Florida. The train happened to be the Auto Train,  
22 and when the sheriff's office in Putnam County got the  
23 message that there had been an accident, they were looking  
24 for a car-engine collision, not realizing until they had  
25 men on the scene that there were 14 cars derailed and

1 numerous injuries and some fatalities. So we have to be  
2 careful of this illusion that we have communicated when we  
3 get the message out because there is an issue of whether  
4 we've been understood.

5 DR. PEHA: Thank you.

6 Now, Tom Tolman?

7 MR. TOLMAN: We're doing our three points now?

8 DR. PEHA: Yes.

9 MR. TOLMAN: I'm going to make mention of three  
10 resources. However, the research has taken place, and you  
11 mentioned what is the history of this. This goes back  
12 actually to the '80s. The split or the interoperability  
13 problem began in the late '80s when the different vendors  
14 began what was called trunking systems. That's when the  
15 proprietary system development started its fork in the  
16 road. Up until that time, it didn't matter which brand.  
17 You could have any kind and mix and match any type of  
18 equipment. Granted, there's much different changes of  
19 factors today, and really, there's an interdependent set  
20 of factors.

21 Starting with the report, Congress had tasked  
22 the FCC and NTIA to go out and find the needs for the  
23 public safety community to the year 2010 and get back with  
24 this report, which they did in September of '96. These  
25 are the key points here. This is what was found.

1                   Fragmented spectrum in 10 different bands.

2                   And something else that hasn't been mentioned in  
3 a lot of circles is what's called the non-standard  
4 frequency spacing. The spacing of those channels in  
5 between are different. That's a technical issue.

6                   System access methods. For those of you in the  
7 cellular industry, there is CDMA, FDMA, TDMA, OFDM. There  
8 are different modulation schemes, different ways of  
9 accessing the systems.

10                  And a lack of coordination nationwide of  
11 interoperability channels and then spectrum was an issue.  
12 That was what launched the initiative to get the 700 band,  
13 which by the way, we don't have it yet, the 700 band, the  
14 24 megahertz of the broadcast channels.

15                  Jumping to another report -- and that's  
16 considered a foundational report. That was in '96. In  
17 '98 and '99, through the National Institute of Justice, we  
18 undertook a law enforcement study, got the attention of  
19 the FCC. They said, good job, boys. Let's keep going.  
20 Would you do a fire EMS study? And we partnered with  
21 another entity and said, yes, we'll do it. We polled  
22 3,000 agencies and I call it the \$300,000 slide. That's  
23 how much this report was. But this one slide.

24                  Even though this was done in '97, '98, and the  
25 first part of '99 with the fire EMS study, we have good

1 evidence that the groups that we work with, that while the  
2 percentages may have changed, the ratio really hasn't.  
3 This was it. Funding, number one. Then different bands.  
4 Then planning, which I'm sure we'll be talking about later  
5 on in the day here. Planning is an issue. Coverage  
6 capabilities. I was talking to Mr. Lund about the  
7 Vermont-New Hampshire chase that took place in '96 and  
8 '97, and there was loss of life there. There was a  
9 coverage problem. There were other factors.  
10 Institutional barriers was our '90s word for egos, turf  
11 battles, and territory. We'll be talking about technology  
12 today, and this has not changed. That is one of the top  
13 five barriers and impediments to interoperability.

14                   And the third source comes from a work that was  
15 done a little later called the NTFI, the National Task  
16 Force on Interoperability, where they identified five key  
17 challenges: incompatible and aging equipment, limited  
18 funding. There's that common denominator again, which I'm  
19 sure we'll be talking more about today. Limited and  
20 fragmented coordination, and I would love to go on but in  
21 the interest of time will stop there.

22                   DR. JENKINS: Well, our approach to this and  
23 what we've looked at is really not technical. The first  
24 point I'd like to make that we've made several times in  
25 testimony is that it's important to remember that this is

1 not really a technology issue. In order to deal with  
2 this, it's a peoples and processes and technology issue.  
3 Other folks have pointed out some of both the people and  
4 technology problems that have occurred. I think it's  
5 important to remember that interoperable communications is  
6 not an end in itself. It's a means to an end and it's one  
7 means of allowing first responders to respond to  
8 incidents, particularly major incidents, that require  
9 multiple disciplines and multiple jurisdictions with well-  
10 planned, coordinated, and effective actions to mitigate  
11 the impact of those events.

12                   That leads to the second thing, which is if  
13 there is not an agreement on how you're going to operate,  
14 it doesn't matter what the technology is. In our view one  
15 of the key issues here has been unwillingness of multiple  
16 jurisdictions to come together and develop and agree upon  
17 an incident management command system and structure. In  
18 no place does that show better than in New York, which is  
19 still struggling with that, as to who is going to have  
20 primacy, the police or the fire department in HAZMAT  
21 incidents, for example. That's still a major battle in  
22 New York.

23                   Different nomenclature is a huge problem. It's  
24 something that's relatively easy to fix.

25                   The other thing is what has been mentioned,

1 which is the jurisdictional issues. The jurisdictional  
2 issues are considerable, and in particular, as New York  
3 showed -- and it is clear here in D.C. as well -- an  
4 ability of jurisdictions from different States to come  
5 together. One of the big issues that stands in the way of  
6 getting incident command structures together is  
7 memorandums of understanding about liability, about what  
8 happens if your guys go into another jurisdiction. So  
9 that also affects the ability of them to agree on an  
10 incident command structure.

11           In our view the technology flows from an  
12 effective incident command structure and the operational  
13 structure in which you're going to use the technology.  
14 That has to precede buying the toys. So from our  
15 perspective, one of the key problems has been and  
16 continues to be the inability of people to put aside egos  
17 and address this on a regional basis, not a stove pipe  
18 basis, which has been the traditional thing. Police  
19 develop theirs. Fire develop theirs. And it is one of  
20 the reasons people can't talk to each other. So from our  
21 perspective, that is the key, fundamental barrier to be  
22 able to achieve interoperable communications. It's not  
23 technology issues so much as it is a people and processes  
24 issue.

25           MR. MAYER-SCHOENBERGER: Let me, if I may, jump

1 in here. Good morning, everybody. My name is Viktor  
2 Mayer-Schoenberger, and I'm calling in from the Kennedy  
3 School of Government over here in Cambridge,  
4 Massachusetts.

5 We have been doing work on interoperability for  
6 the last five years, originally part of the executive  
7 session on domestic preparedness.

8 There are three main points that I'd like to  
9 make. One is that whenever you look at the last 20 years  
10 of interoperability challenges, you think that history  
11 loops. Every time you have a big disaster or catastrophe,  
12 a terrorist event, from 1993, the World Trade Center,  
13 Columbine High shootout, Oklahoma City bombing, Amtrak  
14 derailment in Arizona, Florida forest fires to 9/11, every  
15 time you have a blue ribbon panel at the end recommending  
16 that more interoperability is desperately needed, then  
17 some interim measures are being taken and then everybody  
18 goes back to the usual routine. And then everything  
19 starts all over again at the next incident. We need to  
20 break out of that history loop problem, number one.

21 Number two. There is a technological problem  
22 that can be solved and has been solved in many other  
23 countries. There is a public policy problem that has to  
24 do with frequencies and standards, budgets, money, and  
25 that needs to be addressed. There are a number of

1 collective action issues involved in the public policy  
2 problem, and this is a harder problem than the technical  
3 problem.

4                   And there is a third group of problems. That  
5 has to do with the organizational issues within first  
6 responder agencies. That's what I'd like to call the  
7 intragency hurdle, a reluctance of agency leadership to  
8 lose the bottlenecks of communication control, give up  
9 communication hierarchy, these type of issues.

10                   So the second point is technology is not the  
11 major issue, but we have public policy issues and we have  
12 organizational issues.

13                   My third point is that in order to solve the  
14 issues, we need to understand that they are linked  
15 together. So certain technologies or technological  
16 solutions may empower us to come up with novel ways to  
17 finance it. We cannot tackle these challenges, whether  
18 they are public policy challenges or organizational  
19 challenges or technical challenges, independently from  
20 each other. We need to understand that they are linked.  
21 So some technologies using some frequencies and standards  
22 may empower us to overcome the budgeting problem or the  
23 financial problem or may help us overcome organizational  
24 reluctance hurdles.

25                   DR. PEHA: David, do you want to do your three

1 by three?

2 DR. BOYD: Let me make a couple of, I think,  
3 really quick pieces.

4 The first one is that Dr. Lund noted that there  
5 are a number of other side issues. We don't think those  
6 are side issues. We think they're central to what we have  
7 to do to resolve this.

8 When we executed the RapidCom program, which was  
9 an initiative directed by the Secretary to try to  
10 strengthen interoperability in the 10 highest threat urban  
11 areas, it became very obvious to us early on that the  
12 technical capability to establish interoperability already  
13 existed in most of these cities, but it had not, for the  
14 most part, been implemented. Sometimes equipment was  
15 still in boxes. Sometimes it was set up but no radios  
16 were attached to it. Sometimes it was set up, radios were  
17 attached, and nobody knew how to use it and they hadn't  
18 planned for how it would happen.

19 So in order to help communicate to people what  
20 it takes to achieve interoperability, we developed what we  
21 call the interoperability continuum, and it provides for  
22 five different tracks that we believe have to be pursued  
23 on a parallel basis. You have to move them all forward at  
24 the same time. Only one of those five is technology.

25 The others are how often do you actually use it.

1 The degree to which you use this, ranging from the very  
2 earliest level where you may have it but you do not use it  
3 at all, all the way out to continuous daily use as part of  
4 your normal operations.

5                   We talked about the development of standard  
6 operating procedures. That's how are you going to do  
7 this. How do people call for it? How do the different  
8 agencies that are involved work together, and how do you  
9 arrive at agreements on things like language and procedure  
10 and how you communicate those things?

11                   A third one is what we call governance. It is  
12 the toughest of all of the things to do. Governance is  
13 that piece that says how do I deal with other  
14 jurisdictions and other disciplines and how do we create a  
15 process that gives all of them an incentive to be a part  
16 of this solution to want the solution to happen and to  
17 help work it together.

18                   Then finally we looked at exercises and  
19 evaluations because you have to actually get out. You  
20 have to train to it. You have to exercise. We found  
21 communities whose exercises amounted to putting the radio  
22 systems in the field and saying, "you hear me. Is it  
23 okay? Is the signal good?" Not serious exercises that go  
24 through to identify things like if I call for a HAZMAT  
25 team, do I know what I'm going to get. Am I going to get

1 a pickup truck with two guys and kitty litter, or am I  
2 going to get a real HAZMAT squad? And how do I make sure  
3 that we communicate in ways that insist that we can  
4 understand all of those things?

5           The history that put us where we are now will  
6 also suggest that the notion that this is going to happen  
7 in two or three years, the notion that three years after  
8 2001 we could have interoperability is bizarre. Let me  
9 stay that again. It is bizarre. And anybody who imagines  
10 that could have been accomplished in three years knows  
11 nothing about this subject or this field.

12           The Defense Department, before I was  
13 commissioned a brand new second lieutenant -- before I was  
14 commissioned a brand new second lieutenant -- decided that  
15 it was going to become interoperable. That is four  
16 departments within one larger department, supported by  
17 essentially one congressional committee, with a budget  
18 system where you could actually direct things to happen.  
19 I retired from the Army, after full career, a little over  
20 12 years ago, and the Defense Department is now almost  
21 interoperable.

22           This community has 60,000 agencies. Every  
23 single one of these agencies is sovereign, and every chief  
24 of police sees himself as the chairman of the joint chiefs  
25 of staff in his community, and every fire chief disagrees.

1 (Laughter.)

2 DR. BOYD: It's important to understand what we  
3 are talking about. We are talking about an installed base  
4 that goes beyond the numbers in here. We're talking about  
5 an installed communications base paid for, 99-plus  
6 percent, by localities and States to the tune probably of  
7 \$60 billion or \$70 billion, conservatively estimated. It  
8 is going to take us a while to bring this together.

9 So what we ought to be focusing on is how do we  
10 achieve these near-term things, which we can probably do  
11 in three or four or five years in principal areas and  
12 cause that to happen elsewhere, while we develop a  
13 strategy that will allow us at some point out to get  
14 there.

15 Let me say it again. Anybody who comes to you  
16 and says I have the solution, just do as I tell you and  
17 we'll have interoperability in three years has no idea  
18 what he's talking about.

19 DR. PEHA: Sal?

20 MR. DiRAIMO: Yes, Jon. In terms of public  
21 policy and interoperability, I think David has actually  
22 said it quite well. There is no near-term solution.  
23 There is no silver bullet, and that's just something that  
24 is a consequence of the way things are, some 60,000  
25 agencies. And in a former life of mine, actually I was at

1 General Electric in the late '80s and early '90s.

2                   When we took on the first Gulf War, I remember  
3 there were a number of issues that were still going on in  
4 terms of interoperability among the services at that time.  
5 I think the formation of a number of joint program offices  
6 and other initiatives that started quite a few years, even  
7 before the first Gulf War, have progressed very well and  
8 it's quite commendable. I think the military has started  
9 to really become quite interoperable. And that is a  
10 command structure that is very linear.

11                   To David's point, you've got 60,000 chiefs out  
12 there and it's going to be very, very difficult to break  
13 that with a silver bullet in the near term. It's just not  
14 going to happen.

15                   We've talked about a number of things, and I  
16 think this has been a very good discussion to point  
17 because it isn't about the engineering. Interoperability  
18 is not something that is kind of lurking on the next  
19 patent or IPR or great innovation. It's really, as far as  
20 public policy is concerned, a mix of things, not the least  
21 of which is getting these barriers broken down. That can  
22 be done with public policy. It has to be innovative and  
23 far-looking.

24                   I will call that my three minutes.

25                   DR. PEHA: Let me go back to the problem a

1 little bit. Now, we heard David Boyd talk about the  
2 problem on 9/11, which was horrific, and we heard  
3 Congressman Stupak talking about some future major  
4 disasters and the extent to which we are or are not ready.  
5 One might get the impression from that that we need an  
6 event of 9/11 magnitude for these sorts of issues to be a  
7 threat to public safety. Would anyone care to comment on  
8 whether that is the case? Tom and then David?

9 MR. TOLMAN: Your assessment is absolutely  
10 right, and this is a common phrase for those of us in a  
11 relatively small circle. Compared to the industry of  
12 communications, public safety is not the big fish compared  
13 to some of the other telecommunications giants.

14 Yes, it always seems to take a disaster to move  
15 things along. Dr. Boyd and I were talking about this  
16 earlier. This work has been going on before, certainly  
17 before 9/11, and again, with incidents like the Oklahoma  
18 incident, it always seems to take an incident or a  
19 disaster to push or move things along.

20 Along with that, though, is a bell curve of  
21 opportunity. We also know that this has some political  
22 value but has technological value too in that there is a  
23 bell curve process here. It's on the lips and minds of  
24 everybody, but will it be five years from now? We know  
25 that there are changes going on. There are improvements

1 that we will be talking about certainly later in the day.

2 But I would add to that that, yes, historically  
3 not always, but more often than not, it seems to take a  
4 disaster to get these issues up no matter what it is.

5 DR. PEHA: A very important point. Not only do  
6 we need an event like that to get us started, but if there  
7 is not an event of 9/11 magnitude, are these issues that  
8 we no longer have to worry about? Are smaller events also  
9 significant enough that they are worth our time and  
10 attention of the people in this audience, or is it going  
11 to take another 9/11 event for these issues to be a threat  
12 to public safety?

13 DR. BOYD: Let me suggest that there's a common  
14 misunderstanding in many respects about interoperability,  
15 that it's something that applies in a major terrorist  
16 event. The fact is that interoperability isn't going to  
17 work, the equipment isn't going to be useful, people  
18 aren't going to know how to do it unless these are things  
19 they use in daily operations. That's one of the things we  
20 put on the continuum.

21 You have to think about solving interoperability  
22 as a solution to everyday kinds of operations. In fact,  
23 we put together a statement of requirements which goes  
24 through all of the kinds of events and the information  
25 requirements, the communications requirements that the

1 State and local folks believe will apply all the way from  
2 something as mundane as a routine traffic stop up to a  
3 massive catastrophic explosion in a chemical plant and  
4 what will be required to do that. Because one of the  
5 first things we needed is a definition of what it is we're  
6 talking about. What is it we're trying to fix?

7 Tom Tolman is exactly right. This is really not  
8 new. Many of us have been working on this for some time  
9 now, and in fact, I've funded several of the folks at this  
10 table in my previous life at the National Institute of  
11 Justice.

12 In 1993, when I first proposed that we ought to  
13 do something about interoperability, the response I got  
14 from my political boss initially was interopera what?  
15 Fortunately, he was willing to say, okay, if you think  
16 it's really important, go ahead and try that. We  
17 nevertheless had to scrape money out of other programs.  
18 There was no money for it, no money with Congress, no  
19 money from anywhere to do this.

20 There's a fundamental difference now, and it's  
21 largely because of 9/11 frankly, and that is, there's a  
22 national program in the SAFECOM office. There's a new  
23 office being created in the Department of Homeland  
24 Security, the Office of Interoperability and  
25 Compatibility, the first two times those kinds of things

1 have ever existed at that level to bring that kind of  
2 focus.

3                   Since 2001, some \$280 million has been invested  
4 in grants to localities specifically for interoperability.  
5 Some \$85 million in grants will come out of the COPS  
6 office in the Justice Department this year, and the Office  
7 of Domestic Preparedness estimates that about \$1.2 billion  
8 of the some \$12 billion or \$13 billion in State block  
9 grants have, in fact, been used for interoperability. So  
10 there's been a lot done, more frankly than at any other  
11 point in history.

12                   From the early period, in the first period that  
13 I was involved in interoperability, we had to scrape money  
14 out of other things. For the first time, it's here.  
15 Congress has had multiple hearings. There's a  
16 presidential management initiative for the first time in  
17 history on interoperability, the SAFECOM program.

18                   But there's a tendency to imagine that it was  
19 created today, the problem should be fixed tomorrow. The  
20 answer is it's not going to happen that quick. I dearly  
21 wish I had a magic wand and could do that, but this thing  
22 is much larger and much more complicated than that.

23                   MR. DiRAIMO: A couple of quick comments on  
24 public policy and whether or not it can be fixed  
25 overnight. There's a great deal of concern as to whether

1 or not you can break down these barriers that really do  
2 exist and how can you do it. The challenges are there,  
3 but we should bear in mind that all of these organizations  
4 do have a very succinct command structure. The chief does  
5 get people in line if he's the chief of the PD or the  
6 chief of the fire department. Being middle aged, I'd like  
7 to think that there's still a spark in me that believes  
8 that everything doesn't have to be cynical in terms of  
9 solutions, and it doesn't have to be another 9/11 in order  
10 to try to get things fixed, which incidentally hasn't  
11 fixed a whole lot because a lot of those guys are my  
12 clients, like NYPD and the Port Authority PD and FDNY and  
13 MTAPD.

14 I talk to a lot of those guys, especially guys  
15 in the lower precincts in Manhattan. As their radios did  
16 work, they were using some of the best interoperability I  
17 know of, and that is seeing fire fighters going up the  
18 stairways as they were going down, telling them that they  
19 had an evacuation notice. I hate to admit it, but I think  
20 to some degree there's a sort of machoism or something in  
21 there that kept those guys ascending even though FDNY's  
22 system had been put out of service. That's pretty good  
23 interoperability: two guys talking to each other in a  
24 stairwell. Despite what a lot of people might think about  
25 the City of New York, I think they all did speak the same

1 language and therefore did have good interoperability.

2                   So there are things there to break down in terms  
3 of the organization. So how do you do that without a  
4 disaster? And that's where I have some, again, spark that  
5 is somewhat idealistic in that you can have policy and  
6 develop public policy that encourages the people making  
7 decisions as to how they're going to implement these  
8 services to their clients, which is ultimately the public  
9 in an efficient way that's going to keep their job, that's  
10 going to get them reelected, that's going to get them a  
11 successful department. To a great extent, technology can  
12 be applied that can help economy of scale where agencies  
13 can actually share systems, where agencies can be  
14 encouraged to develop those standard operating procedures  
15 ahead of time so that they are comfortable with them. And  
16 as that develops, there's an inertia that can happen, I  
17 believe, that from the top down their management will make  
18 it known to the rank and file that they will cooperate  
19 because if that doesn't come from the top down, they won't  
20 cooperate.

21                   MR. TOLMAN: One quick factoid. With the 53,000  
22 or with estimates between 44,000 and 63,000 agencies and  
23 2.2 million public safety personnel, just one little point  
24 of perspective here. In our studies and our research, we  
25 discovered that 75 percent of the law enforcement agencies

1 -- and the number is more severe in the fire EMS  
2 perspective. The ratio is more severe. 75 percent of  
3 this nation's agencies have less than 25 sworn officers.  
4 95 percent, less than 100. If you could see this on a  
5 graph, you could see this in this report. It goes off the  
6 scale.

7                   The point is -- and it goes to your question  
8 there -- that we have the large scale incidents, yes, but  
9 there's a huge majority of a minority of small agencies  
10 out there that aren't in the know. I can tell you they  
11 are not in the know about the things that we're talking  
12 about. So they've been suffering from lack of sufficient  
13 knowledge in order to make good decisions.

14                   DR. LUND: There's another element to the system  
15 that we don't talk about when we talk about fire and  
16 police, and that's the dispatch function. In New York  
17 City, the dispatch function seems to be pretty well  
18 regularized. In New Hampshire, we have very many  
19 different models of dispatch, some joint dispatch centers,  
20 some mutual aid associations doing dispatch. We need to  
21 include those people in the dialogue.

22                   DR. JENKINS: I have a couple of quick comments  
23 here. I think in terms of the catastrophic catalyst I  
24 guess, my colleague here said that's typical of any public  
25 policy area. Congress needs something like that. It has

1 so many things on its agenda, it would have to have  
2 something that's pretty dramatic for it to begin to focus  
3 on that.

4 I think the other issue here is this incredible  
5 decentralization that has been mentioned. How many  
6 departments really have a lack of technical capacity  
7 because they're small, because in many cases in fire  
8 departments they're volunteer, in order to be able to do  
9 what is needed.

10 So there's an issue here that is very important,  
11 it seems to me, and that is a federalism issue. And  
12 that's not a political science issue. It's a very  
13 important issue of what is the role. We've backed into a  
14 very, very important public policy decision, and that is  
15 as a result of 9/11, the way that we have given money to  
16 -- we have determined, without doing so explicitly, that  
17 first responders are national assets because of the role  
18 that they have.

19 So the question becomes, if they are national  
20 assets, what's the Federal role in terms of developing a  
21 capacity of those assets? What is the role of the States?  
22 What's the role of the Federal government in terms of  
23 setting standards, evaluating the problem, et cetera?

24 That's a huge issue that has still not yet been  
25 resolved as to what those roles are and how much is going

1 to be required versus how much is going to be encouraged.  
2 And you do have a problem, as we'll probably talk about on  
3 the third panel, about how you develop a sort of balanced  
4 carrot and stick approach to this because if you don't  
5 have the buy-in from local first responders, then they're  
6 not going to use the solution. They can't have that  
7 solution imposed upon them. But it's an incredible  
8 governance structure issue that's very, very important and  
9 being able to find a way to break out of this traditional  
10 stove pipe approach to emergency communications. And it  
11 is an issue that we try to address in our report, to some  
12 extent, in our testimony. But it's not something that  
13 Congress has officially, deliberately, actively,  
14 consciously grappled with, but they're going to have to.

15 DR. PEHA: I heard an awful lot of issues there.  
16 Just a few I heard were spectrum is a problem. Funding is  
17 a problem. Nomenclature is a problem. Jurisdiction,  
18 organization, technology, governance, lack of exercises.  
19 I have more.

20 Let me see if I can narrow that down a little.  
21 I'm actually going to ask you about two things. I'm going  
22 to ask you about core problems, if I have to focus on the  
23 big ones. Maybe there are some easy ones. Maybe there's  
24 some low-hanging fruit where we can get the most advantage  
25 from the least work. Let me start with the latter. Are

1 there some that are a little simpler that, for that reason  
2 alone, we ought to be paying attention at this point?

3 DR. BOYD: I think there are some very near-term  
4 things that you can do. In the RapidCom program what we  
5 tried to do was to say, look, given what Federal programs  
6 may already be in some of these areas and given what they  
7 may already have in these agencies, how can we take what  
8 they've got now and make it much more effective. How do  
9 we help them get to interoperability with what they  
10 currently have? We think in the near term things that you  
11 can do -- quite frankly, RapidCom was probably about a  
12 120-day exercise in the 10 urban areas. Even there, we  
13 were able to achieve a great deal by looking at all the  
14 elements on the continuum I talked about earlier. That  
15 is, if we can help them identify the basic equipment --  
16 patch panels, gateway kinds of technologies are probably  
17 in the nearest term most immediately available, despite  
18 some drawbacks. They're spectrally inefficient. They  
19 require channels in both systems. Nevertheless, they  
20 offer you a near-term approach, but only if -- only if --  
21 you can provide the technical assistance to do all the  
22 things they need to do, that engineering technical  
23 assistance they need to actually get the systems up and in  
24 operation, and then more importantly, assistance in  
25 helping build the governance and all the other things.

1                   The State of Virginia asked us if we would bring  
2 what we call the SAFECOM model, the bottom-up kind of  
3 structure that we use, and help them develop a statewide  
4 plan that would have buy-in from all levels of government.  
5 We worked with them starting in one of the smallest  
6 communities we could find and working around to develop  
7 that model. That's working. It's being implemented in  
8 the State. We will now work with them to help with the  
9 rest of the elements of the implementation.

10                   But that plan puts a lot of emphasis on all of  
11 those other non-technical pieces on how do we develop the  
12 SOPs, how do we develop the agreements and the governance  
13 structure, how do we set up the exercises, how do we  
14 provide the training so that we can, in fact, milk as much  
15 interoperability as we can out of what we already have,  
16 because there's a lot of capability there, if we just  
17 stop, think it through, do some careful planning, and work  
18 out the essential agreements and standard operating  
19 procedures.

20                   DR. PEHA: Do you want to take that one or do  
21 you want to move on to the next?

22                   MR. TOLMAN: Now in public safety, the issue of  
23 public safety and interoperability has become a buzzword  
24 and a high-level subject. Two things have happened. And  
25 this goes to your answering the question.

1                   One is we see that there are initiatives  
2     underway to obtain additional spectrum. We know that  
3     process has started, and we'll be talking about the 700  
4     band that the FCC promised, but we don't have it yet. The  
5     public safety community doesn't have it. Another block in  
6     the 4.9 gigahertz spectrum and perhaps this one that we're  
7     all watching, and that's the Nextel decision, what comes  
8     down with that, because that's going to be a major  
9     reallocation of spectrum that will impact. The public  
10    safety community believes in the direction that we're  
11    looking at, it's going to be favorable because it's going  
12    to butt up against the 700 band and there are some  
13    advantages there.

14                   But the other driver is getting legislation, but  
15    the other driver is that the commercial sector, industry  
16    is in some areas starting to prick up and say, wait a  
17    minute, there's business opportunity here. So there are  
18    some products out there that are being developed, some  
19    additional patches, something beyond the ACU-1000. I'm  
20    not saying go out and get the patch, although we  
21    understand one brand has sold 1,500 of those that have  
22    been out there in the last four or five years. The point  
23    is that there are other technologies that are coming and,  
24    because of the issue, create the driver to make such  
25    things happen as software defined radio that we'll be

1 hearing about and other technological areas.

2                   So a regulatory push, but also the industry in  
3 some respects is starting to realize that there's  
4 opportunity there. This is what happened with what was  
5 called CDPD, the cellular digital packet group.

6                   AT&T, for example, had rolled out their analog  
7 system and said, what else is there? Is there a secondary  
8 market here? Oh, wait a minute. There's this thing  
9 called the public safety. Perhaps we can sell to them.  
10 So they did and it was not just AT&T. But it was a hit.  
11 It was slowly and cautiously received, but for those  
12 agencies who took it on, they were pleased with it in that  
13 moment. Now that CDPD systems are being shut down,  
14 they've moved on to general packet radio services and  
15 other more advancing technologies.

16                   DR. JENKINS: I would like to mention a couple  
17 of things, one I know that SAFECOM is working on. I don't  
18 know if it was deliberate that they put Dr. Boyd and me at  
19 the opposite ends of the table.

20                   (Laughter.)

21                   DR. JENKINS: We're not enemies even though we  
22 disagree on a few things.

23                   But I think one of the things he's working on  
24 that's very important -- and we think the sooner, the  
25 better -- is to develop a nationwide database of

1 interoperable frequencies and a common nomenclature for  
2 those frequencies that's readily available to all first  
3 responders across the country. First responders can talk  
4 to each other, but they don't know that they can talk to  
5 each other because you have different names for exactly  
6 the same thing. That's something that can be done  
7 relatively quickly and could have benefits.

8                   Another thing I think is very important that  
9 comes from what my colleague here said about the  
10 technology is that because, as we mentioned, we have so  
11 many of these small organizations among first responders,  
12 they don't really have an ability to assess what  
13 manufacturers are telling them. One of the really key  
14 roles that the Federal government or somebody can play --  
15 but you need somewhere a consumer reports function that  
16 can provide objective technical assessment of the  
17 solutions that these first responders are being sold and  
18 someplace that they can go to get that assistance. That's  
19 part of what Dr. Boyd and ODP have done with regard to  
20 RapidCom, for example, and trying to take what they  
21 already have, how can you work and how can you put it  
22 together. Do you really need something new? Do you need  
23 one of these patching devices?

24                   I think with regard to why there's a perception  
25 that this problem can be solved quickly is part of it,

1 frankly, is the media. I saw a report just this weekend  
2 on NBC in which they said for \$350 million, by buying one  
3 of the patching devices, you could solve this problem in  
4 six months. That was it. That was the solution. And why  
5 hasn't Congress provided the \$350 million to do this? As  
6 Dr. Boyd said, that just is such a breathtaking  
7 misunderstanding of the issue that it's really phenomenal.

8                   But there are things that can be done in the  
9 short term in terms of getting up and helping localities  
10 understand the degree to which they do have  
11 interoperability.

12                   I think the other thing that we make in our  
13 report that's very important -- I want to reemphasize what  
14 Dr. Boyd said. If you don't use this stuff regularly,  
15 you'll forget how to use it. It's like a foreign  
16 language. Therefore, whatever interoperability you use to  
17 respond to a beltway accident or overturn of a tanker  
18 truck, it's going to be exactly the same system except  
19 perhaps scaled with more jurisdictions that you would use  
20 for a terrorist event. So they're not different. They  
21 have to be interrelated and you have to have in advance  
22 the notion of how you're going to use that stuff. You  
23 can't make it up on the day of the incident.

24                   MR. DiRAIMO: Jon, I'll be glad to share my  
25 quick laundry list on how to get going in the short term,

1 I guess, in terms of public policy. We've touched on some  
2 of it here.

3  
4 I think one of the first things that comes to my  
5 mind is encourage standards. At the Federal level,  
6 standards can be encouraged in a number of ways, and  
7 that's also another item on my list and that is  
8 coordination. The agencies outside the Pentagon could  
9 coordinate their purchases better. If they coordinated  
10 their purchases better in a comprehensive way very similar  
11 -- I'm not necessarily saying it has to be the exact same  
12 model -- to ETSI -- the European Telecommunications  
13 Standards Institute, tries to get EU nations to coordinate  
14 their purchases along a number of telecommunications  
15 technologies.

16 Another thing that's particularly problematic in  
17 our State, given that we not only border Canada but in the  
18 tri-state region in lower New York, something like 10  
19 percent of the nation lives within 100 miles of the Empire  
20 State Building, and they're in a number of States.  
21 Another thing that would be very helpful in the short term  
22 is to get going on this 700 megahertz reallocation. It is  
23 an extremely tedious situation that the broadcasters are  
24 slow to migrate, which we've alluded to here, and many of  
25 those broadcasters are migrating to over-the-air

1 broadcasting very slowly and they only maybe reach 2 or 3  
2 or 4 percent of their entire broadcast audience over the  
3 air. The vast majority of their subscribers are on cable.  
4 Yet, this issue drags on and is becoming a real impediment  
5 to the deployment of new technologies in public safety  
6 communications.

7                   Another thing is funding and encouraging the  
8 purchase of systems with as much commonality and standards  
9 in the procurement as is possible, particularly on the  
10 infrastructure side. It's very easy for us to focus on  
11 the subscriber side, the handsets, the mobiles, and so  
12 forth. Yet, we forget that standardizing along the  
13 infrastructure side is the most promising. Again, we tend  
14 to dwell on, to some extent -- not here, but in the  
15 hinterland, there's a lot of concern about different bands  
16 and so forth, and yet, no one in here has any problems or  
17 even gives a moment's thought when they pick up their cell  
18 phone and place a call whether it's going from a Verizon  
19 phone to a Cingular phone to a land line. There's full  
20 interoperability on the carriers. That's accomplished in  
21 the backbone. That's accomplished in the infrastructure  
22 end.

23                   So I don't know, Jon, those would be my kind of  
24 laundry list of things that could be encouraged in the  
25 short term, but again, it's not a short-term set of

1 solutions but an implementation of policy as a start-up  
2 that will take a while to facilitate.

3 DR. PEHA: Great. I heard a lot of things I  
4 agree with in terms of things with faster return. One I  
5 didn't hear, which I will add to the list from my  
6 experience, is training. The more you need advanced  
7 technology to solve these problems, particularly in the  
8 smaller agencies, you get a 30-person police department,  
9 they could use a hand and probably get a lot of benefit  
10 from technical training.

11 Okay. I'm going to do something really cruel.  
12 I'm going to ask the hardest question and ask for short  
13 responses because we're running low on time. And some of  
14 those things I heard for low-hanging fruit sound pretty  
15 hard to me. Are there core issues that remain? What is  
16 the most fundamental thing that we have left to address,  
17 if it hasn't already come out in the discussion so far?

18 DR. BOYD: I think I would say, obviously,  
19 standards are a piece, funding is a piece, spectrum is a  
20 piece, but I'd say the toughest of all the pieces is  
21 helping the individual agencies that actually have systems  
22 to operate understand that interoperability has a payoff  
23 for them. That's probably the single hardest sell, and  
24 it's also the most important sell that we'll make. It's  
25 important to understand that localities own, operate, and

1 maintain more than 90 percent of the public safety  
2 wireless infrastructure in this country. So unless they  
3 believe this is a good idea and unless they want to play,  
4 nothing else is going to happen.

5 MR. DiRAIMO: To keep it short, Jon, yes, I'd  
6 have to agree with both Dave and Jon that probably the  
7 most important and useful thing that can be fostered in  
8 public policy would be to help, as NIJ has noted before,  
9 these agencies that are just a handful of officers or fire  
10 fighters with guidelines and training that immediately  
11 help them get wary of what is really their requirements,  
12 how to spec them out, how to procure things properly.  
13 That's probably the best thing in the sense of training,  
14 as well as know-how and guidelines, that could really help  
15 things in the immediate sense.

16 DR. LUND: I would add that we need to have a  
17 more expansive view of the first responder community to  
18 include those who might be involved in bioterrorism and  
19 other specific events so that they are included in the  
20 dialogue.

21 MR. TOLMAN: I would agree with one of the  
22 points that David Boyd was making about they've got to  
23 want to, they being the industry. You've got to have that  
24 driver in place. Why should they manufacture standards?  
25 The P25 process, which NIJ continues to fund, has taken 12

1 years to get the first part, one of five in this suite of  
2 standards. Now, fortunately, they went after the flagship  
3 piece, called the common air interface, which is very  
4 important -- and there are manufacturers, now that that  
5 suite has been completed and into what's called phase two  
6 now, coming out of the woodwork and coming out with more  
7 and more systems. But it has taken much too long.

8                   Contained within the opportunity and the need to  
9 develop standards is good. Yet, along with the bath water  
10 and the baby situation there, you throw down a standard  
11 and this -- like I say, I'm on that steering committee to  
12 make sure that they move along. They have a 9600 baud,  
13 let the data rate be 9.6 kilobits. Well, you drive a  
14 stake in the ground and now you're limited except if you  
15 make it a minimum standard and move on. Standards  
16 development needs to move along, and there are ways to  
17 change the paradigm, change the approach. There are ways  
18 to make that accelerate.

19                   DR. JENKINS: Well, I would sort of echo in a  
20 way a little bit way from what Dr. Boyd said. I think the  
21 single biggest challenge with the longest payoff, the most  
22 sustained payoff, is creating a governance structure by  
23 which you know who's going to be involved, what you're  
24 going to do. The reason that is so important is that  
25 developing interoperability is not a static thing. In

1 other words, it's not got it, that's it, I don't have to  
2 worry about it for the next 20 years. What is required  
3 for interoperability depends on changing technology, the  
4 changing events. So it's a constant process.

5                   You need a governance structure, an in-place  
6 governance structure, which everybody recognizes is legit  
7 that represents their interests, that they buy into. In  
8 terms of assessing a problem, what is it we need to do,  
9 what is the kind of maintenance, what kind of training,  
10 what kind of changes we need over time, that is extremely  
11 difficult to do, but over the long term is going to have  
12 enormous payoff. That governance structure cannot be in  
13 the City of D.C. It really needs to be a statewide  
14 governance structure, which is one of the things that we  
15 recommend in our report. That is extraordinarily  
16 difficult to do because everybody wants to play as long as  
17 they make the rules.

18                   In the end, though, if you don't have that,  
19 you're going to continue to have these problems. Nobody  
20 agrees on what the issue is, nobody agrees on how to  
21 approach it, nobody agrees on who should be involved, what  
22 the standards are, et cetera. So in the long run,  
23 establishing a good governance structure that has some  
24 sustainability over time is absolutely critical I think.

25                   DR. PEHA: I am going to expand on that just

1 slightly. I work in western Pennsylvania on this issue  
2 where the largest county happens to be Allegheny County  
3 which has 128 police chiefs, even more fire chiefs. As  
4 you're thinking about governance structure, imagine that  
5 you had in this city a different set of traffic rules in  
6 every neighborhood. You're in DuPont Circle and you drive  
7 on the right and red means stop. And then you go to Foggy  
8 Bottom, and you drive on the left, and red means go.  
9 That's essentially what we have. If we do nothing else,  
10 if we don't start thinking about this as a national  
11 strategy and a set of regional strategies that fit the  
12 national strategy, we'll go nowhere.

13                   With that, I'd like to open this up for  
14 questions. Please keep it short and identify yourself  
15 when you ask. Yes, sir.

16                   VOICE: I'd just like to hear what Dr.  
17 Schoenberger has to say. We haven't really heard from him  
18 since his opening.

19                   DR. PEHA: Good point. I'm sorry. I forget the  
20 absent body. Dr. Schoenberger, would you like to get the  
21 last word of the panel then on the issues you've heard?

22                   MR. MAYER-SCHOENBERGER: Well, thank you very  
23 much. I was listening with great joy to hear so many  
24 excellent views on the problem. We certainly have, it  
25 seems, the capacity to tackle the issues, but

1 unfortunately, we don't have enough traction on the ground  
2 to solve them. What seems to me important -- and I'd like  
3 to stress that again -- is that some solutions that are  
4 available to us, technological solutions, some public  
5 policy solutions, and so forth, might help us in solving  
6 other issues as well. Let me give you an example.

7                   When the British government attempted to bring  
8 an interoperable network into being in the United Kingdom,  
9 they had no money. They didn't even have 9/11 that gave  
10 them a window of opportunity to have the public to fund  
11 the necessary equipment. So what did they do? They  
12 basically went to the private sector and had the private  
13 sector in a private/public partnership build the network  
14 infrastructure for a nationwide interoperable system for  
15 first responders and public safety organizations.

16                   Why could they do it? Well, they could do it  
17 because the standard they had picked before as a public  
18 policy issue, the TETRA standard, enabled call  
19 prioritization. So that meant that an infrastructure  
20 could be shared by many public safety organizations and  
21 public service organizations even, and in case of a crisis  
22 and an incident, automatically the system would vacate  
23 channels and therefore bandwidth and reallocate bandwidth  
24 to those that needed to communicate. That enabled the  
25 government to entice the private sector to build an

1 infrastructure for them and then to charge a monthly fee  
2 to the first responder agencies.

3                   First responder agencies in the United Kingdom  
4 love the system, by and large, because it means that they  
5 pay a monthly set, flat fee for using the infrastructure.  
6 That's something that they can budget much more easily  
7 than a one big replacement investment of infrastructure  
8 that they would have to make otherwise.

9                   So I wanted to again emphasize that solving one  
10 problem or selecting a solution for one issue might  
11 actually facilitate and foster the solution on another  
12 issue.

13                   DR. PEHA: Can you step to the microphone please  
14 and introduce yourself?

15                   DR. MERRITT: My name is Marilyn Merritt. I'm a  
16 linguist from the background of the communication end of  
17 things.

18                   I wanted to ask you to what extent these kinds  
19 of issues are related to the national system that we  
20 already have in place for dialing 911, for example, and  
21 also, to bring in the fact that we don't seem to have a  
22 national standardization for something like \*77 for  
23 calling on the road. These things are very much needed.  
24 I'm surprised by a sign, when you cross the bridge from  
25 Virginia into the District, saying if you see any

1 suspicious behavior -- and they give you this 10-digit  
2 number which has no pneumonic value at all -- please call.  
3 I'd like to know how many people are really going to call  
4 that number.

5                   So I'm interested in finding out more about the  
6 interface between what you're suggesting and the people  
7 who are actually going to be there besides first  
8 responders.

9                   DR. BOYD: Well, our focus is once the call is  
10 made, whether it's the 911 or \*77 or the 10-digit number,  
11 that the dispatch center now has to talk to the individual  
12 on the ground who's actually going to do things. At least  
13 in SAFECOM, our principal focus is on that part of the  
14 structure.

15                   There are a number of 911 initiatives currently  
16 working in Congress. There is, of course, the National  
17 Emergency Number Association, NENA, which is also very  
18 concerned with this issue. But our principal focus is on  
19 what happens once that call gets to the dispatch center.  
20 How now do we make multiple responding agencies able to  
21 talk to each other or multiple disciplines talk to each  
22 other?

23                   MR. DiRAIMO: I think you do have a good point,  
24 that we have concentrated our discussions today, as David  
25 said, on the interface to the providers, fire fighters and

1 PDs and so forth. The point is well taken that there also  
2 needs to be standardization for that interface from the  
3 public to those emergency services. There have been some  
4 initiatives. There have been a number of things that have  
5 been fairly successful, but they are slow-going on the  
6 regulatory end, not the least of which that's interesting  
7 is cellular 911 and location of a caller. I think it  
8 would be along the same point that you would be making.  
9 If you were making a call and you didn't know exactly  
10 where you were but you wanted to describe something in  
11 order to bring services to bear on it, where are you?  
12 That's been something that has been slow-going as an  
13 example, and it's unfortunate. But yes, you're right.  
14 There are a number of areas that also need to be  
15 concentrated on in the interface between the public and  
16 services.

17 DR. LUND: There was an obvious disconnect with  
18 the 911 operators in the World Trade Center situation.  
19 There needs to be a mechanism for dialogue to go in both  
20 directions.

21 MS. LIPOWICZ: Hi. I'm Alice Lipowicz from  
22 Congressional Quarterly.

23 My first question is for David Boyd. You  
24 mentioned three to five years being an unrealistic time  
25 line. I wondered if you could offer what might be a more

1 realistic time line for, say, getting 80 percent of the  
2 way there, or alternatively, in three to five years, where  
3 do you expect to be? Are we going to be halfway there or  
4 30 percent of the way toward this? Can you give us some  
5 time lines of your own?

6 DR. BOYD: It's important to draw two  
7 distinctions here. We know terrorists aren't going to  
8 wait, so there's a near-term requirement. That is, how do  
9 we achieve a level of interoperability that will support  
10 emergencies, say, the footprint of a Twin Towers, and  
11 allow at least the command structure to communicate, and  
12 how do we do that quickly? We think we can do that  
13 largely with gateways and the kinds of things we've been  
14 offering in RapidCom, and we think that can be executed in  
15 one or two or three years, depending on availability of  
16 resources. That's one of the cases where, if sufficient  
17 resources are available, you could probably do that in 12  
18 to 24 months. That's the near term.

19 The long term is how do you get to what we call  
20 full interoperability. What we mean by full  
21 interoperability is that we no longer have to ask  
22 questions about the patches and tying things together.  
23 But how do we arrive at a situation where there is enough  
24 commonality because of standards that protect both  
25 backward compatibility and address new technologies coming

1 on to the scene so that you could deploy an urban search  
2 and rescue team, it can arrive at the scene, and they  
3 could simply make an adjustment in their radios and they  
4 could communicate locally? That's the interoperability  
5 that's going to take probably 15 or 20 years or more.

6           Part of that has to do with how you construct  
7 the infrastructure, and part of that may, in fact, be  
8 picked up on a commercial basis, much as our caller from  
9 Harvard has suggested, although I would suggest that we  
10 ought to be cautious about some of the limitations of the  
11 United Kingdom example. They, after all, have 56 police  
12 agencies and fire agencies aren't in a hugely greater  
13 number. It's a bit different kind of structure.

14           Nevertheless, I think lots of alternatives need  
15 to be considered, including at what point can you off-load  
16 on to that structure. At what point can you go to IP  
17 technologies, which make a difference? But all of these  
18 will take some time.

19           A typical community sees its communications  
20 system as a massive capital undertaking. This is a big  
21 expense. It's typically going to take a bond issue.  
22 You're not going to get a community to sell its equipment  
23 and decide it's going to upgrade tomorrow to a new system  
24 when it's only had it in place for three or five or eight  
25 years. So, unfortunately, we have an environment where,

1 because of the cost of making the transition -- the  
2 technology life cycle, talking in terms of how long the  
3 technology lasts, typically is 20 or 30 years. The  
4 technology cycle is only 18 to 24 months. Now, those  
5 things aren't going to converge for a while. It's going  
6 to take time for that to happen.

7                   But it's important to make that distinction.  
8 The near-term interoperability, which we can achieve very  
9 quickly, I think within one to three years, depending on  
10 availability of resources, and then the long-term  
11 technology which is probably going to take 20 years or  
12 more.

13                   MS. LIPOWICZ: Thank you.

14                   And Mr. Boyd again or Mr. Jenkins, or whoever,  
15 you mentioned that the biggest problem that you see right  
16 now is getting a buy-in from the local police chiefs, the  
17 local fire chiefs. And what is it that they actually are  
18 needing to buy into? Do you have a standard set of  
19 criteria that you want them to buy into? For example, are  
20 you waiting for Hspd8, those benchmarks, to be developed  
21 where you will come in and say, we want you to be able to  
22 scale up communications to deal with these scenarios, that  
23 is what we want you to buy into? Or is it open-ended  
24 where you're asking them to buy into regional planning for  
25 communications without particular standards of what they

1 need to plan for?

2 DR. BOYD: All of the above.

3 DR. PEHA: Can I jump in? Let's see if we can  
4 keep this quick and have one last question. I think we're  
5 technically supposed to end this panel in two minutes and  
6 then move on to the next one.

7 DR. BOYD: I'd say all of the above. But the  
8 fundamental issue here is just getting them all to agree  
9 that it's important that they work together to do these  
10 things. That's why we think governance is so crucial.  
11 Each of the players has to have an incentive to be part of  
12 this. There is a natural tendency to say we'll create a  
13 national architecture and then we'll push it down. As  
14 Bill Jenkins pointed out, this is a Federal system. So  
15 let me suggest that our traditional way of looking at this  
16 as a pyramid with the Federal government at the top, State  
17 in the middle, and localities at the bottom is exactly  
18 backwards. Reality is you have to flip the pyramid on its  
19 head and you drive from the top the localities through the  
20 States to the bottom, which are the Federal players who  
21 will provide resources, supportive guidance. But those  
22 guys at the top have to buy in.

23 One of the ways I explain that to my staff is to  
24 remind them that there are no Federal agencies represented  
25 by any members of Congress. There are no local agencies

1 who have fewer than one Congressman and two Senators.

2 MS. LIPOWICZ: Thank you.

3 DR. PEHA: There are two questioners back there.  
4 So why don't we close out with you two and let's try and  
5 make the last ones a little quicker.

6 MR. MARGIE: I'm Paul Margie with the FCC.  
7 I just wanted to ask. Another interoperability-  
8 like question is the state of first responder and Federal  
9 emergency responder communications with hospitals and  
10 rural health care centers in something like a biologic  
11 event. So I wanted to ask your opinion of what you think  
12 the state of those communications are and what DHS is  
13 doing to improve them.

14 DR. BOYD: I guess that's mine again too.  
15 It varies and it varies dramatically depending  
16 on where you are. We maintain that interoperability has  
17 to go beyond the three basic elements of traditional  
18 public safety, fire, police, and emergency medical, and it  
19 has to include utilities. It has to include the  
20 sanitation and water folks. It's probably got to include  
21 the local transportation folks. If you think of a  
22 hurricane as a massive event that entails all of these  
23 things, then you begin to see those issues. So I would  
24 say how effective that communication is with the local  
25 medical facilities varies. New York is probably more

1 advanced than many places because they've been working  
2 with it longer. Other places, particularly when you get  
3 into more rural areas, some of that may not even have been  
4 considered in part of the plans.

5                   So DHS's effort is both an educational effort,  
6 which I think is a critical part of it, and then through  
7 the kind of grants that go in State block grants from the  
8 Office of Domestic Preparedness are funds that are going  
9 to the States which should be distributed against that  
10 kind of guidance. That's where things like Hspd8 and  
11 other things come into play.

12                   MR. DiRAIMO: I'll give a quick comment on that.

13                   I think you actually touch upon where next-  
14 generation communications is going in public safety in  
15 that even out there in the rural hinterland, as well as in  
16 highly urbanized areas, we've been fixating a lot of  
17 voice, but as we get into more and more issues in regard  
18 to such events as you describe and other catastrophic  
19 events and even into humdrum, everyday events such as  
20 heart attacks and so forth that first responders have to  
21 go to, there is an emerging emphasis on more and more data  
22 and telemetry. And as such, the Commission has actually  
23 been pretty good in its channel plan in 700 to include  
24 broader channels in order to help facilitate some of that,  
25 as well as identify some data channels. But I think one

1 of the results of this sort of requirements-thinking is  
2 the expectation that there will be more and more need to  
3 deal with telemetry and data.

4 MR. WERNER: My name is Charles Werner. I'm the  
5 Deputy Fire Chief from the City of Charlottesville,  
6 Virginia, and I'd be remiss if I didn't say the city  
7 chosen as the number one city in America.

8 I'd like to clarify your point about the Chair  
9 of the Joint Chiefs of Staff, and the reason the police  
10 chief is chosen as such is because he has a gun.

11 (Laughter.)

12 MR. WERNER: I'd like to thank you all for  
13 coming together and having this forum today because this  
14 subject is very near and dear to my heart and many public  
15 safety people.

16 I wanted to make a couple points and ask a  
17 question.

18 Number one, it's important that we don't focus  
19 just on terrorism because terrorism itself is one thing  
20 that comes. We have a couple big terrorism events that  
21 are about to occur and they're in the way of hurricanes.

22 You mentioned something about the problems, and  
23 I would argue that the problems in achieving  
24 interoperability today are 90 percent human. We have  
25 certain technologies. We have certain things that through

1 the incident command we can pull people together.

2 I'd like to share in Virginia I'm also with the  
3 Virginia Fire Chiefs Association, and we have moved with  
4 SAFECOM to help do a statewide program. And what you  
5 gentlemen have said is absolutely correct. There needs to  
6 be a statewide program that pulls everybody together.  
7 Just to share a quick experience, what it has done is  
8 brought different disciplines of people and elected  
9 officials together in one forum to understand what the  
10 issue is and how it can be solved jointly. And people  
11 learn from each other of initiatives that were underway  
12 that they had no idea were in existence.

13 So I would argue and request that SAFECOM be  
14 considered the method by which to do in every State. If  
15 you want to achieve the most bang for your buck, it's to  
16 do that in every State. And there are statewide  
17 interoperability executive committees under the FCC which  
18 could be charged to do that. But when you set your  
19 government's model, the reason SAFECOM is successful is  
20 because it is practitioner driven.

21 The last question that I have is for Dr. Boyd.  
22 Recently there's a group that's come forward that said  
23 interoperability and interference are a similar issue. Do  
24 you think it's unrealistic that they can both be solved in  
25 the same channel even though they equally need to be

1 addressed?

2 DR. BOYD: Now, that's really very much both a  
3 process and a technical issue. I like to treat them  
4 separately because interoperability has to do with  
5 communicating with each other. Interference is a  
6 different kind of issue. But obviously, if you can't  
7 communicate, then you can't interoperate either. So  
8 interference is a massive issue.

9 There are a variety of kinds of interference  
10 that we're experiencing now. Probably the largest, most  
11 complicated one causing the most grief to public safety,  
12 as Charles well knows, is the interleaving of cellular  
13 channels and public safety channels in the 800 megahertz  
14 spectrum where they are interleaved so tightly that  
15 intermodulation -- that is, the production of frequencies  
16 you didn't mean are interfering with each other because  
17 you've got lots of mixing in the air. That's a massive  
18 problem and one that desperately needs to be addressed and  
19 we think needs to be addressed very quickly because that's  
20 a case where, even if we had interoperability in those  
21 channels, the interference effectively destroys our  
22 ability, whether it's in an interoperable or in a non-  
23 interoperable situation, to communicate. The first  
24 responders have got to be able to talk in an emergency not  
25 just with each other but back to the kinds of resources

1 and the support that they need. And those radios are  
2 essential to them. And that voice piece of it, while data  
3 is a critical piece -- and our statement of requirements  
4 covers it -- as I know Charles would tell you in a  
5 heartbeat, is crucial because that fireman out there  
6 holding a hose with both hands trying to put out the fire  
7 ain't reading a PDA now.

8 MR. WERNER: Again, thank you gentlemen for  
9 coming together for this.

10 DR. PEHA: Let's reorganize for panel two.

11 (Applause.)

12 (Recess.)

13 DR. PEHA: May I have your attention please?

14 For the next panel the topic is Technical  
15 Solutions: What can be done and how much will it cost?

16 As before, or actually more so than before, I'm  
17 going to start in a minute by asking everyone to do a  
18 three by three on this new topic, but first let me  
19 introduce a new speaker who has entered the fray. George  
20 Ake is the Program Manager of the Capital Wireless  
21 Integrated Network program which has implemented an  
22 integrated voice and mobile data network for both  
23 transportation and public safety in the Washington, D.C.  
24 region, including Virginia and Maryland. He is also an  
25 assistant research scientist in the University of

1 Maryland's Civil and Environmental Engineering Program.

2 All right. Who would like to be first up? Tom,  
3 do you want to start?

4 MR. TOLMAN: Oh, I was hoping latecomers go  
5 first.

6 (Laughter.)

7 MR. TOLMAN: We're talking about technical  
8 solutions now.

9 DR. PEHA: Technical solutions. What can be  
10 done and how much will it cost?

11 MR. TOLMAN: Well, as I mentioned earlier in the  
12 previous session, the commercial services -- this is just  
13 the way it is. Again, public safety is not the big fish  
14 when it comes to how a business can be -- again, the AT&Ts  
15 and the commercial sector -- its focus is on  
16 communications technologies, although that ratio is  
17 changing, then working on public safety related  
18 technologies. It always seems to be and has been a  
19 secondary market, such as my reference to the CDPD, the  
20 cellular digital packet data, which actually did quite  
21 well, and now they're moving on to other packet related  
22 services.

23 The idea of camera phones. Again, it's out  
24 there. It starts out as a novelty, but from a marketing  
25 perspective in the industry, it's selling. Somehow, some

1 way those technologies will find their way out there in  
2 the aggregate part of the public safety communication  
3 medium.

4                   Voice is still central. Voice communication is  
5 still the central medium and will be for a number of years  
6 in the public safety arena.

7                   Certainly voice over IP, short messaging  
8 services, and multi-media services, what's called MMS,  
9 those too will find their way into the public safety  
10 services. It's already happening.

11                   Grand Haven, Michigan is the first city in the  
12 nation to have a citywide Wi-Fi broadband, NATO 211 A, B,  
13 and G system, the whole city. There are agencies that  
14 have come on in the Northwest, Seattle and Oregon, but a  
15 complete citywide. The point and the message here is that  
16 commercial services are, indeed, finding their way into  
17 the public safety community.

18                   I do not want to give a plug necessarily  
19 directly to Nextel, but we know that Nextel is providing a  
20 -- they started out with big industry network and then  
21 moved on to what's called a COGNET network which is being  
22 deployed around the country.

23                   My third point is that -- and I don't want to  
24 plug Motorola on this, but they have what are called the  
25 six levels of technology. Actually it dovetails well into

1 the new interoperability continuum and the technology bar.  
2 And that is dealing with six levels, swapping radios level  
3 one. And by the way, each one of these -- it's not to say  
4 that there's one answer here and one answer only, but this  
5 combination of features and capabilities is providing good  
6 services. Swapping radios. That's considered the lowest  
7 end on the six levels, and yet, agencies like NMFSI,  
8 Idaho, the fire services, that's exactly what they do and  
9 it works. It's still working well.

10 I mentioned Nextel which we heard did very well  
11 and was a big help during the World Trade Center  
12 situation. Arlington County, I understand, utilizes the  
13 idea or the concept of swapping radios.

14 But if you move up, what's called talk-around,  
15 the ability to talk around systems and not be limited to  
16 the limitations of systems.

17 Number three, mutual aid channels. We talked  
18 about that earlier, the idea of mutual aid channels being  
19 shared. The advantages there are it's less confusion.  
20 There are pluses and minuses in every level of this, but  
21 again, the point is that each of these have their place  
22 and have their value towards interoperability.

23 Number four, gateway patches. You heard me say  
24 earlier I attended a conference, an APCO conference, up in  
25 Montreal. Raytheon, who has bought the JPS Company who

1 sells and manufactures the ACU-1000, is now up to 1,500.

2 1,500 of those systems have been sold.

3                   Number five, level five, system-specific  
4 roaming. This is similar to what Sal DiRaimo was talking  
5 about earlier. Why can't we have the capability where we  
6 can roam and go across the country like we're able to do  
7 with our cell phones? There's no reason technologically  
8 why we can't do that.

9                   Sixth and the top of it is ultimately to getting  
10 towards standards-based systems. The process has been  
11 slow, but yet it's a goal and an objective that we can't  
12 steer away from. Standards-based systems are indeed what  
13 we need to get back to so that we can have it the way it  
14 was, much simpler in the '60s and '70s and up until the  
15 mid-'80s where you could mix and match systems.

16                   DR. PEHA: Thank you. I guess the next one, if  
17 we move along the table, is invisible. Viktor, are you  
18 there and ready to go?

19                   (No response.)

20                   DR. PEHA: Maybe not.

21                   MR. DiRAIMO: There are no green lights there.  
22 It doesn't look good.

23                   DR. PEHA: Well, thank you for that very concise  
24 presentation.

25                   (Laughter.)

1 DR. PEHA: George Ake?

2 MR. AKE: I'm glad to be here with you. You  
3 notice I'm not from Washington, D.C. with my language. I  
4 had 35 years in law enforcement as a North Carolina State  
5 trooper before I came here.

6 I think there are a lot of things we can do with  
7 the technologies here today. Tom has talked about all the  
8 different things. I've done the exchanging of radios and  
9 all those sorts of things, but I think there's a better  
10 way to do business. In the future, we have to look for  
11 that better way.

12 Our chair of the CapWIN executive board, Chief  
13 Ed Plaughter, who was the incident commander at the  
14 Pentagon, told me I want to talk to who I want to when I  
15 want to. I don't want to talk to everybody. We've played  
16 around with that in CapWIN. We have a voice system in  
17 CapWIN that we played with that will allow me to go to one  
18 individual using IP. Would I put my life on it today?  
19 No. Would I might be able to put my life on it in 10  
20 years from now? Yes. So there are a lot of things coming  
21 in the future.

22 The expansion of the Internet, all the  
23 technologies that are going on with the Internet. There's  
24 so much resource money being put into those technologies  
25 that public safety can take part of. We need to look for

1 those technologies.

2 I agree with my colleagues up here that the land  
3 mobile radio will be here for many years. I would say to  
4 you that at some point in time data and voice are going to  
5 converge. You're going to have a communicator where you  
6 can do your data and you can do your voice all at one  
7 time. Those things are coming and very much in the near  
8 future.

9 If you look at what's happening in the last  
10 three years with technology, it's changing so fast that I  
11 can't keep up with it. I don't know about you. We try to  
12 keep up in CapWIN. We're trying to look at the new  
13 things. We're trying to figure out what we can do with  
14 what we have based on the foundation that we built, and  
15 it's hard to do. There are so many new things that are  
16 coming. And we have to sort through those things, and we  
17 have to try to figure out which ones of those will bring  
18 the most benefit to public safety.

19 Information communications is critical in  
20 everyday life in public safety. I heard somebody say on  
21 the other panel -- and we take this position in our  
22 program -- that if you don't use it every day, it  
23 absolutely is no good. I've seen that in the field. You  
24 give some sort of device to a trooper. They don't use it  
25 every day and when it gets down to where it's really time

1 to get something done, he won't know how to use it. So we  
2 have to use this technology every day.

3 I thought I had seen traffic before, but you  
4 have a tremendous traffic problem. And if there's a  
5 jumper on the Woodrow Wilson Bridge that hangs it up for  
6 six hours, like happened several years ago, that's a major  
7 incident here in Washington, D.C. What we have tried to  
8 build this system to do is to deal with that, as well as a  
9 terrorist incident.

10 I want to say one thing before I move on. Early  
11 on we went to see Dr. Boyd and said this is what we want  
12 to try to do. He took that vision and went with us.  
13 Partnership is very, very critical. You can't build  
14 something like this and you can't get the technology  
15 unless you get everybody involved, and they have to have  
16 ownership in it. You can have the best system with the  
17 best technology, the best everything out there, but if  
18 people don't feel like they have some ownership in it,  
19 it's no good. That's my experience.

20 In CapWIN, we have local, State, and Federal  
21 people sitting down around a table making a decision of  
22 where we're going. There's an interstate compact between  
23 Virginia, Maryland, and D.C. The National Institute of  
24 Justice and SAFECOM have been tremendously helpful to us  
25 to move forward with that.

1                   So I want to add to the technology piece.  
2 Without the partnerships, without people working together,  
3 you can have the most whiz-bang thing you can ever have,  
4 but it won't work. People won't use it. We have to get  
5 away from this business "not invented here." I didn't  
6 invent it, so I can't play with it. We've got to get to  
7 the point where we say, hey, let's all sit around the  
8 table and work together.

9                   Technology has a lot of problems. Spectrum is a  
10 big problem. All the different problems that we've heard  
11 people talk about with technology is a big problem. One  
12 of the biggest problems is people need to learn to work  
13 together.

14                   Thank you.

15                   DR. PEHA: Thanks.

16                   Sal?

17                   MR. DiRAIMO: Well, in talking about solutions,  
18 I have to hedge that a bit because the engineer in me  
19 comes out and says, gosh, don't start talking solutions  
20 right away. I get questions from management all the time.  
21 I've got this problem, Sal. What is it I throw against it  
22 and it makes it go away? I have to kind of manage  
23 management very often and get them to understand that what  
24 we have to understand first is functionally what it is we  
25 want to accomplish and then take a systems approach to

1 implement the proper solution.

2                   So having said that, if what we're looking at is  
3 full interoperability as a functional requirement, which  
4 in itself doesn't say, well, then this will be brand X or  
5 this will be technology Y, then talking about solutions  
6 with that hedge, I think it's very important that we think  
7 about some of the things that are bandied about quite  
8 often such as, for example, everybody is on the same  
9 spectrum. Well, that's difficult.

10                   That's difficult for a variety of reasons, and I  
11 want to keep these comments brief. But not the least of  
12 which of those problems is agencies are all over the  
13 spectrum and to migrate into another band, the golden band  
14 that would save everyone and give them all the same  
15 frequencies, just that alone, the cut-over is impractical  
16 in terms of public safety communications because they  
17 can't afford a migration cut-over. It can't work a little  
18 bit here and there and it can't be an operational issue  
19 where, well, some guys have these radios. It's already a  
20 situation in many communities where people are walking  
21 around with two or three radios on their belt, and that's  
22 without some kind of an elaborate cut-over band-wise. So  
23 it's not practical.

24                   My distinguished colleague from DHS has  
25 mentioned gateways. Gateways, as David did characterize

1 it, is a near-term solution, but it kind of scares me  
2 there too a little bit, that it's not a total solution and  
3 not full interoperability. But gateways we would assume  
4 means that you've system Y, I've got system X, we want to  
5 have them interface in some way, so we'll connect them.  
6 It's not full interoperability, but it's a start. That  
7 limitation -- it's not full interoperability -- indicates  
8 that we're looking back at the requirement again, the  
9 requirement of full interoperability.

10                   So if I had to say any particular thing as a  
11 solution, yes, it might be if everybody was on the same  
12 system, but you have to be very careful with that. There  
13 are 60,000 agencies and they all need to have competitive  
14 procurements. To say they have to be on the same system  
15 would almost be like implying that someone is going to win  
16 some golden contract and, boom, there's a whole market  
17 that's captured by one manufacturer or consortium.

18                   However, going back to some of the things that  
19 we've alluded about standards and so forth, given the fact  
20 that public safety agencies should have their jurisdiction  
21 pretty much covered ubiquitously by their ability to  
22 communicate, their network, a solution that I see as a  
23 very good emerging solution to all of this in terms of  
24 full interoperability would be IP. IP is just great. It  
25 goes to the notion of a standard. It goes to the

1 backbone. That is to say, not the air interface concerns,  
2 and there have been a lot of concerns there and they've  
3 been rightly founded. But it goes to the idea that the  
4 networks are networks, and if they're going to interface  
5 on some commonality, they should interface on something  
6 that they can leverage well. There's probably nothing  
7 that's at hand that we don't see going away but only  
8 improving due to the leverage of a larger market out  
9 there, that being IP structures. So I'd like to see  
10 competitive procurements go on for multiple manufacturers  
11 as a solution that have truly opened IP interfaces inside  
12 the network itself.

13 DR. BOYD: Well, the first one I observe is that  
14 there are in fact a number of technically feasible  
15 solutions, but technically feasible doesn't mean they're  
16 things we necessarily want to do. Let me give you some  
17 ideas.

18 We can go to almost any of a variety of  
19 technologies that are produced by a variety of companies.  
20 You can name the company. But the answer is that most of  
21 these involve either different technologies or proprietary  
22 elements, which means they're not going to be backward  
23 compatible with existing systems, and we're not going to  
24 be able to change out our existing systems so rapidly that  
25 we can afford to replace it overnight with any of these

1 other systems, and they're not necessarily compatible with  
2 each other. And as Sal, I think, has made very clear, we  
3 don't want to tie first responder agencies to having to  
4 buy a single-company, single technology. Obviously, we're  
5 not interested in that kind of thing. We want to see  
6 competition in the marketplace.

7                   One of the other things that's important to  
8 understand is what it is that local agencies are going to  
9 demand no matter what kind of system you go to. They have  
10 to have absolute priority access, not just priority  
11 access, but the ability to preempt what's on it now. They  
12 can't afford to wait until a channel is available like you  
13 might do in existing cellular systems. And they have to  
14 be able to design coverage to cover their entire area of  
15 responsibility. Most commercial systems are driven  
16 understandably by economics. They provide that amount of  
17 coverage that can pay for itself. They provide that  
18 amount of overcapacity that they're likely to run into in  
19 rush hour, not in a major Twin Towers 9/11 kind of  
20 emergency. So most of these commercial systems collapse.  
21 They're not robust enough. They don't have the coverage  
22 that they require. They collapse too easily and cost  
23 becomes an issue. What's it going to cost either to put  
24 the system in or to pay for the system while it's there?

25                   The second piece of the question that we've

1 addressed is, how about going to other things that people  
2 often suggest? One is the common radio system. The  
3 problem with common radio systems is that we don't want to  
4 stifle innovation, not to mention even that would take a  
5 long time because there's a cost associated with it.  
6 We're not going to be changing all of these systems out.  
7 Our best estimate is that the current installed  
8 infrastructure -- and this is only an educated guess -- is  
9 in the neighborhood of \$50 billion or \$60 billion or \$70  
10 billion.

11                   Whatever we put in place, we're also going to  
12 have to think about the infrastructure, the support  
13 towers, and other things, and we frankly don't know  
14 exactly what that costs. In fact, we don't know how much  
15 interoperability we have now, which is why we have just  
16 closed a request for proposal to execute a baseline to  
17 make that measurement against the statement of  
18 requirements we produced, and we'll probably make an award  
19 on that in October. Then maybe we can give you some idea  
20 of what this actually might cost at some point in the  
21 future.

22                   Second, different systems on a common frequency.  
23 Well, that's cool except that you now have to move things  
24 around. So you're going to have to move things off  
25 existing spectrum, move others to it, and that increases

1 the cost as well. You're still going to have time  
2 involved in getting systems off and getting the  
3 infrastructure adjusted and paying for them.

4           Gateway systems are cool. Those are also  
5 useful, but they have limitations. They're spectrally  
6 inefficient. They require two channels, one channel on  
7 each of the two networks that they're combining. So while  
8 they're very good near term, probably the only reasonably  
9 one to three year kind of solution, they nevertheless are  
10 spectrally inefficient. However, given the transition  
11 costs, these are probably near-term solutions that will  
12 last 5 to 10 years even though we could probably put them  
13 into place very quickly. They will probably last some  
14 time.

15           Second is standards and are they workable. The  
16 answer is that standards are workable but the law dictates  
17 how these things come into place. Project 25 standards I  
18 think are a very good, very effective kind of approach to  
19 use, but there are a number of problems. One is that  
20 industry has not always been helpful in the development of  
21 those standards. The second one is that it's taken too  
22 long, as you've heard before, 12 years, to produce the  
23 first volume of a seven-volume suite.

24           So we're now working with APCO, because their  
25 greatest strength is that this is a practitioner-driven

1 organization. So we're now working with APCO to try to  
2 provide the kind of resources and support they need and to  
3 associate them with the National Institute of Standards  
4 and Technology so they can take advantage of those things.

5           There are, by the way, no SAFECOM standards.  
6 There's a SAFECOM statement of requirements and there is a  
7 SAFECOM standards process that we're putting into place.

8           Of course, the last issue is, what does it cost?  
9 Well, as I told you before, nobody knows. Nobody can tell  
10 you what it's going to cost to get there. All of the  
11 estimates you've probably heard, those from the old public  
12 safety wireless network, about \$18.3 billion, was limited  
13 to land mobile radios, what goes in the cars. The second  
14 one was an OMB estimate, \$15 billion. That also was a  
15 limited estimate based on what people had to offer. The  
16 Council on Foreign Relations task force, \$6.8 billion.  
17 I'm not sure what the origin of that is, but I know that's  
18 way too low to be reasonable. GAO was probably the most  
19 honest of all the reports at several billion, which is an  
20 accurate measure.

21           The other reason we don't want to go to a common  
22 frequency is that it's easy to imagine that if we could  
23 just put everybody on the same frequency, we'd solve the  
24 problem. Even assuming that we wouldn't have problems  
25 with the environmental impact statements and the "not in

1 my back yard" kind of issues in putting up the new towers  
2 and new infrastructure, the fact is that not only would it  
3 be extraordinarily difficult, it would take time to put  
4 everybody on one common set of frequencies. I don't think  
5 we'd want to because in fact spectrum is important to us.

6 Propagation characteristics in different bands  
7 are different. 400 megahertz tends to penetrate buildings  
8 better than most of the other spectra. The 700 and 800  
9 megahertz spectrum tends to provide very nice point-to-  
10 point kinds of communication, and 144 megahertz and below  
11 tend to offer better range and better opportunities to  
12 penetrate also some other interference issues. But for  
13 that reason, you need to have a range of spectrum in order  
14 to meet the requirements of the public safety community.

15 MR. TOLMAN: One quick tag-on comment. General  
16 Dynamics received a contract for \$245 million to begin the  
17 process of developing what's called a JTRS, joint tactical  
18 radio system. Actually it's a feasibility and then  
19 there's another intercessory phase to that. But on the  
20 subject of software defined radio, the idea of it doesn't  
21 matter what technology, what band, what frequency, what  
22 modulation scheme is a wonderful idea. We look forward to  
23 that. I think it has great promise.

24 However, there is one big barrier to that.  
25 Remember my reference earlier to 75 percent of the

1 nation's agencies on the law enforcement side has less  
2 than 25 sworn officers, the huge majority are small  
3 agencies. The idea of a \$10,000 radio just ain't going to  
4 make it. So that's up there and that's out there. Yes,  
5 will it have a future? It will find its way. But the  
6 idea of cost, which has been mentioned by all panel  
7 members, is a foundational factor in all of these  
8 technologies. Whatever the technology is, in order for it  
9 to be accepted and tried, the cost must come down.

10 I think that's part of the reason, not just the  
11 technology, what Sal was mentioning about the IP, voice  
12 over IP, radio over IP, a concept called mesh networking  
13 ad hoc networks, and any of these commercial services -- I  
14 agree that the IP, that's the place where the 1's and 0's  
15 and can cross no matter what the modulation scheme is.

16 But part of the reason that it's taking off --  
17 and it is taking off, and it will have a place in the  
18 public safety community -- is that again, those providers,  
19 those technological vendors are offering it without  
20 outrageous expense.

21 MR. HEPNER: Tom, I just wanted to interject for  
22 a second. I just want to press David and I guess the  
23 other panelists a little bit on that issue of estimated  
24 cost, just kind of following the theme of Congressman  
25 Stupak and being up on the Hill and trying to give a more

1 direct answer to constituents, which is what will it cost  
2 to achieve interoperability, understanding that that term  
3 is kind of nebulous too, full interoperability, partial  
4 interoperability, understanding David, that you mentioned  
5 the whole array of different groups that gave various  
6 estimates and that you don't want to rely on any one  
7 technology.

8                   The "but" that I keep coming back to is that if  
9 what I hear you saying is you want to focus on standards  
10 and adherence to SAFECOM requirements, which to me seems  
11 logical -- and then, of course, those can change over time  
12 -- doesn't there still need to be an estimated cost for  
13 interoperability that one could then deduce or presume  
14 based on evolution or modification to those standards and  
15 requirements over time? Isn't that what needs to be done?

16                   DR. BOYD: Yes, we agree. But in order to do  
17 that, in order to arrive at that estimate, there are some  
18 basic things that had to be done. We first needed the  
19 statement of requirements to define exactly what it was we  
20 were talking about. What we are now initiating -- we will  
21 probably initiate about the middle of October -- is an  
22 effort to take that statement of requirements and now  
23 measure where the nation is against that statement of  
24 requirements to establish what we call a baseline.

25                   The baseline does a number of things. One of

1 them is that it tells us where are now. No one can answer  
2 that question. There's no database you can go to, and you  
3 can't arrive at any cost figures that are anything but  
4 extraordinarily mushy until you suddenly have some idea  
5 where we are in order to measure what it will take to get  
6 there.

7                   The second piece of that, I think, is that this  
8 also then becomes a driver for helping us to understand  
9 where is R&D required, where are standards required, where  
10 is funding required to fix this because it's not just  
11 funding that's required to do this. The total installed  
12 infrastructure is very large, but you don't really need to  
13 fund or replace all of that to achieve interoperability.

14                   What you need to be able to do is to take this  
15 baseline and the statement of requirements and say, what's  
16 the gap between these two. That then begins to give you a  
17 really clear picture of what it's going to take to get  
18 there, and then you can actually provide more than swag  
19 guesses on cost. The best we can do now are swag costs.  
20 And I know why Bill Jenkins and GAO came up with several  
21 billion, and that is because there's no way to defend any  
22 cost estimate without the statement of requirements, which  
23 we now have, and baseline, which we are now trying to  
24 create.

25                   MR. TOLMAN: "Achieve interoperability." Boy,

1 how do you define that? When are you going to be able to  
2 cure cancer? I mean, the potential of the thing and who  
3 defines it, "achieve interoperability" -- and it does fall  
4 to the baseline standards. From an engineering  
5 perspective, just to give you some perspective, an agency  
6 says I want a system that will provide 95 percent coverage  
7 in my area. The vendor says, okay, that will cost X  
8 million dollars. Now, wait a minute. I want to improve  
9 that. I want to go from 95 to 97 coverage capability.  
10 There's a nonlinear, an exponential increase to go from 95  
11 -- I know Sal will certainly back this one up. To go from  
12 95 to 97 percent takes it off the page. Achieving  
13 interoperability perhaps can mean different things to  
14 different people.

15 I still think, back to our earlier session, that  
16 we are over the bell curve. That is, there's enough  
17 different types of improvements that are moving along that  
18 the worst of it is behind us.

19 One other thing, though, when technology  
20 advances and you come to rely or depend on more  
21 technologies, so you have another issue not  
22 interoperability, but the other "ability," vulnerability.  
23 About seven years ago, a satellite system called the  
24 Galaxy 4 just got out of orbit just a little bit, and it  
25 wreaked havoc. So I would submit to the movers and

1 shakers of this industry that we not only look at  
2 interoperability, but also as technologies expand,  
3 vulnerability.

4 MR. AKE: I'd like to add to that a couple of  
5 things. When you talk about costs, there are a lot of  
6 other things in that cost because if you do new  
7 technology, you've got to train folks, you've got to teach  
8 them how to use it. All that's got to be figured in this  
9 cost.

10 I remember when I first came to Washington, I  
11 went to a police department and a fire department in the  
12 city, and they said to me, look, this CapWIN thing is  
13 great. But guess what. We're not going to replace what  
14 we already have. We went to the City Council. We got  
15 millions of dollars to put this in. We're not going to  
16 replace it. You're going have to figure out how to make  
17 CapWIN work with what we have. I think that's the secret  
18 to this in the near term.

19 The long term may be IP kind of networks, and I  
20 believe that's what's coming. I believe you're going to  
21 have to use the Internet kind of technologies that are out  
22 there. I believe that's going to come. It's not going to  
23 come quickly, but it will come.

24 But we're going to have to let these folks use  
25 the technology they have today. If I was a police chief

1 or a fire chief and I went to my city council and I got  
2 \$20 million, as we did in North Carolina, to do a  
3 statewide system, and I go back to the general assembly  
4 three years later and say, guess what, it's no good  
5 anymore, I'm probably going to be looking for employment.  
6 So we really need to take that into consideration as we  
7 start moving forward.

8 DR. PEHA: As long as Allen is going to ask the  
9 questions, I get to jump in and answer one. I would make  
10 three quick points.

11 One is that the definition of interoperability  
12 is going to change anyway. We're struggling for voice  
13 interoperability at this moment, and a few years from now,  
14 that's going to be inadequate.

15 Second is that you can't ask how much something  
16 would cost when it is only one of the input variables.  
17 For example, if you allocate more spectrum, you can spend  
18 less money. If you allocate less spectrum, you will spend  
19 more money, and other things work that way too.

20 And third and perhaps most important, if we wait  
21 until we know exactly how much it costs to spend a dime,  
22 we will never get there. So we're going to have to make  
23 some best guesses and move forward.

24 MR. DiRAIMO: Jon, in response to that, you're  
25 very correct. It's not really possible to divorce oneself

1 from the functionality of interoperability and a complete  
2 system solution that satisfies all the requirements  
3 because requirements are so interwoven ultimately in the  
4 procurement and the system design.

5           If we wanted to take a temperature -- and there  
6 is no database of what it costs -- there are a few things  
7 that we can look at. The State of New York issued an RFP  
8 and got two consortiums to respond to it, one from Tyco,  
9 one from Motorola. The State ultimately entered in  
10 negotiations with Tyco. I can't mention or I can't detail  
11 what that is. However, for an ad hoc assembly committee  
12 hearing, Motorola was on the record that their bid to the  
13 State of New York was \$3.5 billion.

14           Another thing that is on the record in the  
15 public domain is the State of Florida went through a  
16 couple of twists and turns to procure a statewide system  
17 for their multi-agency users, and that's around \$1 billion  
18 ultimately.

19           The Congressman that spoke, the State of  
20 Michigan has -- as a matter of fact, one of the early  
21 systems to go in that wasn't multi-agency but was  
22 statewide, that system in Michigan is estimated reasonably  
23 at about \$500 million to \$700 million.

24           The State of Pennsylvania is in the midst of  
25 completing a procurement, and that's in the \$300 million

1 range.

2                   So there are 50 States. Just take the numbers  
3 that I just did and average them or take the mean. It's  
4 not \$18 billion. It's substantially more than that just  
5 on the back on the envelope.

6                   DR. PEHA: And let me ask you a follow-up on  
7 that. One of those States I know pretty well. When you  
8 give those numbers, what is it you are including and what  
9 are you not including.

10                  MR. DiRAIMO: Just a quick response to that. I  
11 tried to compare apples and apples in all of those  
12 examples, and in all of those examples, those were  
13 complete systems. Again because you can't really divorce  
14 oneself from interoperability versus a complete system  
15 solution, in those States that I just noted, those were  
16 for complete systems, not necessarily multi-agency, but  
17 complete systems.

18                  DR. PEHA: Complete infrastructure not complete  
19 handsets and the like, which can be most expensive.

20                  MR. DiRAIMO: Actually handsets to the  
21 infrastructure. And in the case of Florida, the  
22 infrastructure was \$700 million, and allow a typical one-  
23 third for the handset and subscriber --

24                  DR. BOYD: But it's important to understand that  
25 most of these are statewide systems which are, not in all

1 cases, fully multi-agency. There are lots of other  
2 agencies associated with it. More importantly, this  
3 refers to the cost of constructing a whole system and  
4 infrastructure not necessarily the cost of achieving  
5 interoperability, which we have a really tough time  
6 figuring.

7                   The approach that we're using is that we need to  
8 be moving now to make things happen and we're not waiting  
9 for those cost figures. But we think we need to develop  
10 those because at some point we need to be able to provide  
11 people some picture of what the ultimate cost will be.

12                   In the meantime, I don't think we need to worry  
13 that too much money is likely to go into it.

14                   (Laughter.)

15                   MR. AKE: I remember putting in a statewide data  
16 system in North Carolina, and there was a holler in  
17 western North Carolina the fire chief really needed to be  
18 covered. We had not figured. So we had to go put another  
19 transmitter in that. I suspect most people that do this  
20 in a statewide area or regional area find the hollers that  
21 they haven't thought about that cost more money than what  
22 they estimate. This is very expensive stuff. It's not  
23 cheap.

24                   But I think standards is important. I think the  
25 IPPs -- you can take advantage of the tremendous amount of

1 research that's been going on the Internet and other  
2 technologies. The open architecture stuff, all those  
3 things we have to do.

4 I would say to you, after having traveled around  
5 the country for the National Institute of Justice and  
6 doing a lot of work with them, we need as public safety  
7 folks to tell vendors what we want rather than vendors to  
8 tell us what we have. In the past, that's been a little  
9 bit of a problem.

10 DR. PEHA: I can't help but follow up on that  
11 one. I've been struck at how few commercial services are  
12 used in a lot of the places I've been working, and I think  
13 the main reason for that is if I go up as a small town and  
14 say, what have you got, no, none of it meets my needs, and  
15 I have to leave, if towns across the country ask for the  
16 exact same thing, then equipment vendors will start to  
17 provide it and service providers will start to buy that  
18 equipment. But as long as we do it piecemeal, it isn't  
19 going to happen.

20 DR. BOYD: Let me suggest there's another  
21 dimension that may complicate that. One of the  
22 fundamental issues is the question of preemption and  
23 priority. Carriers are extraordinarily reluctant to offer  
24 that preemption no matter what you pay for it, and the  
25 reason they're reluctant to offer that preemption is they

1 can't tell whether the call coming from that police  
2 officer or that agent is more important than that call  
3 about the heart attack or the child in trouble, and  
4 because they can't tell, they're concerned about the  
5 liability imposed if they preempt for public safety.

6 DR. PEHA: Let's see if our audience has any  
7 questions on this topic. Do you want to go to the  
8 microphone and introduce yourself? You too, whichever  
9 order you like.

10 MS. MOORE: My name is Linda Moore. I work with  
11 Congressional Research Service. I am a policy analyst  
12 that follows this topic. Anything I say here is totally  
13 personal and not the opinion of CRS.

14 I have a question about technology and I'm sorry  
15 Viktor left. He really left. Right? Because I read his  
16 paper and he talks very cogently about policy, and I  
17 believe that when he mentioned the example of the UK and  
18 their public/private partnership, he wasn't recommending  
19 that as a solution for the United States but using it as  
20 an example as to how policy could take one piece of this  
21 very large problem, and by solving that piece, bring a lot  
22 of other pieces into place. And I wanted to bring that  
23 into the context of the technology question panel,  
24 although there's a lot of policy parts, and maybe we'll  
25 talk more in the next panel.

1                   For example, Viktor's example of the UK could be  
2 replicated in the United States on the 700 megahertz  
3 spectrum. Now, I agree with Dr. Boyd that a single  
4 spectrum solution in today's world is not appropriate. We  
5 need redundancy. I also think the software programmable  
6 radio and all of the IP network things are things that we  
7 should be moving toward.

8                   But if today we took some of the 700 megahertz  
9 spectrum and started to implement it right away, using a  
10 combination of commercial and public safety sectors, how  
11 quickly could we advance to another level of technological  
12 awareness and policy implementation? Did I make myself  
13 clear?

14                   MR. AKE: Two months ago, I spent three days  
15 with the British. They wanted to know about CapWIN, and  
16 so they invited me over and NIJ paid for me to come over.

17                   But anyway, I went over and met with them. They  
18 do have some problems with that system. It's not all just  
19 no problems.

20                   You have to understand a little something  
21 different about the British police particularly and the  
22 fire service in Britain. 50 percent of that is paid by  
23 the federal government. 50 percent of their budget comes  
24 from the federal government. As Dr. Boyd has well pointed  
25 out, there are only 22 agencies. So the federal

1 government has much more control as to what they're going  
2 to do and what they're not going to do.

3 I think that the system is certainly something  
4 for us to look at, but --

5 MS. MOORE: Excuse me, Mr. Ake. I hate to  
6 interrupt you but I didn't ask whether that was a system  
7 we should apply. I said that was an example of how policy  
8 decisions could focus on a technology.

9 The question I asked is could we do something in  
10 the 700 megahertz, not following the British model, but  
11 using the 700 megahertz. There is, of course, a  
12 possibility for public/private partnership, but the  
13 essential thing is can we do something, not whether the  
14 British have the right model.

15 DR. BOYD: Yes. Let me answer that. First off,  
16 I don't think there's any problem with the notion of  
17 public/private partnerships. I think that's probably a  
18 good idea. We've talked, for example, to public safety  
19 about trying to identify those things they can off-load  
20 onto the commercial sector.

21 The difficulty we have in this policy area is  
22 that there are a lot of policy papers that talk about  
23 let's create a public/private partnership on, say, 700  
24 megahertz or elsewhere. The question that none of the  
25 policy papers ever address is, okay, how do you do this?

1 What is going to be the commercial piece of this? What's  
2 the actual plan? Where are the commercial players who  
3 want to play? What are they willing to offer? What is it  
4 going to cost the local guys when they come in to do it?  
5 And to what degree do you understand what it is the public  
6 safety community has to have before they will even play?  
7 And it's not a matter of just stubbornness or  
8 unwillingness on their part. It is an assurance to them,  
9 because remember, for them this isn't just an interesting  
10 policy issue. This is a life or death issue. These guys  
11 are concerned about emergencies, not the occasional  
12 terrorist emergency that the Federal government thinks  
13 about. Their lives revolve around emergencies 24 hours a  
14 day 7 days a week year-round, and these are life or death  
15 issues for their own folks, as well as for the citizens at  
16 large. I like the idea, and in fact, we're going to try  
17 to bring industry together early on to try to do this.

18                   But let me tell you one of the fundamental  
19 problems with dealing with industry, at the risk of  
20 infuriating some of the industry folks here. You're about  
21 three-quarters of the problem because everything you do is  
22 so proprietarily focused that we can't bring you together.  
23 Every one of you walks into my office at least twice a  
24 week to tell me that you have the solution if I'll just  
25 give you a few hundred million bucks. And the answer is

1 none of you have the solution. All of you have the  
2 potential to arrive at a solution if you, in fact, can get  
3 together.

4                   One of the things I've had to do, as I go out to  
5 talk to groups, especially industry groups, is to say we  
6 need a set of common interoperability standards, much like  
7 we have on PCs. And if you do that, then the transition,  
8 whether it's a public to a private, is fairly easy. You  
9 can make those kind of things happen. And we really need  
10 you guys to develop those kinds of interfaces yourselves,  
11 to do it on a voluntary consensus basis, because if you  
12 don't, I have to, and it's better that you do it. It's  
13 better that you bring it together. But the reality is  
14 that, for a variety of understandable reasons, industry is  
15 very reluctant to break down those proprietary walls that  
16 allow that kind of communication.

17                   Now, we're not looking at eliminating  
18 proprietary secrets inside the box, but we are looking at  
19 eliminating the proprietary secrets at the point of the  
20 interface and for the over-the-air control kinds of  
21 mechanisms so we can make those things happen.

22                   So we agree that the public/private partnership  
23 kind of approach makes a lot of sense, and we would like  
24 to see things like that. But it's important first that  
25 you understand enough about this environment to understand

1 that unlike the British model, we don't have enough  
2 Federal influence even to cause it to happen because local  
3 guys aren't going to buy it until you can first establish  
4 that it works. My argument would be there's no reason  
5 industry could not already have attempted to do this.  
6 There's no reason why industry could not already have been  
7 working with local or State agencies to do this, but in  
8 fact they have not been terribly willing to do so.

9 MS. MOORE: Thank you for avoiding my question,  
10 Dr. Boyd. I was asking about 700 megahertz.

11 DR. BOYD: Okay, let me address that. It's  
12 exactly the same thing with 700 megahertz. First off,  
13 there are people already on 700 megahertz, public safety  
14 who are already implementing 700 megahertz spectrum. For  
15 the first time, there actually is a national coordination  
16 program through CAPRAD, the coordination program that I  
17 helped to fund earlier working with the FCC. That's the  
18 first time that's occurred. Even on 700 megahertz,  
19 there's absolutely no logical reason why industry could  
20 not do that.

21 There's not a magic solution. It is an easy  
22 thing to write a policy document that says this is a  
23 wonderful idea. The question I'm going to ask you is,  
24 that's okay, now you help us figure out how to implement  
25 this. You identify where the industry folks are who are

1 willing to play with us because we're trying to do that.  
2 We're trying to bring them in to do that. But I've got to  
3 tell you that it's easy to say these things. It is an  
4 extraordinary challenge to bring all the players together  
5 and have them give up their turf issues long enough to  
6 make it happen.

7 MR. TOLMAN: Can I add to that while he's coming  
8 to the mike?

9 DR. PEHA: Yes.

10 MR. TOLMAN: On the issue of the 700 -- and I  
11 sat on the implementation subcommittee -- yes, the  
12 spectrum -- and you've probably heard this term -- is like  
13 real estate. They ain't making any more of it. There's  
14 only so much of it. And yet, like real estate such as  
15 Manhattan, what did they do? They got creative. They  
16 couldn't go horizontally and they started going  
17 vertically, different modulation schemes.

18 We know that the 700 band is coming. When it  
19 gets here, that's a whole other issue with different  
20 initiatives to try and get a date certain on that. 24  
21 megahertz adds up to effectively doubling. That's 51  
22 percent of the existing spectrum. If you added the 10  
23 disparate bands up that public safety is on, low band,  
24 high band, UHF, 450 and 800, and a sliver of 900, and  
25 there's a piece of 220 in there, it's about 23.9

1 megahertz. And the 700 band eventually will be -- 2,100  
2 channels will be coming available, effectively doubling  
3 the spectrum.

4                   And that doesn't count the FCC's reallocation,  
5 fortunately, of what's being called the largest  
6 reallocation of spectrum, 50 megahertz of spectrum in the  
7 4.9 gigahertz band. That's already moving out. It's  
8 moving out quickly in the 4.9 in that the FCC has taken a  
9 different approach and putting out blanket licensing. We  
10 haven't touched on that, but there are some impediments in  
11 my opinion certainly with regard to the FCC and how  
12 they've been conducting business with licensing with  
13 public safety.

14                   In that 700 band, we want it yesterday. The  
15 public safety can use it. So let's have it.

16                   DR. PEHA: I've got to sneak one comment in and  
17 I'll go to Jim.

18                   On the question of standard-setting, a lot of  
19 companies are not coming together, giving up their  
20 proprietary solutions, because they don't see it as in  
21 their interest to. In many other areas of communications  
22 design, consumer groups, say, for example, cable labs for  
23 all of the cable companies, come together and force the  
24 manufacturers to build a standard. The consumer groups in  
25 this case are public safety agencies and I think a Federal

1 role could be to force that issue rather than waiting for  
2 the companies to do so.

3 DR. BOYD: We agree with that. In fact, one of  
4 the things that we've already been able to achieve is for  
5 the first time we actually have companies coming to talk  
6 to us expressly, for example, about how they map their  
7 current capabilities and capabilities of new equipment to  
8 the statement of requirements. We also have had companies  
9 that never before built components that would allow  
10 interoperability with other systems doing that now because  
11 they see that, and we're in a position to be able to apply  
12 some pressure to do that.

13 It's important to understand that the Federal  
14 investment in this area can help steer a lot of this  
15 because it can be focused in a few areas as part of  
16 demonstrations and other kinds of things. But it's a  
17 relatively small piece of the total amount spent in the  
18 public safety community. So there is a limit to how much  
19 pressure it can apply.

20 MR. TOLMAN: One quick example of a  
21 public/private partnership with a vendor, and it's slow  
22 coming. The decision is made. They're moving out with it  
23 and that's Maycom in Florida where they own -- that is the  
24 deal that they worked out with the State of Florida. They  
25 bought the infrastructure. They will own the

1 infrastructure and then lease back this. I don't know if  
2 it was North Carolina or South Carolina --

3 MR. AKE: South Carolina.

4 MR. TOLMAN: Like a good idea, no matter who  
5 starts it, such as a drive-through -- whoever started the  
6 drive-through at the fast food restaurants -- one idea  
7 catches on and the others will quickly come. We'd like to  
8 see that be successful but it sure has been a struggle.

9 MR. AKE: I want to add to that because I want  
10 to try to answer your question. The British system does  
11 have one advantage in the fact that I can buy different  
12 radios and use the same system. That is an advantage.  
13 There are limitations to the technology but there are some  
14 positive things to it.

15 Some of the American things we've seen is like  
16 South Carolina and Florida, you buy from one vendor.

17 The standards issue that SAFECOM is working on  
18 and NIJ is working on and everybody is working on for this  
19 country will enable us to do the stuff you're talking  
20 about in the British system. We're not there yet with the  
21 standards and we need to get there.

22 DR. PEHA: We'll close this one out and then the  
23 last two questions, let's try and be brief, if we can.

24 MR. SNIDER: Jim Snider from the New America  
25 Foundation. I have two questions, the first one addressed

1 to George, the second to Tom, though if somebody else  
2 wants to jump in, that would be great.

3           The question to George is how much spectrum does  
4 CapWIN currently use in total, in aggregate number. And  
5 if everything works out in terms of your vision of  
6 interoperability, say, in the next 5 or 10 years, how much  
7 spectrum do you envision would be part of your system?  
8 Now, you may want to parse that in terms of NTIA allocated  
9 spectrum versus FCC, which is Federal versus State and  
10 local, and maybe high frequency above 3 gigahertz and how  
11 much spectrum do you have below 3 gigahertz.

12           MR. AKE: I can't answer your question. Let me  
13 tell you why. CapWIN is a back-end system. CapWIN uses  
14 commercial systems. It uses private systems. It uses  
15 whatever system is out there. It will use a satellite all  
16 the way down to 800 megahertz systems. We don't care.

17           The agencies are coming back to us on their own  
18 system on the wireless side. They're coming back on the  
19 commercial side back to our network route. The CapWIN  
20 system is designed to run on any application. Any kind of  
21 wireless application we run on. We built the back-end  
22 system. We built all that piece in the back end, but  
23 we're actually using commercial off-the-shelf stuff to get  
24 like Verizons and AT&Ts and Nextels for the wireless  
25 piece. The system is designed to carry 10,000 users at

1 one time concurrently, and the license is for 10,000  
2 concurrent users at one time. And it's also licensed for  
3 Virginia, Maryland, and D.C. So anybody in the State of  
4 Maryland, anybody in the State of Virginia, and anybody in  
5 District of Columbia and the Federal government can use  
6 the system.

7 MR. SNIDER: So you can't parse it in terms of  
8 the government component versus the commercial --

9 MR. AKE: I can't talk about spectrum because  
10 really we use what's already out there.

11 MR. SNIDER: I see, okay.

12 My question for Tom. Earlier on you mentioned  
13 -- I'm not sure where it was, but the A, B, G innovative  
14 public safety and that was unlicensed spectrum, I took it  
15 to be.

16 MR. TOLMAN: Yes.

17 MR. SNIDER: And what I have heard is that in  
18 the heartland -- we don't see it here in the debate in  
19 D.C. -- hundreds of small communities, those 25-member  
20 police departments or smaller, are making heavy use of  
21 unlicensed spectrum. And I don't see APCO and others out  
22 there saying, hey, unlicensed spectrum is a key part of  
23 the vision for future public safety. My question to you  
24 is how important is unlicensed spectrum for public safety,  
25 and if it is really important, as it seems to be now in

1 the heartland, just like the example you give -- I don't  
2 remember where that location was.

3 MR. TOLMAN: Grand Haven, Michigan, the entire  
4 city.

5 MR. SNIDER: Why not push for more unlicensed  
6 spectrum for public safety?

7 MR. TOLMAN: Well, I would say the answer is  
8 yes. Unlicensed spectrum, this new paradigm. Now,  
9 there's a caveat with that. They've got to move  
10 consciously with public safety and they can do it, move  
11 out with this. The plus is that it's happening now, again  
12 with the FCC with the blanket licensing in the 4.9 and 4.9  
13 gigahertz is typically a microwave frequency point to  
14 point. And yet, with today's technology advancements,  
15 most of the licensees aren't using point to point. It's  
16 actually operating as a hot spot type of technology. The  
17 answer is unlicensed spectrum absolutely has a future in  
18 public safety.

19 Now, what's happening, though, now contained  
20 within that, in California -- and the FCC is saying you  
21 work out the interference situation. If there's going to  
22 be interference, you've got to work it out. That could be  
23 problematic. In the State of California, for example,  
24 there's one area now that's stacked 13 licenses in the  
25 same area, blanket licensing. Now, they're trying to make

1 it jurisdictional. They're trying to make it in a  
2 geographical area.

3 But that aside, the answer is unlicensed  
4 spectrum, absolutely.

5 MR. SNIDER: I just hope you'll get that message  
6 to your leadership at APCO and whatnot because you're just  
7 missing in action in this area at the FCC and in Congress  
8 in pushing --

9 DR. BOYD: Yes. Well, part of this is the  
10 baseline is intended in part to identify the answer to  
11 your question, how important is this and how much of it's  
12 actually used.

13 MS. DONAHUE: I'm Karen Donahue with Lucent  
14 Technologies. I just wanted to respond to a couple of  
15 comments I heard most recently in this last discussion.

16 Dr. Boyd, when you mentioned some of the issues  
17 around participation and the interest of industry and the  
18 proprietary solutions that people don't want to give up,  
19 one of the things I want to make sure that you and others  
20 are aware of is that Bell Labs, which is of course part of  
21 Lucent, has been working through the international  
22 standards bodies in the 3G commercial technologies  
23 development to incorporate the functionality and the  
24 standards that would provide for public safety  
25 requirements. We've done an in-depth analysis over the

1 past couple of years on what we think is a fairly  
2 comprehensive needs assessment of public safety and how  
3 commercial technologies, particularly on the broadband  
4 data side, can address those. We've been anxious to share  
5 some of that with your office, and we look forward to the  
6 opportunity to do that.

7                   But the point I want to make here is that there  
8 is a huge advantage both in terms of capabilities, as well  
9 as cost advantages, through open commercial-based  
10 standards to meet public safety's needs. And the issues  
11 that we've all discussed here -- and we could discuss ad  
12 infinitum about spectrum and the difficulties and the  
13 constraints that the public safety spectrum situation  
14 requires -- are things that need to be addressed in terms  
15 of a national strategy. So we would urge your office and  
16 DHS to look at that from a national strategy perspective  
17 in terms of addressing in a more comprehensive manner the  
18 way that public safety utilizes spectrum today.

19                   DR. PEHA: Do you have question? Please put the  
20 question out and we need to close the panel.

21                   MS. DONAHUE: The question is this. The 9/11  
22 Commission report calls for a trusted information network  
23 for the national responder community which incorporates  
24 all of the end users that we've talked about today. Are  
25 you all looking at that, and if so, how would you see that

1 recommendation implemented?

2 DR. BOYD: A couple of responses. One is Lucent  
3 has been to see us on more than one occasion, and while  
4 we're intensely interested in things like the 3G  
5 approaches and others, I'd point out that that still  
6 doesn't address the near-term issue of how you handle this  
7 incredibly large installed base. So while the strategy --  
8 and we would see that as part of the longer-term strategy,  
9 not as part of what we expect to accomplish in the next  
10 one to three years simply because you can't change out the  
11 existing infrastructure that fast. So we think that  
12 inevitably is a major piece of what we have to approach.

13 The second one is that we, in fact, are looking  
14 at interoperability issues associated with all of these  
15 things, and of course, with the 9/11 report and its  
16 recommendations. The recommendations, as you know, in the  
17 9/11 Commission report covered a lot of bases, some of  
18 them with more detail than others. So some of them become  
19 sort of conceptual leads that we're now going to have to  
20 follow to try to figure out exactly where they would go  
21 and how you would flesh them out. In fact, the notion of  
22 a first responder data network is one of those.

23 The first responder community will tell you that  
24 while they're intensely interested in how you share data,  
25 a number of the questions you have to ask is with whom,

1 when, and how much because not everybody needs to share  
2 information with everybody all the time.

3           The second one is that the public safety  
4 community will tell you that the first priority is that I  
5 have to be able to talk to people, voice communications.  
6 So the data is secondary. It's important and it's  
7 particularly important at the command level, but voice is  
8 most important because the guy on the ground, whether he's  
9 one with a gun in one hand and a flashlight in the other  
10 or he's the fireman with both hands on the fire hose or is  
11 the ambulance crew with both hands on the litter, is not  
12 in a position to use data at that point. So there is a  
13 principal, primary concern with voice communications I  
14 think for fairly obvious reasons.

15           All the other elements are also important and  
16 you'll find those outlined in the statement of  
17 requirements as well. But in fact, we think the longer-  
18 term approach involves a great many things. It includes  
19 IP technologies, probably includes software defined radio  
20 technologies, certainly includes things like mesh networks  
21 and the 3G bluetooth kinds of things.

22           So we all understand that, but none of these are  
23 things that we can implement in the immediate term.  
24 Everybody wants a magic solution that will fix it  
25 tomorrow. I'm going to tell you again. There ain't one

1 and it isn't going to happen.

2 DR. PEHA: Let me take this opportunity to  
3 introduce one more panel member. I guess we started  
4 behind schedule and we have stayed behind schedule. So  
5 we're going to accelerate the last panel a little bit and  
6 try and make this a fast switch.

7 First I want to introduce Ray Steele from Ball  
8 State University. He is the Director of the Center for  
9 Information and Communication Sciences. Dr. Steele  
10 specializes in information and communication technology  
11 applications, business applications of technology, human  
12 communications, and human factors, organizational change,  
13 management of organizations, and crisis communications,  
14 among other things.

15 So with that, the third panel today is on what  
16 public policy remedies are available to spur action. I  
17 guess we will kick off once again with the three points in  
18 three minutes. Let me start at this side this time.

19 DR. BOYD: I think there are a number of policy  
20 remedies that we need to approach, and Congress, Bill  
21 Jenkins, and others I think have been looking at a great  
22 many of these.

23 The first thing I'd point out is that frankly  
24 everybody needs to lead. It's not just one place. It's  
25 not just one thing. Everybody needs to lead. I think

1 that applies to DHS. It applies to the Federal  
2 Communications Commission that owns the spectrum, DHS that  
3 deals with the responders and the funding of those  
4 activities, and Congress which passes the legislation and  
5 appropriates the money.

6           In fact, the nature of this legislation has been  
7 a part of the problem, and one of the reasons SAFECOM came  
8 about as a presidential management initiative is I think  
9 typified by what happened with the Homeland Security Act.  
10 If you read the Homeland Security Act, you'll find a  
11 provision which says that what we now call the Office of  
12 State and Local Government Programs is responsible for  
13 interoperability. If you read further in the same act,  
14 you'll find that the Federal Emergency Management Agency  
15 is responsible for interoperability, and if you read  
16 further, you'll find that the Department of Justice is  
17 responsible for interoperability. That's in one act for  
18 one agency. That doesn't talk about any of the other  
19 legislation. It doesn't talk about special language in  
20 appropriations. It doesn't talk about other authorization  
21 language that includes much the same kinds of stuff.

22           So the reality is that what the White House  
23 wanted to do and what the President wanted to do in the  
24 creation of SAFECOM was to say, look, we've got to have a  
25 way to get the Federal act together. We've got to get the

1 Federal folks to play together, and so Federal  
2 coordination became a major issue.

3           Spectrum is a critical piece and it's a policy  
4 issue, but you can't foist that all on the Federal  
5 Communications Commission because the FCC in fact assigned  
6 the spectrum, provided the date certain, and Congress then  
7 provided legislation which said, okay, when 85 percent of  
8 the viewing public has available to it high definition  
9 digital television, then at that point, they have to get  
10 off the spectrum.

11           Now, there's a chicken and egg here. Do you buy  
12 a high definition digital television before it's being  
13 transmitted? If you're the guy running the station, do  
14 you build the station before anybody can watch it? And so  
15 we have a problem associated with that that really  
16 requires a date certain, and in fact, Chairman Powell,  
17 testifying last week, pointed out that they need some  
18 congressional codification of the date to help make these  
19 kinds of things happen.

20           We need to institutionalize what we've done now  
21 because one of the things that's happened is that while  
22 lots of people were put in charge of interoperability and  
23 now SAFECOM is in charge of interoperability, there is no  
24 legislative authority for any of the players to cause  
25 anything to happen. The only real authority that

1 currently exists -- and it's fairly potent authority -- is  
2 authority which amounts to an executive direction, which  
3 comes down through the Office of Management and Budget  
4 through the budget process which provides pass-back  
5 language in each budget that says you cannot implement  
6 anything that touches wireless communication systems that  
7 doesn't comport with the SAFECOM national strategy. So  
8 there is at least that much direction associated with it.

9                   Within the Department of Homeland Security, the  
10 Secretary has undertaken to create the Office of  
11 Interoperability and Compatibility which looks beyond just  
12 communications. It adds initially a focus on equipment at  
13 large and a focus on training. And the office has to be  
14 up and operational by the 1st of October, and it will be.  
15 It's on schedule to do that and may also encompass other  
16 things later because we were told to leave a place open  
17 for that.

18                   So there is a departmental level of direction to  
19 make those kinds of things happen as well, but the fact is  
20 that we're still not fully institutionalized. So what  
21 happens is that we spend an awful lot of energy persuading  
22 people. We think we've become fairly convincing in this  
23 business, but it's not always easy.

24                   We have been able to put in place a number of  
25 things that I think are crucial as policy initiatives.

1 One of them is common grant guidance, and the common grant  
2 guidance was used last year for the first time in  
3 interoperability grant funding that went through FEMA and  
4 that went through the COPS office. That grant guidance  
5 was common. We helped up set up the selection criteria,  
6 use the common grant guidance criteria as part of the  
7 selection process, and that common grant guidance has been  
8 implemented in Office of Domestic Preparedness grants this  
9 year to States as guidance, as information, because in  
10 block grants it works a bit differently. But here's  
11 another policy issue Congress can help us with.

12                   When we say we applied the SAFECOM common grant  
13 guidance, I want to emphasize that we did that insofar as  
14 each of those grant programs would permit because Congress  
15 had written different rules for the different programs.  
16 So one of the programs allowed money to support  
17 specialized technical consulting, which the local guys  
18 don't have, and to support planning. The other grant in  
19 the COPS office said, you can only buy equipment --  
20 remember, we've spent a lot of time saying equipment is  
21 only part of the issue -- and it had to be a 25 percent  
22 cash match, which was tough on the local agencies, and  
23 they couldn't spend any of the money on planning and  
24 training. Now, there were other planning grant monies  
25 that you could use for a year. So you had this bizarre

1 situation where you had to get money out to buy equipment  
2 long before you were going to be able to support or  
3 provide the planning that was required to make it make  
4 sense.

5                   So all of us have got to work together. I think  
6 DHS needs to be involved in helping to suggest the  
7 direction we need to go. We need the FCC's help, and in  
8 fact, we've created a working group. John Milletta, the  
9 Chief of the Wireless Bureau, and I have our staffs now in  
10 a working group who meet regularly.

11                   And finally, you need Congress helping us to  
12 make sure that we make these things make sense. Congress  
13 I think clearly intends to do that, and that's why I think  
14 they've had so many GAO studies. Bill and I have become  
15 extraordinarily familiar with each other, unusual for a  
16 program and GAO. And we've had an extensive series of  
17 hearings where Congress made clear how interested they  
18 are. Bill, of course, was at each of those, so we've  
19 gotten to know each other really that way as well.

20                   So I think you're going to see a number of  
21 changes occur over the next couple of years because I  
22 think there's an unusual congruence here among what the  
23 public safety community thinks it needs, on what Congress  
24 is trying to do to help the public safety community get  
25 what it needs, and the executive branch who are intent on

1 solving this problem, along with the other preparedness  
2 issues.

3 MR. AKE: I don't think any particular agency  
4 should be in charge of doing the interoperability things.  
5 I think it's got to be a partnership. You've heard me say  
6 that. The thing that SAFECOM is doing -- it has an  
7 executive board made up of local people and State people  
8 and everybody working together -- is what we have to do.

9 To go to my previous life, North Carolina has an  
10 interoperability governance structure. I remember as a  
11 command officer with the highway patrol going to local  
12 sheriffs and fire chiefs and saying, we need to do this,  
13 and guess what. We've got the answers. That didn't work.  
14 Frankly, they kind of laughed at me, until in 1994 we went  
15 to them and we said, can we work together? Can we work  
16 together to solve the interoperability problem in this  
17 State? And things started happening.

18 Today in North Carolina, that interoperability  
19 governance structure controls the funding for technology  
20 for public safety. If I'm a State agency or if I'm a  
21 local agency and I want a State grant, I have to go  
22 through the interoperability control people and they make  
23 the decision is this something that benefits the whole  
24 State or not. The burns grants, other grants that come to  
25 the State agencies go through a process that if it's not

1 something that's interoperability, if it's some stove pipe  
2 kind of thing, they don't fund it.

3 That's where we have to get on a national level.

4 And I think that's the reason that what Dr. Boyd is doing  
5 and the National Institute of Justice and all these folks  
6 is really important. It has to be a partnership. We have  
7 to have guidance as to what's out there. We have to have  
8 guidance as to where the technology is going. But there  
9 has to be some ownership by everybody, and it can't be a  
10 Federal program and it can't be a State program.

11 I can tell you now, as I was going out as I was  
12 talking about this partnership, I was with the Secretary  
13 of Crime Patrol one day, and I'll never forget it. We had  
14 a State agency that wanted to take it over. They were the  
15 technology people. And I walked down the aisle in a large  
16 meeting room with all the police chiefs and sheriffs, and  
17 as we walked down that aisle, 10 of them -- and I counted  
18 -- told the Secretary of Public Safety, if you let them  
19 take this over, you can count us out. That's what it's  
20 about. It's about working together. People working  
21 together can climb a mountain. People working separately  
22 can't do that.

23 That's the reason CapWIN has been successful.

24 In fact, we have an assistant CIO from the Department of  
25 Justice sitting at a table alongside Chief Ed Plaughter,

1 the fire chief from Arlington County, who has a tremendous  
2 amount of experience, and they're talking about where do  
3 we need to go. And we have David Boyd in the room, and we  
4 have people from NIJ in the room, all talking about where  
5 we need to go. That's the way we get it done.

6 Technology. It's coming. But we've all got to  
7 learn to play. I carry a slide around with me as I go to  
8 speak to people. I've got a sandbox with three little  
9 girls in it. If we could all learn to play together in  
10 the sandbox, we could solve this issue. Thank you.

11 DR. STEELE: Well, I'm the new voice on the  
12 block here. Far be it from me to suggest a solution in  
13 policy, but let me just suggest some things that I've  
14 heard this morning.

15 I think I would do it in a very simple fashion.  
16 I would say the words "resolve," "focus," and "discipline"  
17 haven't come together to get execution, and I think they  
18 haven't for some very simple reasons.

19 Number one, with all due respect to the people  
20 at the table with far more experience, I do understand  
21 when you say it isn't going to happen fast. But I believe  
22 timing is critical and the window of opportunity comes  
23 rarely, and I don't agree at all that we need another  
24 crisis to understand what we learned from 9/11. I was  
25 part of that crisis, and it's time to stop saying we need

1 the next crisis. We need to act now.

2                   And to act now means some things. It means,  
3 number one -- I'd like to ask anybody on this panel or in  
4 the room if you can tell me in the State of X -- pick a  
5 State other than Delaware, South Dakota, Utah, and the  
6 area that you're representing -- exactly what's going on.  
7 As I would posit, nobody in this room and nobody in the  
8 country probably does. We've got all kinds of  
9 organizations talking about it, but nobody is doing it.  
10 Needs assessment is the most functional notion. We've got  
11 more out there than we know about and more problems than  
12 we know about. We just often don't focus on the problem  
13 where it is, and that means a solution gets a lot more  
14 complicated.

15                   So I would suggest that if you look at the  
16 needs, you get a structure that might help, and if you  
17 think of two triangles, points opposite direction, the  
18 first -- and it goes to your partnership issue. The first  
19 point I think that we've got to deal with is if we truly  
20 believe that we are a nation at risk in a war-like time,  
21 then we have to have executive leadership to stop it.  
22 We're not going to have seven firemen or six policemen  
23 sitting around a room voting on whether or not they're  
24 going to go out and answer the fire call or go out and  
25 answer the terrorist call. That doesn't work. We've got

1 command issues here. Those of us who have served in any  
2 military-like organization know that there's a command and  
3 control function, and everybody understands it who's in  
4 the game and they respect it.

5                   So what we may need to do is to say first and  
6 foremost, let's find the needs through a process that is  
7 State by State and then regionalized by the involvement  
8 from the bottom up. I agree with you about the bottom up.  
9 I think you absolutely have to do that.

10                   But I think the way you do it is by involvement  
11 that says here is a time frame and we're not going to  
12 spend another dime until you play. And that's where  
13 Congress and policy has to come together to begin to put  
14 some discipline in the system. Do not spend a dime until  
15 we have agreed from the bottom up on a functional, not a  
16 technical, but a functional standard.

17                   I've worked with Lucent and AT&T and lots of  
18 others to build all sorts of high tech projects, and I've  
19 never once asked you to define the functional standard.  
20 I've asked you to come in with the technical solution that  
21 meets the functional standard. I.e., we need to know what  
22 we need before we can ask you to bring it in and fix it.  
23 Once we have determined that, the functional standard is  
24 what people give buy-in to because they're saying that's  
25 what I want. And if you can get the functional standard

1 first at the base, you can bring people together. If at  
2 the other end of that point, you can say from a leadership  
3 -- and I don't care who is sitting in the White House at  
4 the end of this current process. Someone has got to be  
5 willing to say we have a national issue and we have a  
6 significant national issue from the commander in chief's  
7 perspective and that Congress is going to have to get in  
8 line and play and agree.

9                   We've got too many players in the game trying to  
10 feed their own horse, and we're not going to win the race  
11 until we stop feeding everybody's horse and begin to say  
12 this is too important to let the Congress deal with it and  
13 it's too important to let every damn committee in the  
14 world deal with it. This is where we live. It's my heart  
15 attack. It's your auto accident. It's your terrorist  
16 attack. That we've learned in the last three years in the  
17 most significant fashion and we know it's not going away.  
18 And trying to go back and doing business the old way just  
19 doesn't make sense to me.

20                   I think within a year's time, with appropriate  
21 focus and very little funding, you could get the  
22 functional standards identified from the bottom up with  
23 people participating from the fire department of 25  
24 players and the police department of 10 officers, and I  
25 think you could do it through States and involve the CIO

1 types of each State because all you have to do is read the  
2 government publications recently, the planned spending per  
3 State. There's a lot of planned spending on technology in  
4 every State in the nation. Even the States claiming they  
5 have no money are planning spending in that area because  
6 of the last three to five years. Since 2000 we have held  
7 back. Too many people got burned on too many things and  
8 then we had a crisis, and we've not spent to upgrade.

9                   We've got money in the system. We've got almost  
10 \$4.5 billion in the Federal system committed right now,  
11 mostly inefficiently, but committed to this issue in one  
12 fashion or another with 50,000 rules getting in the way.  
13 But it is committed money.

14                   So I don't think we've got a matter of money and  
15 I don't think we've got a matter of an impossible  
16 political mountain to climb. I think what we've got is a  
17 need for some very focused policy that comes both from the  
18 top in terms of saying this is not like every other issue.  
19 This is an unusual issue. Everybody loves to stand on  
20 mountaintops and hold police and fire chiefs' hands, and  
21 it doesn't matter which side of the spectrum. They all  
22 want to play. Which are the last presidential candidates  
23 who didn't go talk to law enforcement or to safety? They  
24 all want to play.

25                   So whoever wins there needs to understand the

1 lead role and then we turn to the rest of the game and we  
2 simply say, look, at every State level, I don't care if  
3 you've got 30,000 or 22 people, you can still find a  
4 functional way per State and then by region to identify  
5 functional standards. And if you do that, a lot of the  
6 other issues will fall away because you'll begin to  
7 understand what the needs are. And it's amazing when you  
8 actually understand how much you need and what the need  
9 is, how you find ways to fund it.

10 MR. TOLMAN: He's right.

11 (Laughter.)

12 MR. TOLMAN: He's absolutely right.

13 Last week there was the Intergovernmental  
14 Relations Subcommittee that was going on, and there were a  
15 number of comments from the table, not just from the panel  
16 but also from those that were on the committee, talking  
17 about -- and they've got it nailed right -- the issue of  
18 the process. The money is there. The \$4.X billion is  
19 there and it ain't getting into the hands of the State and  
20 local. It is to some extent.

21 Now, I was on a COPS review panel recently, and  
22 I've got to say that was good, the way they were working  
23 the process. But in the grand scheme of it -- and we're  
24 hearing this out in the field from the State and local  
25 community -- when you talk about Federal funding, it turns

1 them off. It's like saying Amway. They want to run and  
2 go in the other direction. I hope there's nobody selling  
3 Amway.

4 (Laughter.)

5 MR. TOLMAN: But that is a point. I would  
6 suggest that the GAO, if they haven't already -- and now  
7 with the new A in it, "accountability," now is the time.  
8 I would say there is a tremendous need to find a way to  
9 improve that process to get it to the State and local. I  
10 know there are some issues internally with time and  
11 programs getting set up, and that eats up time. But the  
12 perspective out in the State and local, if you could  
13 interview State and local agencies and say are you happy  
14 with the funding you get, the majority would say, what  
15 funding? We don't have it.

16 With regard to policy, since we're talking about  
17 policy, this is an interesting article, and it's related I  
18 would say. Business Week, September 6th issue. The  
19 United States is behind in broadband deployment. In 2000,  
20 America had the world's third highest broadband adoption  
21 rate. Now it's number 10. Why? No leadership, botched  
22 public policy, and timid competition. I think it's  
23 related. The technology, what's going on here. There is  
24 need for improvement.

25 DR. JENKINS: Well, I think I'm going to be a

1 little bit of a skunk at the party here. I do work for  
2 the GAO. Since this issue of grants came up, I want to  
3 clarify it. There is just an amazing amount of  
4 misunderstanding about the grants.

5           First of all, the States are required to pass  
6 down the money to localities within the States within 45  
7 days. We have done case studies in four States. The real  
8 holdup in the money is not the Federal government. It is  
9 not ODP. It's State and local requirements for how the  
10 money has to be used. In one particular instance that we  
11 looked at in California, it took five months for the city  
12 council to vote to accept the money, and you can't use it  
13 if you don't accept it. So the principal issue with the  
14 use of the money really resides at the State and local  
15 governments. The Federal government has got a bad rap on  
16 that.

17           An issue, however, that comes up in the grant  
18 thing is the language. The language has been changed  
19 three times in terms of what it means to get the money  
20 down to the States and the States to the local  
21 governments. They used "transfer" in 2003. They used  
22 "obligate" in 2004. The draft language today says  
23 "receipt of money." Those all have legal implications and  
24 they're different legal implications. The General Counsel  
25 of the Office of Domestic Preparedness, now the Office of

1 State and Local Coordination and Preparedness, has ruled  
2 that if States -- and it makes some sense -- want to  
3 centrally purchase on behalf of localities in order to get  
4 discounts on equipment, the term "obligate" requires that  
5 the State sign an MOU where the locality then grants the  
6 State the authority to do that. That takes a lot of time,  
7 and that's because of the way language is. It's not been  
8 a problem for all States, but it's been a problem for some  
9 States. So it's a fairly complex issue as to what's going  
10 on with the grants.

11 I would say that there's a difference between  
12 whether or not the States have the money and whether or  
13 not the localities have used the money. What people focus  
14 on is the unexpended balances, the amount that hasn't  
15 actually been cash outlaid, and that's fairly substantial.  
16 But there's a fair amount that has been obligated longer  
17 than that because there are few manufacturers of certain  
18 things that they're buying and there are big delays in  
19 getting that equipment. In other words, you place the  
20 order. You're not going to get it for six months or a  
21 year because they're behind in manufacturing it. So if  
22 you focus only on the unexpended balances, you're focusing  
23 on not a very accurate measure of whether or not the  
24 monies are being used by the localities.

25 We've done some work on that. We've got another

1 report that will be coming out in October on the use of  
2 the grants.

3 I want to mention one other thing that the  
4 Congressman mentioned, and he pointed out that he could  
5 not get any information to his question of how much money  
6 has actually been spent on interoperability from these  
7 grants. I assume you all know the two biggest grants by  
8 far account for 85 percent of all the money going to State  
9 and local are the State Homeland Security grants and the  
10 Urban Area Security Initiative grants.

11 The State Homeland Security grants, the way it  
12 works is that the grantee is the State. It's not the  
13 locality. Therefore, the person who reports back up to  
14 the Federal government is the State. It's not the  
15 locality. The Federal government has no institutional way  
16 of knowing of how these monies are being spent, and that  
17 is not, I want to point out, ODP's fault. That is simply  
18 the nature of the structure of what is essentially a  
19 formula block grant and the way that they operate.

20 But we do think it is very important that  
21 somebody somewhere have some idea of what the hell this  
22 money is being used for and whether or not it's being used  
23 effectively and it's being used efficiently. We are  
24 beginning to drill down in States in order to be able to  
25 answer that question as to how they're being spent, on

1 what basis, with what effect.

2                   With regard to the policy issues, first of all,  
3 SAFECOM has had an incredible challenge because it has  
4 been an e-gov initiative that has been dependent on other  
5 Federal agencies for money. It has no independent source  
6 of funding. It has no congressional source of funding.  
7 It has no source of funding directly from DHS. So it's  
8 because it has been largely dependent upon other agencies  
9 for funding and authority -- and its primary authority has  
10 been persuasive, Dr. Boyd and their staff and their  
11 ability to jawbone effectively -- it has made their job  
12 very, very difficult.

13                   So one of the things that we have said in our  
14 report is we think it's very important that it be very  
15 clear who has the leadership, for the reason that he  
16 mentioned. There are three different agencies that have  
17 been given the leadership in the Homeland Security Act.  
18 It is important that there be a clear understanding of who  
19 has the leadership in the Federal government, who can set  
20 grant guidance standards, that that be clear, that there  
21 be funding for that organization. And OIC, which Dr. Boyd  
22 will head, is going to be one step in that direction, but  
23 at this point they don't have for '05 an appropriation.  
24 It's not in the President's budget, so there's a question  
25 of how this organization is going to be funded.

1                   The grant guidance is extremely important. Dr.  
2 Boyd pointed out that they have developed this guidance in  
3 some grants but not all grants for the reasons that he  
4 talked about. Some of the grants do not allow you to use  
5 it for planning. You have a one or two year performance  
6 period, which encourages States to spend it on equipment  
7 rather than planning, spending it on equipment  
8 inconsistent with a plan. There is no consistent way of  
9 reviewing applications for the use of the money. So it is  
10 possible, with the various grants that are out there, to  
11 actually approve two grants in adjacent jurisdictions that  
12 propose diametrically opposed solutions to  
13 interoperability. There needs to be some way to make sure  
14 that that does not happen. There has to be some  
15 consistency in the grant guidance and the review of those  
16 things so that you don't have the left hand and the right  
17 hand across the river doing things that are not going to  
18 work. It's a waste of money. So we think that's  
19 extremely important. There has to be consistent grant  
20 guidance.

21                   We think there also have to be deadlines. As  
22 this gentleman mentioned, there need to be some target  
23 dates for getting things done. Otherwise people talk  
24 forever about this. That has to be tied into grant  
25 guidance we believe. The grant guidance ought to include

1 some target dates for getting things done. As it is now,  
2 for example, even the regional definition is different  
3 from grant to grant. They don't define metropolitan  
4 statistical area the same in grants. The FEMA and COPS  
5 grants use two different definitions.

6                   We think that there also needs to be very strong  
7 Federal support for establishing statewide governance  
8 bodies in order to do this. We have mentioned in the  
9 report the State interoperability executive committees  
10 which have been set up, but we don't particularly care  
11 whether that's exactly the structure. We care much more  
12 about the function that they operate at and what they're  
13 designed to do rather than what their exact organizational  
14 structure is. The point is that they need to bring  
15 everybody together to establish the functional standards  
16 that have been mentioned, a comprehensive plan for how  
17 they're going to do this and be able to measure their  
18 progress in doing that and report on doing that.

19                   So we really are focusing in this area on the  
20 accountability for doing something, whether it's for  
21 interoperability or the other use of the money. We think  
22 that's very important and we're going to be pushing that.  
23 We're working with committees now in terms of various  
24 legislative language that might be in some statutes that  
25 are coming up. As you know, there are several bills

1 before the Congress to revise the Homeland Security grants  
2 and the way that they work, and we're working with the  
3 committees on that.

4           In general, as you can tell, from our  
5 perspective this is very much a people issue, a people  
6 processes issue, much more than a technology issue. That  
7 piece has to be in place before you can really deal with  
8 technology, with the possible exception of these patchwork  
9 systems that will get you at least incident commander to  
10 incident commander. But again, even in those systems, if  
11 there's not a clear incident command structure and people  
12 don't know how they're supposed to interact, it doesn't  
13 matter if they can talk to each other if they don't have  
14 any agreement on how they're going to behave on the basis  
15 of those communications.

16           DR. BOYD: Let me make just a couple of real  
17 quick points before you move on.

18           One is we also agree that, first off, we don't  
19 think we need to wait for another incident. We think 9/11  
20 was enough of a call-up. In fact, we cannot wait which is  
21 why we've already initiated these things.

22           One of the critical things we've done is, first  
23 off, it's clear that the administration and Congress have  
24 both recognized this as a national issue. The  
25 administration created SAFECOM. The Department of

1 Homeland Security created the Office of Interoperability.  
2 Congress funded interoperability grants and lots of  
3 hearings. At the national level, both Congress and the  
4 administration, while they may differ about the approach  
5 or the way to get to the end solution, I think it's clear  
6 that all of the levels that matter understand this is a  
7 national issue and want very much to address it. I think  
8 Congressman Stupak made that very clear in his talk today.

9                   The second one is that we also agree you have to  
10 start with a needs assessment. In fact, we don't think we  
11 need a year to do that. We published it in April of this  
12 year. You'll find it on [safecomprogram.gov](http://safecomprogram.gov). It's about  
13 200 pages long, 192 to be exact. It was actually created  
14 by the first responders who said this is what we need to  
15 be able to do for scenarios that range from a routine  
16 traffic stop all the way up to a massive catastrophic  
17 event, and it steps through what they need, how much they  
18 need, the rest.

19                   Now, for purist engineers, this is not a  
20 statement of requirements as an engineer would think of  
21 one because there's also an educational mission here and  
22 that's to help this community begin to understand how to  
23 build things like this to steer industry and engineers and  
24 others. So it's a little bit of a mix between a needs  
25 document and a statement of requirements, probably more on

1 the needs than on the requirements side.

2           The last one is that I don't think there are too  
3 many players. In fact, I think all of these people need  
4 to be players. The central issue here is how do we help  
5 them to work together very well, which is why the first  
6 focus I made, when I came in to SAFECOM in the summer of  
7 last year, was that nothing else matters until the local  
8 practitioners are on board. Until they're satisfied that  
9 this is in fact the way to go and that they are in fact  
10 steering this, nothing else is possible, and to be quite  
11 frank, nothing else makes any sense because ultimately it  
12 is they who are going to use it. It is they who are  
13 virtually all of the people.

14           In any major Federal emergency response, we  
15 Federal guys like to think we're critically important, but  
16 the reality is that for 8 to 24 hours we ain't going to be  
17 there. They are. Once we arrive, we're not going to be  
18 in charge. I don't know if any of you here imagine  
19 otherwise, but just think back to the Twin Towers and  
20 imagine whether you thought anybody was going to take  
21 control away from the mayor. It's their people. It's  
22 always going to be their people.

23           If we were to take every Federal responder, all  
24 50,000 law enforcement folks -- there essentially are no  
25 medical or fire. There are tiny numbers of both of those

1 -- and we distributed them to every county in United  
2 States, we couldn't add one 24-hour-a-day, 7-day-a-week  
3 beat in each county in the United States. And in order to  
4 do that, we'd have to take the Park Police, the Capitol  
5 Police, the Defense Protective Service officers, and all  
6 the rest. The reality is where the Federal government can  
7 help is that we can help to answer the technical  
8 questions, we can help to provide technical assistance, we  
9 can help with funding and that kind of internal thing, but  
10 only -- only -- if the local guys are satisfied with the  
11 approach we're using and the way we're doing it.

12 MR. HEPNER: I'm sorry. I'm going to have to be  
13 the heavy here and just say we've obviously gone a bit  
14 over our scheduled morning session. But I did want to  
15 allow John to ask one question or at least make some  
16 comment and then at least open it up to the audience for  
17 one or two additional questions.

18 DR. PEHA: Instead of 30 minutes of questions, I  
19 think I will make one quick statement, and I'll keep it to  
20 two or three minutes and then we'll open it up.

21 We have a national system that doesn't work very  
22 well -- I mean, that's what failure of interoperability  
23 means -- and one we're spending a lot of money for, and we  
24 have spent a lot of money for and the reason is because we  
25 have 60,000 decision-makers. We need a national strategy.

1 We need lots and lots of local input. We don't need  
2 Federal people running it, but we need a national  
3 strategy.

4                   And that is only going to come if there is an  
5 office with four things: first of all, enough funding  
6 that we can really help local agencies, that they'll even  
7 return your phone calls. We need staff, expert staff,  
8 enough to provide some of the assistance that we talked  
9 about earlier in the panels. We need the ability to  
10 influence spectrum decisions, and we need a clear mandate  
11 so that this Federal office doesn't step on other Federal  
12 offices. With all due respect to David, I don't think we  
13 have an office with all four of those things. I'd like to  
14 think that everybody has taken this seriously, but we have  
15 a ways to go to get there.

16                   Can you come to the microphone?

17                   MR. HUEY: I'm Erik Huey from the Venable law  
18 firm.

19                   A quick question on comments that Congressman  
20 Stupak made. I'd be interested in getting the panel's  
21 thoughts on his proposal to partially fund  
22 interoperability through the auctioning of the spectrum.

23                   DR. PEHA: That was for anybody?

24                   MR. HUEY: For the panel, anybody who had some  
25 thoughts on that.

1 DR. STEELE: Actually it's too important for an  
2 auction. I would not fund it that way because I think we  
3 get into the greed business. This is too critical an  
4 issue not to make it a standardized, functioning funding  
5 process as opposed to almost an ad hoc funding process.

6 DR. PEHA: An auction would yield an unknown  
7 amount of money. It would be better if at least we were  
8 doing an auction that yielded an annual revenue, which we  
9 could, but so far we haven't. They yield one-time  
10 revenues for an annual problem, which is also not going to  
11 work very well.

12 MR. WERNER: I have one short question. In your  
13 GAO recommendations, are you looking at changing or  
14 recommending that they look at the performance length  
15 language? Because a lot of the language that comes out  
16 says we give it to you September 28th this year, you've  
17 got to have it done next year. If you're doing any system  
18 of any complexity, it takes you that long to negotiate a  
19 contract.

20 DR. JENKINS: That is what we have been talking  
21 to them about, whether or not these grants should be  
22 available for a longer period of time. Because they are  
23 so short, they don't really support effective planning.  
24 They really support getting the money used.

25 DR. MERRITT: If I could just make another quick

1 comment sort of reinforcing what David Boyd said about the  
2 local people. In addition to being a linguist, I actually  
3 trained for one of these community emergency response team  
4 groups in Arlington County, and there's a lot of money  
5 been put into that.

6                   One of the first things that we have come up  
7 against is, of course, that first responders are very  
8 concerned that people who are being trained to do other  
9 things are going to usurp their tasks or whatever. So as  
10 much as you're trying to set standards and requirements  
11 that first responders can use as resources to get what  
12 they need, I think we have to be sure that they can also  
13 operate autonomously when they need to.

14                   The other thing that we learned in our training,  
15 which is not only do you have that 8 to 24 hour period  
16 when the Feds aren't going to be here, for anybody who's  
17 really local, we were told that even in Arlington County,  
18 which is a small place, it was going to be 5 to 6 hours  
19 before the first responders were going to be there. So  
20 those of us who were trained for cert, we're finding that  
21 there's a lot that has to happen before first responders  
22 can even act.

23                   DR. PEHA: It looks like this is our last  
24 question. Who would like the last words on the last  
25 question?

1 (No response.)

2 MR. HEPNER: Wonderful. Okay, everyone is  
3 chatted out. Thank you.

4 Obviously, we've gone a bit long, and I don't  
5 need to tell anyone here that this topic is of such  
6 importance and such breadth that it's the type of thing  
7 that we could actually have a multi-day session on.  
8 Obviously, if there are people who are still interested in  
9 chatting with some of our panelists offline, please feel  
10 free to do so.

11 On behalf of the New Millennium Research  
12 Council, I'd like to all thank you very, very much for  
13 coming. Please say thank you again to the panel, a  
14 fantastic panel. I thank them all very, very much for  
15 coming and speaking to everyone today and hopefully moving  
16 the ball a bit forward.

17 Notes from today's event will be available on  
18 our web site, which is [www.newmillenniumresearch.org](http://www.newmillenniumresearch.org).  
19 It's long, but once you get there, it has some interesting  
20 information. We ask you to check in with us for future  
21 events and we again thank you all very, very much for  
22 coming today. Thank you.

23 (Applause.)

24 (Whereupon, at 12:38 p.m., the meeting was  
25 concluded.)

