

FEDERAL COMMUNICATIONS COMMISSION

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E911 COORDINATION INITIATIVE

Commission Hearing Room
 Federal Communications Commission
 445 12th Street SW
 Washington, DC 20554

Thursday, October 30, 2003
 9:15 a.m.

GOVERNORS' DESIGNEES PRESENT:

Craig Allred (DC)	Ken Keim (OR)
Evelyn Bailey (VT)	Raymond LaBelle (RI)
Phil Bates (UT)	Paul Mallet (TX)
John Benson (IA)	James Martin (FL)
Col. Jerry Bussell (NV)	Steve Marzolf (VA)
Clay Chan (HI)	Robert Oenning (WA)
Randy Daniels (NY)	John Patterson (KY)
Laura Demman (NE)	Ken Peterson (Navajo Nation)
Peter DeNutte (NH)	George J. Pohorilak (CT)
Paul Fahey (MA)	R.D. Porter (MO)
Doug Friez (ND)	Craig A. Reiner (NJ)
Albert E. Gervenak (ME)	Daphne Rhoe (CA)
Brian Grimm (WY)	Richard Taylor (NC)
Jenny Hansen (MT)	Kristi Turman (SD)
Anthony Haynes (TN)	Gary Underwood (AR)
Stan Herrera (AK)	Jim Walker (AL)
Bill Hitchens (GA)	Derek White (Gila River Comms.)
Barbara Jaeger (AZ)	Mark Whitlock (DE)
	Scott Whitney (MD)

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OTHER PANELISTS PRESENT:

Kathleen Abernathy	Richard Leicht
Jonathon Adelstein	Ken Lowden
Mike Amorosa	George Marble
Greg Ballentine	Kevin McCracken
Eugenie Barton	John McMillan
Bobby Brown	Stephen Meer
Bill Cade	Susan Miller
Ed Cameron	Jackie Mines
Gregory Cooke	John Muleta
Bob Currier	Jonas Neihardt
Charles Davidson	Jim Nixon
Drew Dawson	Gustavo Pavon
Tim Duffy	Ernie Peterson
Michael Fischel	Nancy Pollock
Wayne Gasaway	Scott Pomerantz
Jim Goerke	Jack Potter
Jeff Goldthorp	Michael K. Powell
Kyle Gruis	Arthur Prest
John Healy	Jeff Robertson
Allen Holder	Ray Scheppach
Connie Hughes	Catherine Seidel
Bob Johns	K. Dane Snowden
David Jones	Richard Taylor
David Koon	Congressman Fred Upton
Karl Korsmo	Jim Wickham
	Jerry Wilke

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I-N-D-E-X

Opening Statement by K. Dane Snowden, Chief, Consumer and Governmental Affairs Bureau	5
Presentation by Mr. Lowden, Indiana Wireless E911 Advisory Board	15
Introduction of Bobby Brown Wireless Telecommunications Bureau	27
Remarks by Commissioner Adelstein	42
Presentation by Jerry Wilke, Hickory Tech Wireless	47
Presentation by Allen Holder, Lincoln City, West Virginia PSAP	62
Presentation by Jackie Mines, Qwest	69
Presentation by Kyle Gruis, Rural Cellular Corporation	76
Presentation by George Marble, Andrew Corporation	99
Presentation by Art Prest, RFB Cellular and Alpine PCS	112
Presentation by Mike Amarosa, TruePosition	122
Presentation by Richard Taylor, North Carolina Office of Information Technology Services	127
Presentation by Ed Cameron, Rural Utility Services	134
Remarks by Jeff Goldthorp, Office of Engineering and Technology	139
Presentation by John Healy, Office of Engineering and Technology	140
Presentation by Gustavo Pavon,	

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TruePosition on Behalf of ESIF 160

Remarks by Commissioner Kathleen Abernathy 176

Presentation by David Jones,
 Director Emergency Services,
 Spartanburg, South Carolina 178

Presentation by Dr. Jack Potter,
 ComCARE Alliance 183

Presentation by Jeff Robertson,,
 CML Emergency Services 201

Presentation by Craig Allred,
 U.S. Department of Transportation 207

Presentation by Scott Pomerantz,
 Global Locate 212

Presentation by Stephen Meer,
 Intrado 215

Presentation by Jonas Neihardt,
 Qualcomm 221

Presentation by Mike Amarosa,
 TruePosition 224

Final Remarks and Adjournment by John Muleta,
 Chief, Wireless Telecommunications Bureau.. 231

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P-R-O-C-E-E-D-I-N-G-S

9:16 a.m.

MODERATOR SNOWDEN: Good morning. My name is Dane Snowden, and I would like to introduce myself.

I am the Chief of the Consumer and Government Affairs Bureau here at the FCC. I want to welcome you to the second day of the Commission's Second Wireless Enhanced 911 coordination initiative. That's a lot of seconds in there. It is my distinct pleasure to be here and to extend a special welcome to the representatives from state and tribal governments from across the country. We appreciate your interest and the time and the resources you have expended to come to be with us here in Washington today. We're also happy that the sun has come back out, which makes a lot of us happy.

I also want to welcome the members of the public safety community, and representatives of the wireless industry, the equipment manufacturing industry, and the location-based technology industry.

Your participation is key and very much appreciated.

As everyone here knows, wireless E911 is a complex issue. Successful deployment requires the coordination and cooperation of wireless carriers, LECs, the public safety community, equipment

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1 manufacturers, and technology vendors. To facilitate
2 this coordination and cooperation, in April of this
3 year, the commission convened the first E911
4 Coordination Initiative. The April meeting raised
5 many key topical issues and resulted in a positive
6 exchange of information.

7 This second initiative contains, in that
8 vein, and takes us a step further in solving some of
9 the key questions. However, our focus is not just to
10 eliminate the issues, but also to identify possible
11 solutions through interactive discussions with our
12 collective expertise. As Chairman Powell said
13 yesterday, the FCC wants to move from an era of
14 cooperation to an era of accomplishment to an era of
15 achievement.

16 Today the agenda will discuss four key
17 issues. The first, consumer issues, the second, E911
18 deployment issues affecting rural carriers, and the
19 third, technical issues and the fourth, the future of
20 public safety. In each instance, following the forum
21 presentations, we'll allow for questions and answers.

22 Our goal today for all of the panels, for
23 all of the discussions, is to have a lively debate and
24 a frequent exchange of information going back and
25 forth. Again, on behalf of Chairman Powell and the

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1 Commissioners, I would like to welcome everyone here
2 and thank you again for joining us today.

3 Now, I would like to turn to our first
4 panel on consumer issues. This morning I am joined by
5 Mr. Ken Lowden, who is the Director of Steuben County,
6 Indiana Communications, who will discuss consumer
7 outreach in the State of Indiana. He will be followed
8 by MR. Bobby Brown, from the FCC's Wireless
9 Telecommunications Bureau, who will give you an update
10 on deployment status, electronic filing of quarterly
11 reports, and the FCC issued reports on E911 matters.
12 We will take questions from the audience as I said
13 earlier.

14 I will kick off the panel with a
15 discussion on the FCC's consumer outreach initiatives.

16 Oftentimes when contemplating the wireless E911
17 issue, we focus on how complex the issue is, and how
18 it requires a coordinated role-out by all
19 stakeholders, wireless, wire line, public safety,
20 technology manufacturers, and vendors. Sometimes in
21 the important technical and legal discussions that
22 take place, we ignore the obvious, which is that
23 wireless E911 is at it's core, a consumer issue.

24 The number of 911 calls placed by people
25 using wireless phones has more than doubled since 1995

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1 to over 50 million a year. Public safety personnel
2 estimate that about 30 percent of the many millions of
3 911 calls they receive daily are placed from wireless
4 phones, and that percentage is only growing. With the
5 transition of wireless service from a luxury service
6 to a necessity, consumer expectation about the
7 features and functions of their wireless phone has
8 only increased. While wireless phones are an
9 important public safety tool, they also create unique
10 challenges for public safety and emergency response
11 personnel and for the wireless service providers.

12 The success of E911 in the wire line
13 context has raised consumer expectations, meaning
14 American consumers are used to wire line enhanced 911,
15 and they expect the same capabilities for their
16 wireless telephones. This elevated expectation makes
17 it impossible for consumers to appreciate some of the
18 limitations of wireless phones and wireless E911.
19 Consumers are expecting the wireless phones to work
20 like their hard wire phones in their homes, but we,
21 all of us here, we all know their safety may be
22 directly affected by how much they know about wireless
23 E911. This is exactly why consumer awareness is
24 essential.

25 Collectively we have made great progress

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1 toward meeting consumers' expectations. Phase one of
2 wireless E911 is well underway and the nation's
3 largest wireless service providers are deploying phase
4 two. As we all know, however, we are not there yet.
5 Because wireless 911 locations information will not be
6 available everywhere immediately, it is important for
7 consumers calling 911 from wireless phones to know the
8 advantages and the limitations they can expect when
9 making that call. Thus, the FCC, through the Consumer
10 and Government Affairs Bureau, is engaged in a
11 strategic deliberate and targeted consumer outreach
12 campaign. The overarching purpose of the campaign is
13 to educate consumers about the advantages and
14 challenges of wireless E911, as well as what they can
15 expect from the wireless carriers right now.

16 For example, our consumer fact sheet on
17 wireless 911 services provides consumers with a
18 checklist of what they should tell an emergency
19 response call taker when making a 911 call from their
20 cell phone. Specifically, we inform them to tell the
21 emergency operator the location of the emergency right
22 away. Give the emergency operator his or her wireless
23 phone number so that the operator can call back if the
24 call is unexpectedly disconnected. Use designated
25 non-emergency numbers to get help in non-life-

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1 threatening situations to avoid unnecessary calls to
2 emergency services, and, of course, refrain from
3 programming wireless phones to automatically dial 911
4 when one button, such as the nine key, is pressed to
5 avoid unintentional 911 calls.

6 We have also provided consumers with basic
7 information about the Commission's 911 rules, which
8 wireless services are subject to the rules, and how
9 the rules operate. This type of information is
10 conveyed through the campaign. The Commission's E911
11 consumer vision targets reaching consumers through key
12 consumer audiences. First, consumers and public
13 interest organizations such as the Consumer Federation
14 of America, the Consumers' Union, the National
15 Association of State Utility
16 Consumer Advocates, and the National Association of
17 Consumer Agency Administrators. Second, organizations
18 representing specific consumer constituencies such as
19 AARP, NAACP, LaRaza, and the National Association of
20 the Deaf, and third, key organizations representing
21 state, local, and tribal governments, including the
22 National Governors Association, the National
23 Conference of State Legislators, NARUC, the U.S.
24 Conference of Mayors, the National League of Cities,
25 the National Congress of American Indians, and of

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1 course, the State Governors and Tribal Designees.

2 In partnership with these key
3 organizations, we are working to educate their members
4 about wireless E911, but we know we cannot do it
5 alone. Finally, we are using a number of outreach
6 tools to engage the key stakeholder organizations.
7 The Commission has long used the Web as a way to make
8 information available to consumers. The FCC maintains
9 a site devoted to the issue of wireless E911 to make
10 it easy for those with an interest to find information
11 on the worldwide Web. In addition, the Commission's
12 fact sheets on wireless 911 services and communicating
13 during emergencies are available on the FCC's Web
14 site. We are looking at other ways in which we can
15 improve our E911 presence and the usefulness of those
16 sites as an informational clearing house for
17 consumers.

18 In addition to making information
19 available on the Web, the Consumer and Government
20 Affairs Bureau also will use direct mailings to
21 consumer organizations and key consumer constituencies
22 to reach consumers with information about E911. Our
23 outreach materials include consumer fact sheets,
24 consumer advisories, and relevant FCC publications
25 such as the popular, What You Should Know About

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1 Wireless Telephones". We design our publications to
2 address issues or questions that we learn of from
3 consumers in the course of our outreach and calls to
4 our consumer centers.

5 The FCC staff have participated in many
6 conferences and workshops hosted by the public safety
7 community and we plan to do more, and we found that
8 these are an effective means of getting information to
9 consumers. We look for opportunities to participate
10 in conferences of consumer organizations and key
11 stakeholder groups, so please keep us in mind as we
12 move forward. In addition, we take our FCC exhibit
13 booth to as many conferences as possible and use the
14 opportunity to talk with consumers on a one-on-one
15 basis. We have our own traveling road show we like to
16 say.

17 For example, we recently participated in
18 the LaRaza Conference, addressed the National
19 Association of Consumer Agency Administrators. We
20 have also discussed the wireless E911 issue with the
21 National Association of State Utility Consumer
22 Advocates, the National Congress of American Indians,
23 and several disability rights organizations which play
24 a key role in this as well.

25 Working in cooperation with public safety

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1 and industry partners, we are exploring the
2 possibility of developing an online E911 training
3 session. The training session would be hands-on
4 training tool aimed at providing information about
5 wireless E911 to specific target audiences to help
6 them understand the differences between basic 9111 and
7 E911. I think I had one too many ones in that last
8 one. Wire line and wireless E911 and the current
9 state of wireless E911 deployment -- a lot of ones in
10 that.

11 As you can tell, the FCC has developed a
12 comprehensive strategy of reaching out to the American
13 consumer on this critical issue. We believe that
14 through the combination of our direct outreach efforts
15 and our partnership with key stakeholder groups,
16 public safety organizations, and state and local and
17 tribal governments, we can make sure that consumers
18 are fully informed about this issue. After all, E911
19 is an issue for and about consumers.

20 If there are any questions for me, I would
21 be happy to take them. If not, I would like to go
22 directly to our first panel. Yes, ma'am?

23 MS. JAEGER: Barbara Jaegers, State of
24 Arizona. (Question posed by off-microphone audience
25 member.)

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1 MODERATOR SNOWDEN: That is an issue that
2 we're looking at now. It's too early for me to say
3 exactly what or if we're going to do anything, but
4 that is an issue that has been teed up here at the
5 Commission.

6 MS. JAEGER: (Off-microphone)

7 MODERATOR SNOWDEN: Well, that would be
8 asking -- you're asking me to make a policy decision
9 right here on the stage, and I don't think I would do
10 that today. I have a mortgage, I have a car payment,
11 and I like my job, and I'm not going to get ahead of
12 my chairman on that particular issue.

13 MS. JAEGER: (Off-microphone)

14 MODERATOR SNOWDEN: I will say that it's
15 an issue that has been teed up before the commission
16 and we're looking at it currently.

17 MS. JAEGER: Thank you.

18 MODERATOR SNOWDEN: Any other questions
19 that don't put my job in jeopardy? It was a fair
20 question. You had the chairman here yesterday. That
21 was a question for him.

22 MS. JAEGER: (Off-microphone)

23 MODERATOR SNOWDEN: Well, with that, thank
24 you very much for your question. Are there any other
25 questions? Well, thank you.

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1 I would like to introduce Mr. Kenneth D.
2 Lowden, who is Director of Steuben County, Indiana
3 Communication who is a fellow Hoosier. Kenneth served
4 as director of the Steuben County, Indiana
5 Communication Center for the past 14 years and has
6 been involved in public safety communication for more
7 than 19 years. He is a past president of Indiana
8 NENA, holding several positions within the
9 organization. He was NENA's representative and lead
10 negotiator in drafting and lobbying for Indiana's
11 wireless E911 legislation. Upon passage of the
12 legislation, Ken was appointed by Governor Frank
13 O'Bannon to the Indiana Wireless E911 Advisory Board
14 and serves as the board's vice-chairman. He is also a
15 member of NENA, APCO, and several other local
16 fraternal and civic organizations. Ken?

17 MR. LOWDEN: Thanks Dane. It's always
18 good to be introduced by a fellow Hoosier. As Dane
19 said, I serve as the Vice-Chairman of the Indiana
20 Wireless 911 Board, and I'm pleased to be here today
21 to represent our board chairman and state treasurer,
22 Tim Berry. As many of you know, Treasurer Berry has
23 been committed to wireless 911 and serves throughout
24 the country on various APCO and NENA, NENA SWAT
25 initially and unfortunately he could not be here

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1 today, so I'm going to pinch it for him this morning.

2 All of us gathered here today obviously
3 have one thing in mind, and that's to forward the E911
4 wireless phase one and phase two at all levels. It
5 involves not only people like myself that's in the
6 local level, but it involves the wireless carriers, it
7 involves the FCC, it involves a lot of other groups.
8 It also requires a lot of experience, a lot of
9 expertise, and as you all know, E911 is not rocket
10 science, but it also remains complicated and at many
11 times is a convoluted undertaking.

12 You can imagine how the consumer feels.
13 As consumers we're overloaded with information coming
14 from the newspapers, from TV, from radio, Internet,
15 and most of us, or many of us, are very numb to this
16 and ignore an awful lot of things that we do. It's no
17 different when it comes to 911 or even all telephones
18 in general. When we first contemplated this public
19 awareness, public outreach campaign in the State of
20 Indiana, I have to admit we were really a little naive
21 on how we were going to do this. We thought, just
22 throw the information out to the public, they'll take
23 it, they'll run with it, they'll understand, no
24 problem, it's a pretty simple process. Well, I really
25 wish it was that easy, because we were pretty naive.

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1 There were several issues that we took in
2 the State of Indiana to talk about the development in
3 our public awareness of this campaign, and I'd like to
4 discuss those issues with you this morning.

5 The introduction of 911 as the universal
6 emergency number was accomplished by an intense
7 education and awareness effort nationwide. Let me
8 state the very obvious. It worked. People have been
9 conditioned, they expect to know where you're at when
10 you dial 911 on a land-line telephone, and they expect
11 the very same thing in most cases from their wireless.

12 It's a tiny bit of peace of mind in an emergency
13 situation that the consumer expects.

14 Number two, this is not a criticism of the
15 wireless industry, but rather a reality of the
16 environment. Wireless carriers find themselves in a
17 very intense, hyper-competitive marketplace trying to
18 distinguish themselves from each and every other
19 wireless carrier, they work on pricing, calling plans,
20 phones, features, and all those kinds of things,
21 however, wireless carriers sell consumers on the warm
22 and the fuzzy. The intimacy of communication, parents
23 staying in touch with their kids at home, at college,
24 friends staying in touch with one another without
25 annoying parents, and other things, the mobility, the

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1 ease, the comfort of wireless communications.

2 Consumers' perception of all this given
3 points one and two, naturally a consumer would expect
4 the peace of mind that every call they make will get
5 911 and someone will be able to locate them and find
6 them and provide them with whatever emergency service
7 that they want.

8 The last thing that we dealt with in our
9 campaign was, how to fight through the overload of
10 information. With more information delivered, it is
11 an interesting way to compel us consumers will pay
12 attention, take action, adjust the way they think. It
13 was not an easy task for a well-funded effort, let
14 alone one undertaking with a limited budget.

15 With those issues in mind, we developed a
16 public awareness campaign in the spring of 2002 and
17 2003. We recognized early on that we did not have the
18 expertise to complete this by ourselves. We brought
19 in a public awareness, public relations firm to help
20 us develop this program, and develop a concise message
21 to effectively communicate this to the public.
22 Creating a concise yet meaningful message was somewhat
23 of a difficult prospect. Remember there are very many
24 different well-established perceptions in place in
25 respect to 911. The ability to get in touch with

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1 anyone, anywhere, at any time.

2 In addition, there was no villain. We did
3 not intend to beat up the wireless carrier. We did
4 not want to beat up public safety. The message boiled
5 down to safety and information, inform consumers of
6 the benefits and unfortunately, limitations of
7 wireless phones in an emergency in minutes can mean
8 the difference between life and death, and many of us,
9 they run PSAPs, can certainly relate to that.

10 But we thought we also needed a partner.
11 We needed someone to help us communicate this message.

12 A partnership with an organization that had a solid
13 reputation, credibility, a mission consistent with our
14 efforts, and organization that could share some of the
15 financial burden, and quite honestly, we found that
16 and much more in the American Heart Association. The
17 American Heart Association has an impeccable
18 reputation, provided the campaign with instant and
19 incredible credibility. Their mission and efforts
20 complement what we wanted to do and the information we
21 wanted to get to the consumer.

22 We also recognized that due to our limited
23 budget, that we immediately ruled out television and
24 print. In working with a public relations firm and
25 EMMIS Communications -- EMMIS, by the way, is the

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1 flagship station, WIBC in Indianapolis, Indiana, it
2 has a network throughout the State of Indiana, it's a
3 news provider throughout to many, many stations in the
4 State of Indiana. We successfully developed radio
5 spots effectively communicating the basic message in
6 60 seconds.

7 In a turn of events, we were able to
8 secure the perfect person to help deliver our message,
9 and bring additional profile to our message. That
10 person was Sam Hornish, Jr., a championship-winning
11 Indy race car driver and how appropriate for the State
12 of Indiana.

13 What I would like to do real quick is I
14 have two spots that I would like to play for you, of
15 our radio spots that we had, if I can get the mouse to
16 work.

17 RADIO AUDIO 1:

18 911, what's your emergency?

19 Ma'am, I have this incredible pain in my
20 chest. I think I'm having a heart attack.

21 Sir, what is your location?

22 I don't know. I don't know. I don't know
23 where I am. I don't --

24 Sir, you're on a cell phone and it's not
25 the same as your home phone.

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1 It's pitch black out here. Oh, the pain
2 is spreading to my shoulder. Oh, my God, am I going
3 to die?

4 Sir, stay with me. I'm going to need your
5 help to find you.

6 ANNOUNCER: Your cell phone coverage area,
7 and your 911 coverage area, are not the same. To find
8 out if your carrier provides 911 emergency coverage,
9 log on to 911coverage.org. That's nine, the numbers
10 one, one, coverage dot org. Do not call 911 to find
11 out your coverage. Simply log on to 911coverage.org.

12 From the American Heart Association and the 911
13 Wireless Board, 911coverage.org. In an emergency,
14 every minute matters. Can your cell phone save your
15 life in an emergency?

16 RADIO AUDIO 2:

17 MR. HORNISH: This is Sam Hornish, Jr.
18 Winning the Indy racing league championship two years
19 in a row takes teamwork and communication. On the
20 racetrack I rely on my spotters and crew to tell me
21 whenever there is a yellow flag because they know
22 everyone's location on the track. Being able to
23 locate danger is a key to winning, and to my safety.

24 MR. BERRY: That's right, Sam.
25 Unfortunately, if you're not a race car driver, you

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1 don't have spotters and a crew. I'm Indiana Wireless
2 911 Board Chairman and State Treasurer Tim Berry.
3 People buy wireless phones with the expectation of
4 safety and security. What if a loved one suffered a
5 heart attack or was in a car accident, needing
6 emergency help when every minute matters. Could a
7 wireless phone save their lives? Only if emergency
8 workers can locate them. Find out more and ask the
9 right questions when buying a wireless phone. Visit
10 our Web site, 911coverage.org. Indiana is at the
11 front of the pack for new technology that can help
12 save lives, but there's still a long race ahead with
13 very high stakes. Stay in the race. Visit
14 911coverage.org. Be safer. Be informed.

15 MR. LOWDEN: That's the two -- we
16 actually did four spots, or four radio commercials,
17 each of them 60 seconds in length, and that's two of
18 the four. While the radio spots deliver a fair amount
19 of information, we recognize that there need to be
20 another way to get the information out, and also other
21 information had to accompany the message that we were
22 trying to do in our spots, and thank goodness for the
23 Internet. We develop our Web site that you heard on
24 the radio spots. It's an inexpensive medium. We have
25 information on there concerning each carrier. We have

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1 which counties in fact deployed with Phase One and
2 Phase Two, and we also have our radio spots and much
3 other information on there, so you're certainly
4 welcome to go to our Web site which is
5 www.911coverage.org.

6 Obviously timing was also very important.

7 We launched our month-long campaigns obviously during
8 the Indianapolis 500 and the Memorial Day weekend,
9 which is obviously a small little racing event that we
10 have in the State of Indiana. It's a traditional
11 kick-off in the State of Indiana for summer travel, and
12 for most people that are going. WBIC is the flagship
13 station for the Indianapolis 500, it has pull days,
14 it's the biggest station for pull day broadcasting all
15 over the world. So we maintained a strong presence on
16 WBIC and the Indiana network for the entire month of
17 May, up to and including the race.

18 Last but not least, I'd like to talk about
19 some free and actually media that we in Indiana were
20 able to generate during this public awareness
21 campaign, and I'd like to think it's solely due to the
22 compelling nature of the message we deliver, the story
23 that we tell. Certainly that's part of it, but a huge
24 reason is State Treasurer Tim Berry. In Indiana, we
25 have a unique ability to draw attention to our efforts

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1 because of a statewide elected official. I believe we
2 are the only state in the United States that has a
3 statewide elected official as chairman of our E911
4 wireless board. He is our face, he is our state
5 spokesman for the media that we can turn to. We've
6 been effective in leveraging his face, his message,
7 his information, because he made numerous trips
8 throughout the State of Indiana during that month.
9 Our state treasurer continues to make trips on a
10 regular basis throughout the State of Indiana, talking
11 about 911. Every time we have a new deployment in a
12 Phase Two situation, or even in Phase One, Chairman
13 Berry was out there doing press conferences all over
14 the state.

15 Finally, I would be remiss if I didn't
16 briefly talk about Indiana's PSAPs. To date, we have,
17 as a wireless board, we have disbursed over \$35
18 million to the PSAPs for the Phase One and Phase Two
19 efforts. In addition to the customary uses for
20 wireless 911 funds, Indiana's statute allows
21 specifically for PSAPs to use the money for public
22 awareness and information. I'm also happy to tell you
23 that 70 of 90 counties in the State of Indiana
24 presently have Phase Two with at least one wireless
25 carrier. So Indiana is certainly long on its way to

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1 becoming 100 percent state in Phase Two.

2 The challenges are many, the resources are
3 few, and the need is great. Education is critical and
4 we're happy to be leading the effort in the State of
5 Indiana. Again, thank you to the Commission, thank
6 you, Dane, for this important gathering, and with
7 that, I'd be happy to answer any questions anybody
8 would have. Yes?

9 UNMIKED AUDIENCE MEMBER: (Off-microphone.)

10 MR. LOWDEN: You know, to be honest with
11 you, Dave, I don't know that we have that information.

12 I know that we were talking about trying to get that,
13 but I don't know if we ever did it. We do know that
14 as we travel, Chairman Berry has said that, you know,
15 people are talking about it. They've heard it, and of
16 course, in Indiana during the month of May when you
17 have the lead station doing the race, I mean, it was
18 just on everywhere. Yes?

19 UNMIKED AUDIENCE MEMBER: Ken, how much of
20 a financial investment was there?

21 MR. LOWDEN: I don't know. I'll have to
22 ask Chris. Where are you at? I'm not sure. Chris
23 actually -- our executive director actually put the
24 financials together and quite honestly, the Board, we
25 approved the whole entire package, but I don't

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1 remember exactly how we put that together. I'd be
2 more than happy to get it for you, but --

3 UNMIKED AUDIENCE MEMBER: Who owns the Web
4 site? You've got a great one there.

5 MR. LOWDEN: That's ours, the State of
6 Indiana Wireless Board, and I will tell you this,
7 we're willing to try to work with anybody if, you
8 know, if we want to figure out something to -- how we
9 make that, you know, to everybody, we're willing to --
10 you know, we don't think we need to hog that if you
11 will, because it is a good site, the name.

12 UNMIKED AUDIENCE MEMBER: Well, we do a
13 similar thing, but ours is tied in behind (inaudible).

14 MR. LOWDEN: Yeah, this goes right
15 straight to the --

16 UNMIKED AUDIENCE MEMBER: (Inaudible.)

17 MR. LOWDEN: Yes, Gary?

18 UNMIKED AUDIENCE MEMBER: Ken, can you
19 give any advice to all of us here about how you
20 started the relationship with the non-profit
21 organizations and why you chose them, and how it
22 worked?

23 MR. LOWDEN: Actually, we were here in
24 Washington actually with a meeting with NENA and Steve
25 Seits and they introduced us to the American Heart

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1 Association, and the local office said, you know,
2 we're looking for something like this, and they put us
3 in touch with the Indiana chapter or the Indiana
4 office. Boy, I tell you what, they were more than
5 enthusiastic to join us, and quite frankly, we didn't
6 even look for anybody else because they were so
7 excited about, you know, getting that message out with
8 us.

9 MR. LOWDEN: Thank you.

10 MODERATOR SNOWDEN: Thank you very much,
11 Ken. It was very insightful and it's always good to
12 always share a stage with a fellow Hoosier. It is my
13 pleasure now to introduce to you all Mr. Bobby Brown,
14 who is a program analyst for the data management
15 division of the Wireless Telecommunications Bureau, he
16 of the FCC. Mr. Brown is the project manager of the
17 wireless bureau's Internet Web site, he has served at
18 the Commission since April of 1995, after retiring
19 from the United States Air Force. So welcome very
20 much, soldier, or airman.

21 MR. BROWN: Good morning, everyone. Okay.

22 As I said, good morning, everyone. My name is Bobby
23 Brown. I just wanted to say quickly that my primary
24 job is working on the wireless Web site, so I'm happy
25 to see all of the handouts and all that good stuff

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1 that you were given when you came in, and I would like
2 to make a pitch that if you see something that's of
3 value, let us know. If you see something that you
4 would like to see that's not there, let us know that
5 too, and I'll quickly throw out wtweb@fcc.gov is an
6 e-mail box that comes to me and we can talk to you
7 about your suggestions.

8 I'm here today to talk to you about the
9 basically deployment status, electronic filing of
10 quarterly reports, and the FCC issued reports. Back
11 in April, John Muleta, our bureau chief, talked to the
12 first gathering about goals for a database that would
13 help the public in tracking E911 deployment. The
14 goals he mentioned to us at that time were more
15 accurate and efficient tracking of deployment, a
16 greater ability to rapidly identify trends and
17 barriers, especially on a geographic basis, more data
18 available to the public, and additional guidance to
19 assist carriers in filing those reports.

20 One of the things we wanted to accomplish
21 is the stakeholder cooperation that's involved in this
22 effort to collaboration and coordination between all
23 these entities that have to deal with this process.
24 SS many of you know, back in June of this year, we
25 issued a public notice giving carriers instruction on

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1 filing their quarterly reports, starting with the
2 August reports. That included an additional Excel
3 spreadsheet that we defined fields for, and gave
4 instructions on how to fill it out. This spreadsheet
5 we are going to sue for a database which, of course,
6 will give you better and more accurate information,
7 and that's where this cooperation is heading, to give
8 accurate, reliable data that's in a consistent format
9 that we've already identified.

10 Also, we want to go to a place where we're
11 giving consistent terms. In our PSAP registry, we
12 want to make sure that the PSAP ID's flow with
13 everything, the information that you're providing, the
14 carriers are providing to the government. Also that
15 the deployment statuses that you're giving, everyone
16 understands what those words mean and give that
17 information accurately. We have started working with
18 NENA and the states to obtain accurate PSAP lists to
19 facilitate that. This, of course, will lead to
20 accurate, relevant reports, statistical reports, that
21 we can post to our Web site and you will have, of
22 course, access to.

23 We've had some successes. The August 1st
24 report was the first time we started this, of course,
25 and for the most part, the carriers were -- they did a

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1 great job in providing the information that we wanted
2 in the format that we requested, and we were really
3 happy to see that. The August 1st reports did
4 indicate that we had significant Phase Two deployment
5 progress in the states that are mentioned here. Many
6 of the states were mentioned in the Chairman's remarks
7 yesterday.

8 Also, over 80 percent of the Phase One
9 requests made were completed and over 50 percent of
10 the Phase Two requests were completed.

11 We also had some challenges. As I
12 mentioned briefly before, the PSAP registry, we were -
13 - we had found that they were -- the listing was over-
14 inclusive, meaning that many of the entries that we
15 had PSAP ID numbers for were not people that actually
16 took calls, so that's going to be -- have to be
17 something we have to resolve, so that it skews the
18 percentages when you look at deployment versus
19 requests.

20 Electronic filing, we found that a lot of
21 carriers had trouble with our Excel spreadsheet,
22 meaning the specific instruction that we gave for
23 filing it out was not followed, which required us to
24 do manual entries, a kind of a back and forth thing
25 that really wasn't something that we thought was

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1 necessary, but because we didn't get the information
2 in the correct format, we had to do that. So we want
3 to stress that that's something we really need to make
4 sure of, is that the carriers give us the information
5 in the format that we gave to them, and we are happy
6 to work with you if that's going to be a problem for
7 them.

8 Exception reports are reports that we will
9 send to the carriers which specify what these specific
10 problems are and then we can start that back and forth
11 that needs to happen, and of course, the reason that
12 we have not as of yet posted our FCC reports to the
13 Web site is because we're still working the data,
14 scrubbing the data, making sure that we have accurate
15 and reliable information before we post anything.

16 What's next? First of all, we need to
17 work with NENA, the states, to clean up or correct
18 discrepancies, resolve issues on the PSAP registry so
19 we have the best information for the carriers to use
20 in order to send back to the government with their own
21 information. The November 1st electronic filings are
22 almost due, so we're going to use those filings and go
23 th rough this process that I just explained to get
24 good information that's relevant to you, and get that
25 on the site. These exception reports will be the

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1 dialogue that we use, the back and forth, to the
2 carriers to make sure that we resolve all the issues
3 and all the problems.

4 At that time, when we have got the good
5 data and looked at it, and decided what relevant
6 reports we are going to deliver, we will deliver those
7 reports and post them on the FCC's Web site. I'll be
8 happy to answer any questions you have. Yes?

9 UNIDENTIFIED SPEAKER: Can I ask you a
10 favor? Go to the mic. We want to make sure that our
11 folks who are watching this on the Web can actually
12 hear.

13 MS. BAILEY: I'm Evelyn Bailey. You
14 mentioned that you were going to be working with the
15 states to make sure that the information that you have
16 for us is accurate. Could you elaborate on when and
17 how that's going to take place? I notice you gave us
18 a report in the packages of information that you left
19 for us yesterday. Is that something that we're
20 supposed to check and return to you?

21 MR. BROWN: Lauren, I don't know what
22 instruction was given with those handouts that you
23 gave.

24 MS. PATRICH: I'm trying to think of the
25 right quip, but you figured it out.

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1 MR. BROWN: Good.

2 MS. PATRICH: Yes. We handed out a list
3 of the PSAPs as we know the list, in each state, to
4 each of the designees as they came in, and we intended
5 to follow up after the meeting, once we saw how the
6 meeting went, on a number of things where we wanted to
7 keep a running dialogue with the governors' designees
8 and obviously the first thing we need to do was
9 clarify, is this the right list of PSAPs and which of
10 these take calls, which of these actually take 911
11 calls. That will help us narrow down to primary PSAPs
12 on our list. That's exactly where we're going with
13 this. Thank you, Evelyn, for bringing it up.

14 MR. OENNING: Well, thank you. You're the
15 ones that are going to walk around and talk. I've got
16 piles of them here. This is a little bit off, and I
17 don't know who wants to answer it, but one of the
18 things that we're faced with in the states, and I
19 think nationally, is getting decent data to work with
20 on some of the trends for the future, and it's very
21 critical to us as we're going out there working with
22 politicians or just projecting budgets, and I just
23 wonder how the FCC if they've looking forward toward
24 issues such as the migration from wire line to
25 wireless and getting to the one place, the FCC getting

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1 us some numbers we could work with that would give us
2 some idea of their projection of what happens, and
3 then as it does occur, some information on that,
4 because that's going to affect our tax base, it's
5 going to affect many things. I'd like to see that, as
6 long as -- as well as just simple wireless growth
7 projections, because, you know, we get those from all
8 over, they're very fragmented, each carrier does their
9 own, and getting -- and with churn figured in who
10 knows what they are, and I'd like someplace to get
11 some data that projects reasonably reliable or at
12 least looks backward on all of these issues so we
13 could go to legislators and say, here's what we we're
14 looking at a year from now or two years from now.

15 MR. BROWN: Good Question. I don't know
16 the answer to your question. What we can do from my
17 perspective is, one of the things we need to hear from
18 you folks is just what you said, is what reports do
19 you need, and are we gathering the information that we
20 need to answer your questions, and that I don't know.

21 If there's someone else that can answer this --

22 MS. PATRICH: Was there -- I'll go ahead
23 and answer what I know of that, and one thing we are
24 certainly are in the business of industry an analysis,
25 and you may, if you haven't already, looked at it,

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1 want to take a look at our annual CRMS competition
2 report that analyzes the state of the industry on a
3 yearly basis. It comes out usually in the summer, and
4 in fact, we just released one a couple of months ago.

5 I think it's the eighth annual, so you do have a
6 series of reports you can look at to see how we have
7 analyzed where the CRMS industry is going. So we
8 certainly are analyzing what has happened. I'm not
9 sure we will ever be in a business of predicting
10 what's going to happen to the extent that you really
11 need it, Bob, but --

12 MR. GROSH: Yeah, and then I might mention
13 though if you're asking about data on wireless growth,
14 there is information on that. The CTIA, the trade
15 association for the wireless industry, the Cellular
16 Telecommunications and Internet Association, has data
17 tracking growth in wireless subscribers and calls and
18 also 911 calls on their Web site, www.wow-com.com.
19 I'm not sure just the specific page, but they have
20 information that will allow you to at least see what
21 the history has been of wireless calls and 911 calls.

22 MR. BROWN: And if you go to the Wireless
23 Bureau's home page on the left side of the navigation,
24 you'll see the competition reports. You can click
25 there and get it.

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1 MS. SEXTON: Elaine Sexton from Georgia,
2 and I have a question concerning as far as the
3 deployment information you were using, what
4 constitutes deployment as far as these reports are
5 concerned, and also where does that information come
6 from?

7 MR. BROWN: The information comes from the
8 carriers, but -- go ahead.

9 MS. SEXTON: That answers my question.

10 MS. PATRICH: Yes, the information that
11 we have comes from the reports that are filed
12 quarterly by the carriers.

13 MS. SEXTON: I can assure you that Georgia
14 is a long way from being ready. We certainly don't
15 have significant Phase Two quarterlies.

16 MS. PATRICH: Well, then that's something
17 we should talk about off-line.

18 MS. SEXTON: Good.

19 MR. BROWN: Thank you.

20 MODERATOR SNOWDEN: AS you can tell,
21 there are many areas and many ways to look at the
22 challenges that we're facing when it comes to
23 deployment, et cetera, and I think the more
24 information that the Commission has at its fingertips,
25 the issue of how do we track the numbers, where do we

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1 get the numbers from, those are all great questions to
2 bring to our attention, particularly if there are
3 discrepancies and so if there are other issues that we
4 need to be aware of, if you're not comfortable saying
5 it to the larger group, please pull someone from the
6 FCC aside and let's have that dialogue so that we can
7 get on the right path to make sure that we pull all
8 parties together to insure that we have successful
9 deployment across the board.

10 I think that the -- as you can tell, we're
11 starting with the consumer as we look at these issues,
12 because ultimately the consumers are the ones who use
13 and need this service so desperately, and I think the
14 -- I want to thank our two panelists who joined me
15 here today for their good work highlighting some good
16 examples of how this can be done to get information
17 out to the American public. So again, I thank both of
18 you, and I thank all of you for your time, so thank
19 you guys.

20 MR. BROWN: Thank you.

21 MODERATOR SNOWDEN: Before we break
22 though, I did want to ask. Are there any other
23 questions that -- or any success stories or challenges
24 that some other states may have encountered that would
25 be helpful for the larger group to be aware of, or for

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1 example, some of the carriers that are in the room.
2 If you have any stories that you would like to share
3 for us to be aware of, as well, to a larger group.
4 Everyone is shy and bashful this morning, I see.
5 Don't let the room intimidate you. Yes, sir. If you
6 could just go to a microphone so we can have someone -
7 -

8 MR. HOBSON: I'm Jim Hobson. I'm here on
9 behalf of NENA this morning, and while I pull away
10 from the mic a moment to pull this out, I just wanted
11 to indicate that by a happenstance of good luck here,
12 we have a NENA news publication dedicated to 911
13 public education. We should have had these out on the
14 tables this morning, we realized in hindsight, but
15 we're going to work to get an electronic version of
16 the stories here, some of which are the kinds of
17 anecdotes that you are looking for, Dane, and make
18 this an augmentation to the record of this gathering,
19 if that suits the folks that are pulling together the
20 record. So, a NENA issue on 911 public education we
21 will extract that and make it available to you in a
22 convenient format.

23 MODERATOR SNOWDEN: We greatly appreciate
24 that. In addition to the publications that we just
25 heard about, if anyone has comments or thoughts or

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1 suggestions on the publications that we are creating
2 or our Web sites that we are creating here at the FCC,
3 please let us know. Please let us know if they're
4 useful. Please let us know if they're not useful,
5 because we don't want to keep doing something that's
6 not worthwhile, and we believe that we're going in the
7 right direction, but there is always room for
8 improvement no matter what we do here at the
9 Commission, so please keep us in mind as you look for
10 these publications, and as you need more please feel
11 free to give us a call and let us know, and we will
12 gladly share this information for free sending it out
13 to any of the states or any consumer organizations, or
14 any of the carriers for that matter, who would like to
15 have this information. So, any other questions? With
16 that, we're a little bit ahead of schedule which is
17 probably a rare thing around here. So, we're ahead of
18 schedule and -- excuse me. Oh, there's a question.
19 I'm sorry.

20 MR. OENNING: Hi there. Bob Oenning from
21 the State of Washington. I thought I would make a
22 comment for some of the states that haven't been
23 through this just because we have. It was mentioned
24 earlier that 911, how getting materials can be
25 difficult. It can also be very easy. If you do a

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1 press release, or you do materials or you do
2 something, or you have an outage and you use EAS
3 system to tell people about the outage, and it's a
4 dull news day, 911 jumps to the very top and you get
5 all the tracks, so it does jump to the top of people's
6 notice if there's not something big out there, and
7 even then we always get it, so you've got to really
8 think through how you're going to do these things,
9 because they can jump up and bite you unless you're
10 kind of careful about it, and we do it on a regular
11 basis.

12 For instance, when we have outages, we go
13 on EAS and tell people there are outages and tell them
14 what to do if there's a 911 outage. Part of that is,
15 my public information officers are ready to go because
16 the news people arise and they start asking questions.

17 So it can easily be something that you get PR on, but
18 you've got to be a little careful because you will get
19 it.

20 MODERATOR SNOWDEN: Sounds like being
21 aggressive is a good tactic.

22 MS. MITCHELL: Good morning. My name is
23 Helena Mitchell, and I'm from Georgia. I'm the
24 director of a program that deals with disabilities and
25 we particularly focus on the wireless area, so I would

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1 ask those of you that are working in the field of
2 emergency communications, to also consider the
3 disability community out there when you're working on
4 it. I was also former chief of the Emergency
5 Broadcasting System here at the FCC, and the first
6 chief of the emergency alert system, and one thing we
7 found was that there is not enough services going to
8 those communities and of course, we know from past
9 experiences the criticalness of making sure all of our
10 citizens are safe. Thank you.

11 MODERATOR SNOWDEN: Thank you, and she
12 was not a plant since she used to work here at the
13 FCC. Did I miss anyone that wanted to have an
14 opportunity to speak?

15 THE WITNESS: With that, we're going to
16 take our break a little early, and we will resume at
17 10:45 with Commissioner Jonathan Adelstein. Thank
18 you.

19 (Whereupon the foregoing matter went off the
20 record at 10:08 a.m. and went back on the record
21 at 10:46 a.m.)

22 MODERATOR SNOWDEN: Well, I hope everyone
23 enjoyed a very good break and you were able to get to
24 know and meet some new friends. We're going to move
25 along with the agenda and keep moving forward. Next

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1 up is -- of course, we're going to start talking about
2 rural E911, and it is my distinct pleasure to
3 introduce to you all someone I'm sure everyone here
4 knows, but nonetheless, I enjoy having the opportunity
5 to say, welcome and thank you to Commissioner Jonathan
6 Adelstein for joining us, and he will be your
7 moderator as we go forward. So ladies and gentlemen,
8 Jonathan Adelstein.

9 COMMISSIONER ADELSTEIN: Thank you, Dane.

10 We had a really great day yesterday looking over all
11 the different components of E911, and looking back
12 over the agenda, it's just amazing the group of people
13 we had, and again today, we have a remarkable group
14 who has come from all over America, and all over rural
15 America, to share their perspectives from all
16 different aspects of this. So we're really turning to
17 an issue today that is so important to me personally,
18 having been born and raised in rural America, in South
19 Dakota, and that so many of us in this room the
20 deployment of E911 services to rural areas. As we're
21 going to hear today, there's a lot of big challenges
22 facing rural deployment.

23 At the same time that we have these
24 enormous challenges, it's also especially crucial that
25 we get it right for rural areas because critical

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1 response time is just so important in the wide open
2 spaces that we have in rural areas, and the lack of
3 proximity to emergency response means that it's all
4 the more important that we get the right information
5 to responders as quickly as we can, because we all
6 know about the golden hour, that one hour after an
7 accident or some kind of trauma, that it's so critical
8 that we get emergency responders to the person and
9 those improved response times can really lead to I
10 think fewer cases of death, and in the case of injury,
11 that those injuries will be less severe or that the
12 problems can be treated more quickly resulting in
13 fewer disabilities, so we've got to take advantage of
14 that. We've got to get rural America every bit as
15 wired as the rest of the country, or as wireless as
16 the rest of the country, on E911 services. So
17 hopefully today we're going to hear some stories about
18 how folks are working to make emergency response
19 better and faster throughout rural America.

20 We've got a really full session today,
21 which reflects, I think, the importance of this issue.

22 We have three separate panels, and participants in
23 the roundtable that have been kind enough to join us
24 here, so it may require a little movement around the
25 table because the roundtable shifts a little from

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1 panel to panel, but we'll -- we're going to keep it
2 moving and not take a break until 12:45 for lunch.

3 We'll first spend about 40 minutes on
4 stakeholder cooperation issues, then we'll turn to a
5 discussion of location technologies for about 30
6 minutes or so, and then the remaining hour we'll talk
7 about the market challenges faced by PSAPs and
8 wireless carriers in rural areas.

9 I'm going to ask the presenters to make
10 their presentations and we can field a few questions
11 if people want to immediately after those
12 presentations, and then after the final presentation,
13 we can open the floor for questions. I'll encourage
14 the roundtable participants to dive right in and
15 participate equally in the discussion, whether asking
16 questions or answering them. I want this to be a real
17 dialogue if we can make it that way.

18 Our first panel touches on shareholder
19 cooperation issues, as I said, and will likely
20 introduce a lot of the themes that will be addressed
21 in the subsequent panels. We hope to learn about the
22 ways different stakeholders cooperate, or maybe in
23 some cases, how they don't cooperate. But we will
24 continually hear about the improvements that are
25 taking place in stakeholder cooperation and that's

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1 essential, I think, to achieving more rapid
2 achievement of E911 deployment. The expectations of
3 the local community and the capability of the care to
4 deliver E911 services should come together, I think,
5 through cooperation and communication, and that's what
6 we're here today to try to promote.

7 So if there's problems out there, we want to hear
8 about possible solutions as well.

9 Before we start up, why don't we go ahead
10 and go around the round table maybe, and if you can
11 give us your name and who you're with and where you're
12 from, because we have people from all over the country
13 on the roundtable, and I'd also like to remind folks
14 before you ask questions, if you wouldn't mind just
15 saying who you are, so that we can get that right in
16 the transcript that's going to come out of today's
17 discussion. So, if you would begin, George.

18 MR. MARBLE: I'm George Marble. I'm with
19 the Andrew Corporation and I'm based in Ruston,
20 Virginia.

21 MR. NEIHARDT: Thank you. Jonas Neihardt
22 with Qualcomm Incorporated and Qualcomm is based in
23 San Diego, California.

24 MR. CADE: Bill Cade with APCO
25 International with offices in Daytona Beach and

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2 MR. PETERSON: Good morning. I'm Ken
3 Peterson. I represent the Navajo Nation situated in
4 Window Rock, Arizona. The Navajo Nation is situated
5 in three states, Arizona, New Mexico, and Utah. Thank
6 you.

7 MR. DUFFY: I'm Tim Duffy, Chief
8 Technology Officer and Senior Vice President with
9 Dobson Communications out of Oklahoma City.

10 MR. PETERSON: Ernie Peterson with 3
11 Rivers Wireless out of Montana.

12 MR. WICKHAM: Jim Wickham, Arctic Slope
13 Telephone with -- I'm located in Anchorage, but we
14 serve the North Slope of Alaska, inside the Arctic
15 Circle.

16 MR. GASAWAY: I'm Wayne Gasaway with
17 Advantage Cellular in Alexandria, Tennessee.

18 MR. McMILLAN: Good morning, I'm John
19 McMillan with Carolina West Wireless in Wilkesboro,
20 North Carolina.

21 COMMISSIONER ADELSTEIN: Well, thank you
22 all for joining us today. We have a wide part of the
23 country represented in rural America. We have to
24 begin three different stakeholders to hear from in our
25 first panel that are going to make brief

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1 presentations. First Jerry Wilke. Jerry is with
2 Minnesota Southern Wireless Company, which does
3 business as Hickory Tech Wireless. He served both as
4 director of market and strategic planning, and vice
5 president and general manager for the company. He
6 spent the last three-and-a-half years in strategic
7 planning and corporate development at Hickory Tech.

8 Then we're going to have Allen Holder.
9 Allen is with the Public Safety Answering Point in
10 Lincoln City, West Virginia. He's the 911 director
11 there and works closely with -- on emergency response
12 matters.

13 Finally Jackie Mines with Quest Wireless
14 911 product manager. She's got a span of
15 responsibilities that includes developing new products
16 and services that aid public safety in their delivery
17 of critical emergency services, serving over 90 public
18 safety agencies which provide emergency response to
19 over 20 million telephone subscribers. Jackie has
20 worked closely on integration of wireless phone users
21 into the E911 infrastructure. So with that, we'll
22 start with Jerry.

23 MR. WILKE: Thank you, Jonathan. Good
24 morning all. I appreciate the FCC giving myself and
25 our company the opportunity to explain and go through

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1 this issue of E911 Phase Two and the stakeholder
2 relationships and what happened with our company over
3 the last I'd say four years. Hickory Tech's location
4 geographically, just for your knowledge, is southern
5 Minnesota from about an hour south of the Twin Cities
6 to the Iowa border. The southern third of the state
7 of Minnesota is where we operate as a carrier. We've
8 been in that area for about 12 years, we started in
9 1992.

10 Our story on E911 started in the summer of
11 2000. We are an analog TDMA carrier, A-banned if
12 anybody wants to now which side in southern Minnesota.

13 We took a look at both handset technology, and
14 network-based technology at that point in time, and
15 started gravitating toward a network-based solution
16 after talking to the equipment vendors and the handset
17 vendors, and why we started taking that tactic in
18 going to a network-based solution was mostly to do
19 with the handset side.

20 We weren't seeing handsets being developed
21 that had GPS technology in them at that time, yet we
22 were seeing developments on the network side that
23 looked promising, so we started taking that track. We
24 then selected a positioning equipment, determination
25 equipment vendor, we signed an agreement with them and

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1 then a 911 vendor, TCS is their name. We use a Nortel
2 switch. It's a state of the art Nortel switch. I
3 purchased it in 1996. That fall we ordered our Phase
4 Two 911 software, that was the fall of 2001. It was
5 delivered in February of 2002. So we were starting to
6 put together the pieces in early 2002 to deploy a
7 network-based solution.

8 We were working with those vendors to put
9 the system in place. We started out by deploying in
10 our core network 20 sites originally, just to get it
11 up and running and start testing and integrating it in
12 with the local PSAPs in our state. What started this
13 activity going, our state in the fall of 19 -- no, the
14 spring of 2001, triggered a request, what we called a
15 bona fide request, the state of Minnesota's 911
16 director sent letters to the carrier saying integrate
17 Phase One and Phase Two with your state PSAPs and they
18 listed 14 PSAPs in our area. We covered 12 of those
19 14.

20 We initially went back to the state of
21 Minnesota and asked them which ones were ready to test
22 and had Phase Two capabilities built into their
23 network. We never got a reply on that so we just went
24 ahead and did it anyway. We built a network on their
25 faith that all these people were ready to go. When we

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1 first started to do testing last year, late last year
2 in 2002, we found the first county we tried to test
3 with, their network was not ready to read the
4 coordinates information, the latitude and longitude.

5 We went back to the state again and
6 requested information about which PSAPs we should do
7 testing with. Again did not get a reply on that
8 request. Went to the individual PSAPs themselves.
9 Since I'm a southern Minnesota person, and I've been
10 in the market for 12 years, I knew my county sheriffs,
11 I knew the PSAP managers both at the state patrol
12 level and at the county level, and I knew the
13 gentleman that managed the network. His name is Jerry
14 Hittle. I knew him very well. We sat down in his
15 office, we talked this through, we said, we need
16 somebody to test with this test. We have this
17 internet network, let's try it. Let's get it going.
18 That was our first phase of our testing. We started
19 that in the fall of 2002.

20 Then came 2003, this year. We asked our
21 PDE vendor for more sites, and to finish our system
22 upgrade so we had all our sites ready to go. We're
23 currently trying to deploy positioning equipment in
24 everyone of our cell sites, both the 850 megahertz
25 cell sites and the 1900 megahertz cell sites, which is

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1 presenting some interesting challenges between those
2 two technologies. Again, we're still a TDMA carrier
3 at this point and we're trying to provide network-
4 based 911 solutions.

5 When we started trying to test with more
6 and more PSAPs we started finding out two problems we
7 were running into. One was the PSAPs weren't --
8 networks weren't all ready to receive the Phase Two
9 latitude and longitude coordinates. Two, we're
10 finding out that the supervisors and the dispatchers
11 weren't properly trained to refresh and read the
12 information, and weren't staffing people when we
13 requested testing. We had asked them for a test, they
14 would say, what day? We found out Mondays and Fridays
15 were bad days, don't talk to us those days, so we
16 said, fine, give us a date and time, we'll test with
17 you, and we set up the tests, we found out the first
18 time we set up a test they weren't ready, they didn't
19 know how to refresh the screen to do the locations, so
20 we came back the next day and did another test with
21 them. The dispatcher wasn't prepared for the test.
22 After ten calls they got a little irritated with us
23 and said, come back another day, but we figured out
24 they were getting the data and he confirmed it, so we
25 just left them alone after that.

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1 The Mankato, Blue Earth County local PSAP
2 has been probably the best partner from a testing
3 perspective. That's our headquarters town. They've
4 worked with us all along. He's been willing to sit
5 down with us and go through the problems we've been
6 dealing with. A couple of the biggest problems we've
7 dealt with along this path we've gone along until
8 today has been getting the trunks ordered into our
9 switch has been a big challenge, that's one of the big
10 problems, and then dragging some of the PSAPs along
11 with us, because we have this -- we've spent \$1
12 million to date putting this, with no recovery on the
13 cost.

14 We have this in our network, we want to
15 get it up and running, and we've been trying to get
16 this up and running and we found out 50 percent of our
17 PSAPs weren't ready when we first deployed our first
18 20 sites. To date, I'll give you a success story, we
19 have ten of our 12 PSAPs up and running. The two that
20 aren't, their networks won't support the positioning
21 yet. So we have ten of our 12 PSAPs done, we're
22 sending Phase Two information to them today.

23 The challenges have been that the training
24 from both the consumer side isn't there. I don't
25 think the consumers know this even exists in Minnesota

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1 yet. I haven't heard what I heard Ken say about
2 Indiana going on at all in Minnesota. We're not
3 hearing anything about Phase Two technology coming
4 from the state or local, and other challenges we've
5 been seeing have been the dispatcher training and the
6 time it's taking to go through and set up these tests
7 with these PSAPs.

8 We want to know that the equipment is
9 working. We want to follow up. We're their
10 neighbors. We live in the market. These people know
11 me, they know our company, they know my engineering
12 manager, Mark Dundas, we've been very, very proactive.

13 That was our approach. Be proactive, not reactive.
14 We spent the \$1 million, let's go get it done, and
15 we're almost there, but we have a lot of challenges
16 ahead.

17 Our company are members of several trade
18 organizations that we've been meeting and they are
19 RTG, RCA, CTIA and the Minnesota Telephones based in
20 St. Paul.

21 This summer myself and a member of RCC
22 Corporation in Alexandria and another wireless carrier
23 put together a stakeholder forum in St. Paul. We put
24 it together and it was sponsored by the Minnesota
25 Telephone Alliance, and we brought the -- it was

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1 similar to this meeting. We brought the stakeholders
2 together, we wanted to talk through it. What happened
3 in that meeting was interesting. A lot of the PSAPs
4 told us, just get it up and running, we don't care
5 about the accuracy, just get it up and running. You
6 rural guys, just work together and get it working.

7 But then some of their vendors pointed
8 fingers at us and read lists of carriers that weren't
9 doing any activity, and they gave us a no activity in
10 June this year and a failing grade, when we had
11 already deployed \$1 million worth of equipment, and
12 didn't have trunks into our switch because the state
13 didn't know how to order them, and had the equipment
14 available and we were ready to test. We've been ready
15 to test since fall of 2002, and we haven't been
16 getting any cooperation.

17 So we had significant challenges. Again,
18 our market is a rural market. It's in southern
19 Minnesota. It's in an agricultural area that has a
20 lakes region, so it's not a topography that's
21 challenging like maybe Jim's arctic slope is and some
22 of the mountainous areas where Ernie is from, and what
23 we've been trying to do is the right thing from a
24 regulatory perspective, following what the FCC's
25 requirements are, and trying to work with our vendors

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1 to get it done. It's been fascinating to find out
2 this technology what Ken said is true, it's very
3 complex, and they're a lot of things we're finding out
4 that don't work right now.

5 We've had issues with our switch vendor
6 and our PDE vendor, the systems haven't talked always
7 well. We've had TCS and PDE vendor issues. We've had
8 integration issues with the PSAPs networks themselves
9 between IES and Qwest, and these are all challenges
10 we've had to overcome.

11 We're getting it done, and we're seeing
12 some things that are working, we're seeing some things
13 that are not working, but to date, we still have two
14 more PSAPs to go, and we still need to solve the
15 accuracy issue. With that I'll open it up for any
16 questions that anybody might have for me. Yes, sir?

17 MR. FORSTER: I'm in the Wireless Zero
18 accuracy policy division. What is the accuracy with
19 the network-based solution?

20 MR. WILKE: The preliminary results we
21 have are kind of inconclusive right now, but I would
22 say from our own internal testing, we haven't see it
23 to the standard that the FCC is looking for. It's not
24 making it yet. We're about 20 percent off on the
25 accuracy.

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1 MR. FORSTER: Is there any contemplation
2 of going to a handset-based solution, like changing
3 air interfaces?

4 MR. WILKE: Yes.

5 MR. FORSTER: Okay, because I know some
6 carriers are doing that.

7 MR. WILKE: The challenge for us is when
8 we were taking a look at both air interfaces, GSM
9 right now I don't believe there's a handset available,
10 so that presents a challenge, and CDMA I believe
11 does, but that's another system upgrade. It's kind of
12 a perfect storm. We have to do about a \$10 million
13 upgrade to our network, and deploy a policy,
14 regulatory issue E911 all at the same time and then
15 try to pick the right technology without spending the
16 money, which we already spent, \$1 million, so it's
17 kind of been an interesting game for us, but we chose
18 the network-based because at the time we believed that
19 it was the way we needed to go as a rural carrier.

20 Now we are providing locates which is
21 making some of the PSAP managers pretty happy. Any
22 other questions? Yes?

23 MS. BARTON: Hi. I'm Jeannie Barton in
24 the Policy Division of Wireless. You say you're 20
25 percent off in your accuracy. Is that an aggregated

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1 figure? Are you making it in some places and not in
2 others?

3 MR. WILKE: Yes, we are making it in some
4 places. Our major market cities do seem to be making
5 it. The trouble is coming up with the testing and the
6 math based on an overall system configuration. If we
7 just did our testing in the city of Mankato and
8 Owatonna, Minnesota, we probably would make it. But
9 we can't look at that. We have to look at the whole
10 system, and that's the way we're taking the approach
11 on accuracy. We've got to look at total calls system-
12 wide.

13 MS. BARTON: But there are -- there are
14 areas where you have met the bench marks for accuracy
15 and what portion do you know of your coverage area is
16 that?

17 MR. WILKE: I would say right now we
18 probably have 50 percent of it.

19 MS. BARTON: Thanks very much.

20 MR. SEITS: I'm Steve Seits of the
21 National Networking Members Association. I just want
22 to -- I've made several offers to you folks in
23 Washington. I guess you said you have a lot of
24 challenges in states. It kind of went off of this,
25 but I actually talked a little about ? I know you get

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1 a lot of people. I want to just reopen that offer.
2 Anything you guys need help with, to all rural
3 carriers, please feel free to contact us as you're
4 addressing some of these challenges with consumer
5 education or PSAP. I just want to make sure you hear
6 that offer from me as well, because I told that to
7 your Washington representation on several occasions.

8 MR. WILKE: Thank you. Yes?

9 MR. DICKENSON: I'm Dickenson with TCS.
10 I'm familiar with Hickory Tech. I'm sure that the
11 reason you were invited to speak today is because
12 you're the poster boy for rural carriers because
13 you've been so aggressive in your deployment efforts.

14 But the point I would like to make, for the FCC and
15 for someone at the FCC to take away today related to
16 your discussion, is that a couple of years ago, I had
17 lunch with Blaze Cinto and I can't remember who the
18 other one with the FCC was, but she was Lauren's
19 predecessor, I think, and at that time the FCC was
20 contemplating the Richardson decision which
21 stipulates, which they subsequently agreed that PSAPs
22 could request Phase Two service even if they were not
23 yet ready to receive it, assuming that they would be
24 ready in six months. At that time I warned the FCC
25 that if you agree to this, you're going to be creating

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1 situations just like what you've described where the
2 wireless carrier has been prepared, spent all that
3 money, you've come into the PSAP and the PSAP is
4 suddenly not ready.

5 Unlike Phase One, Phase Two can be a very
6 rapid deployment because you've got a lot of the
7 infrastructure already in place with Phase One, so
8 when Phase Two comes along, the wireless carrier can
9 be knocking at the PSAP's door rather quickly,
10 especially in light of some of the FCC's recent fees
11 that have been imposed upon the wireless carriers for
12 their lack of aggressiveness in Phase One, they've got
13 the message now and Phase Two is a much more rapid
14 deployment. So I would use this opportunity to point
15 out to the FCC that you may want to consider or
16 reconsider the Richardson decision and make it
17 mandatory that the PSAPs be actually ready to receive
18 Phase Two service at the time that they make their
19 Phase Two request.

20 MR. HAYNES: Anthony Haynes with the
21 Tennessee Emergency Communications Board. You
22 mentioned a trunking issue and that you lost a lot of
23 time because of the state did not know how to order
24 trunking and I was just talking to Richard, and we --
25 I know in our states it's the carrier's responsibility

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1 to order the trunking interconnect, and I was just
2 wondering if that was something unique to your area,
3 or maybe in some of the other rural areas that in the
4 states that they're in this is something we just
5 wasn't aware of.

6 MR. WILKE: I believe it's unique to the
7 Minnesota situation. They attempted to try to put
8 together an order I think, but they didn't apparently
9 know where to put the order into is what I've been
10 told. We didn't wait for that. We waited four
11 months. That was enough. We wanted to get going, so
12 we put in the order on our own dime and we ordered the
13 trunks and we're still getting the bill for all our
14 trunks today for 911, even though the state in our 911
15 contract agreed to pay for them, the bill for TCS is
16 still coming to Hickory Tech, we're getting it every
17 month, and we've ordered those trunks on our own
18 nickel and dime to do that. We didn't want to wait
19 any longer to see if the state was going to come
20 through, but maybe in Tennessee it's different. I
21 think it's -- across the U.S. it's different in every
22 state, these issues. It just depends on the state and
23 what the state directors and 911 departments at the
24 state level are doing, but in our state they're
25 supposed to order them.

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1 MR. PETERSON: Gary, in Montana, we have a
2 situation where we order the trunks through the
3 selective router, they ordered the trunks the other
4 side of the selectee router, so it's a mixed
5 situation. Had a very similar situation with a county
6 who was not in a situation where they could order the
7 trunks to the selective router, so we had our trunks
8 ready to go and they couldn't get theirs ordered or
9 get them provisions correctly. Same situation.

10 MR. WILKE: In Minnesota the state had
11 ordered the trunks from the selective router in
12 Kasson, Minnesota to Mankato but Mankato Citizens
13 Telephone, which is a division of Hickory Tech to
14 Hickory Tech Wireless, which is two miles away, they
15 couldn't figure out how to order the trunks from that
16 switch to our switch two miles away, and that's where
17 the holdup got stuck.

18 MR. GASAWAY: While we're talking about
19 that issue, I'm Wayne Gasaway from Alexandria,
20 Tennessee, and to follow up what Anthony said, in
21 Tennessee we've had great cooperation with the state
22 and with the local PSAPs, and therefore we have
23 deployed a network-based system too that is working,
24 and we feel within the accuracy of it, but it's taken
25 a lot of cooperation from all parties involved,

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1 especially on the funding of it, so it's worked very
2 well in Tennessee.

3 COMMISSIONER ADELSTEIN: Thank you,
4 Jerry. That was a great discussion and it's a perfect
5 time for the PSAP perspective from Allen Holder from
6 the Lincoln City, West Virginia PSAP.

7 MR. HOLDER: Good morning. I want to tell
8 you a little bit about Lincoln County, because I guess
9 I have to prove that we are as rural as we truly are.

10 We are a consolidated dispatch center covering the
11 entire county of Lincoln. We dispatch for one county
12 ambulance service with three stations scattered across
13 our 450 square mile county, eight volunteer fire
14 departments, a small sheriff's department, and a state
15 police detachment located within our county. The
16 county is 450 square miles with a resident population
17 of about 21,000. We're located next to Kanawha County
18 and Cabell County where the two largest cities in the
19 state of West Virginia are located, but when you look
20 at that in comparison with other cities across the
21 country, our capital city is probably considered rural
22 in some ways.

23 Most of the people that live in our county
24 do travel outside the county somewhere else to work.
25 Our largest employer is the school board, so we don't

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1 have a lot of industry in the county, and we are truly
2 a bedroom community. Last year when the only traffic
3 light in the county malfunctioned and was down for
4 several months, the -- and that's why I'm going this
5 direction, the city's only police officer determined
6 that it wasn't really necessary, and the light was
7 taken down and replaced with stop signs, so we are
8 rural, and I would go as far as to say that we're not
9 the only one in West Virginia that is just as rural,
10 and when you start to travel through some of the
11 midwestern states like I have done so, it makes me
12 feel like I am in a city sometimes, because there are
13 other locations like that just across the country.

14 Now I guess the good news is that I can
15 say that we are completely done. We are Phase Two
16 with all of our carriers. I can say that with a smile
17 on my face. But I don't have to tell you that we only
18 have two carriers, and we only have three tower sites.

19 So I have a perspective on when it works, how it
20 works, and in our case, we have a one tier one company
21 providing cellular service using a network solution
22 over a TDMA system. Today, as we speak, they are
23 turning their GSM site of that network on. I also
24 have a tier two company, that is providing a handset
25 solution using CDMA, so I have a comparison of how the

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1 two systems work in a rural area.

2 One thing that I might add, I've heard
3 some discussion and a lot of people making the
4 comments that accuracy in Phase Two might not be as
5 critical or as important in a rural location as it is
6 in a city. Well, I beg to differ. In my county, we
7 probably have more ATV accidents than we do auto
8 fatalities every year. We probably have more people
9 lost in the woods than get lost in Washington, D.C.
10 We don't have traffic problems and sometimes we
11 literally do roll up the streets at midnight.

12 Up until just a few years ago, our county
13 PSAP was the only operation that was open 24 hours a
14 day. So if you're involved in a motor vehicle crash
15 on a rural road, or you're in the woods and you've
16 become injured while hunting or taking part of many of
17 the other activities that go on in a rural area, and
18 you call 911 from your cell phone, if you have
19 accuracy information, we can probably find you. But
20 if you don't have Phase Two, you may be there for a
21 couple of years, and when I say that, everybody
22 laughs, but we've all seen situations in my county and
23 other counties through southern West Virginia, where
24 people have called for help or family members have
25 called for help because someone was lost in the woods

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1 and disoriented, or because there was an ATV accident,
2 and searches that have went on for two and three and
3 four days for these people.

4 So it is very important that when we do
5 have cell service, and people do open up their
6 handheld and they see that they've got cell service,
7 that they also have the ability to be located because
8 they have that false sense of security. I've got my
9 cell phone, they can find me. That's not always the
10 case, and without wireless technology that provides
11 location information, it's just as critical for us in
12 Lincoln County, West Virginia where we are as rural as
13 it gets, for someone to have location information in
14 Washington, D.C.

15 Chances are that if you get hurt in a
16 larger city, sooner or later somebody will come by and
17 find you. Sooner or later you'll see a street sign
18 that tells you where you're at. That's not always the
19 situation in a rural community.

20 Now as far as accuracy concerns are, we
21 have been testing and looking in the field for the
22 last few weeks, there are some significant differences
23 between a handset solution, and a network-based
24 solution. To be quite honest it's the difference
25 between night and day. One of my biggest concerns is

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1 that when you're looking at accuracy on a network-
2 based solution, is that you're able to average over
3 the entire market.

4 Well, in Charleston, West Virginia, which
5 is part of the same market that I'm in, they're going
6 to be accurate, and it's going to work, and they're
7 going to fall within those FCC guidelines. But when
8 you average it in with me, they're probably still
9 going to fall within those guidelines, but when you
10 look at my county by itself, chances are we may have a
11 ten percent accuracy rate with a network-based
12 solution, and understanding that TDMA just hasn't been
13 developed to provide a handset based solution, I'm
14 just crossing my fingers for the day that those
15 handsets are developed, or we see ourselves in a GSM
16 situation where TDMA is no longer actually being out
17 there. But as we know, AM radio hasn't left us, and
18 there are people out there that still use Beta
19 recorders, and the technology will be there for a long
20 time.

21 So it may be a long time before we see the
22 accuracy with a network-based solution that we want to
23 in a rural area, but as far as the handset based
24 solution, we're averaging somewhere between one to two
25 foot on every call that's placed, but then again, how

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1 accurate is GPS in a rural area? It's pretty good
2 unless you're up against a mountain. There are some
3 locations that you just can't get a GPS signal in a
4 rural location, but for the most part we've seen some
5 tremendous advantages to the system and both systems
6 have been operational now since August of this year,
7 and we've had a lot of people that have come in and
8 looked at it.

9 We deployed a CAD system back in
10 September, and you mentioned I think at one time the
11 amount of handsets that are out there that are Phase
12 Two ready, well, we were surprised to find out how
13 many handsets truly are Phase Two ready that people
14 don't realize that. They're already carrying handsets
15 that are Phase Two capable, and we had people that
16 came in from Tennessee, people that came in from
17 Pennsylvania, people that came in from several areas
18 across the country that were in areas where Phase Two
19 is not available, but when they came into our county
20 to test our CAD system, and dialed 911, their phones
21 worked and they were Phase Two capable. So we've seen
22 some good results and we're very pleased with what
23 we've seen so far, and I'll open it up for questions I
24 guess.

25 MR. CADE: And as you can see by Allen's

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1 enthusiasm, it is possible to make it happen in rural
2 America if you work hard enough, and, of course,
3 there's special variables involved in there as well.
4 Jimmy Jeannette from West Virginia is here also, who
5 is a neighboring county of Allen's and has a slightly
6 different story that may be helpful to demonstrate the
7 critical need that we've all been talking about,
8 cooperation and communication and collaboration to
9 make this happen, and communication, I believe, is
10 obviously an issue, because I've got the Hickory Tech
11 story from the other side. So I know there are
12 communication issues attached to all of these
13 discussions, and perhaps Jimmy would like to report
14 his efforts to work in concert with the carriers.

15 MR. JEANNETTE: My name is Jimmy
16 Jeannette. I'm the director of 911 in McDowell
17 County, West Virginia. In March of last year we
18 requested Phase Two service from one of our major tier
19 one carriers, and were planning on deploying Phase Two
20 October 1st of this year. We had made all the
21 necessary arrangements at our PSAP, we had previously
22 deployed Phase Two with another tier two carrier, and
23 were ready to accommodate our Phase Two request. Up
24 until almost the exact day of deployment, we were
25 still planning on deploying Phase Two. The biggest

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1 problem that we have, like Allen's county, is we're a
2 very rural county also.

3 Our county only has one tower site from
4 this particular carrier, and therefore they could not
5 give us a Phase Two solution. They have since sold
6 the licenses for those areas, and that transfer took
7 place almost the exact day that our Phase Two request
8 was supposed to have been implemented. So there was
9 very little communication between the PSAP up until we
10 found out in hearings at the state legislature that
11 they had planned to sell these sites.

12 So I think a major issue that has to be
13 resolved is the communication between the PSAPs and
14 the carriers if we're going to move forward with Phase
15 Two.

16 COMMISSIONER ADELSTEIN: Well, we've
17 heard a lot about luck issues, so with that I'll turn
18 it over to Jackie Mines with Qwest.

19 MS. MINES: Thank you, Commissioner. I
20 represent a LEC, which is not a very popular thing to
21 be these days, and I'm glad that there's not a lot of
22 food and drink in the room, and that it's a very nice
23 room so no one will throw that food and drink at me.
24 All kidding aside, Qwest is the predominant 911
25 telecommunications provider in the 14-state region of

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1 Minnesota, Iowa, North Dakota and South Dakota,
2 Nebraska, Wyoming, Colorado, Arizona, New Mexico,
3 Utah, Montana, Idaho, Washington, and Oregon. We
4 serve a total of 727 enhanced 911 PSAPs today, which
5 represents approximately 99 percent of the population,
6 and 96 percent of the geography.

7 Qwest is very proud and would like to
8 recognize that many of our regions PSAP managers and
9 statewide 911 program managers have been the first to
10 trial E911, deploy it on a statewide or region-wide
11 effort, and to deploy wireless technology. Many of
12 the best practices that you heard about yesterday of
13 wireless deployment are due to the efforts of people
14 like Ken Keim of Oregon, Nancy Pollock and Jim
15 Beadles-Barker of Minnesota, Marlis Davis and Bob
16 Oenning of Washington, and Anita Velasco and Barbara
17 Yeager in Arizona, and John Benson in Iowa. Because
18 they were willing to think outside the box, shift
19 their paradigms of how E911 was deployed, and trial
20 different and new technology and learn the hard way,
21 we are all able to benefit from their experience.

22 But in the Qwest region, we have also
23 those PSAPs that are very, very rural, and there are
24 very unique challenges to that. Historically our
25 PSAPs have not necessarily, or these PSAPs, have not

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1 necessarily been the early adaptors of E911, and they
2 aren't for wireless 911. They want to make sure that
3 that technology proves itself, they were waiting for
4 Phase Two technology, and they did not have those
5 resources that are required to learn the hard way.
6 Quite simply, we know it breaks down to funding and
7 the cost of deploying in those states.

8 Our states are characterized by small
9 population and large geographic areas. Because of
10 this, early on Qwest encouraged statewide deployments
11 wherever possible. To do a statewide deployment
12 enabled Qwest to address network needs as a state, to
13 look at where you absolutely had to do some upgrading,
14 and effectively utilize existing infrastructure. We
15 found that those deployments are labor intensive and
16 intimidating, and Qwest customers were used to looking
17 to Qwest to manage 911 projects.

18 In many states Qwest has operated as a
19 project lead, interfacing between the state program
20 manager and the wireless carriers and third-party
21 vendors. We've worked to set priorities, manage the
22 schedule around PSAP upgrades, and helped develop
23 training materials for PSAPs and coordinate testing.
24 We have done this in varying capacities from full
25 project deployment to partial project deployment in

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1 states like Iowa and Nebraska, Minnesota, New Mexico,
2 Colorado, and North Dakota.

3 These states don't collect a large
4 surcharge as you can imagine, but the cost can be
5 higher. We have many wireless carriers who are
6 deploying in those particular states, with a very
7 limited small footprint. Sometimes that's the only
8 state that they do business in.

9 Qwest early on developed a solution in
10 1997 for Phase One that was trialed out in King
11 County, Washington and in Minnesota for developing
12 that solution allowed the carrier to send 20 digits
13 into the selective router, but did not require PSAPs
14 to have to upgrade on their end. Many small carriers
15 adopted that technology. It did not require huge
16 infrastructure upgrades on their end, and it did not
17 require upgrades at the PSAP. However, when the end
18 CAD solution was developed, Qwest was one of the first
19 adopters, and our wireless business unit adopted that
20 technology.

21 In anticipation of Phase Two, all of our
22 tandem switches or selective routers were upgraded to
23 the J-standard requirements by the fall of 2002. Our
24 911 alley notes were upgraded in January of 2002 to
25 the E2 poll interface and tested with third-party

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1 vendors throughout the first and second quarters of
2 that year.

3 Qwest has tried to be flexible in offering
4 changes within the network to accommodate wireless
5 carriers, both for Phase One and Phase Two technology
6 choices, and where we can for PSAP customer
7 requirements. When carriers have requested that we
8 change our ordering process to be easier for them, we
9 accommodated. When they've asked us to escalate
10 orders so they can meet their FCC deadlines, we've
11 also tried to accommodate.

12 Recognizing that the cost can stop
13 deployment efforts, Qwest has partnered with various
14 state PSAP managers, program managers, and PUC
15 commissions to develop pricing methodologies that
16 allowed states to offer either full or cost recovery
17 or partial cost recovery to wireless carriers as well
18 as to have statewide ubiquitous deployments.
19 Recognizing this, the state of North Dakota worked
20 with us for about six months and through six pricing
21 reiterations to come up with the right balance so they
22 could deploy a statewide 911 solution, and in the
23 state of Colorado, Qwest pays the wireless carrier
24 bills and spreads that cost over every subscriber.

25 Although it's been frustrating at times,

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1 it does feel good in the end after everybody has come
2 to the table, cooperated, discussed, and ultimately
3 come to a solution that we could all live with. Some
4 have questioned Qwest's commitment to 911 through all
5 the downsizing efforts, yet our company has recognized
6 the importance of 911 and our 911 operations center
7 and the network support groups have never been
8 downsized. Product management has, but we're not the
9 people that make the system work from day to day.
10 We've had to be leaner, smarter, work harder, and
11 spend more wisely, keeping our eye on the future and
12 hoping that every investment we make can be utilized
13 further down the road.

14 Any questions? Thank you.

15 COMMISSIONER ADELSTEIN: Do you have any
16 questions or comments for the panel as a whole, or any
17 further issues you want to address? If not, I'd like
18 to thank the panel for an excellent presentation.
19 We'll move on to the next panel of speakers. We have
20 I think two more speakers coming, Kyle Gruis and
21 George Marble, if they can come on up.

22 Well, as we've heard, E911 deployment in
23 rural areas can present real accuracy problems.
24 During our next panel we want to hear from the experts
25 on the latest issues involving both handset and

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1 network solutions. For example, how can we achieve
2 timely delivery of handsets to CMA carriers or TDMA
3 carriers, what is the latest on the development of GSM
4 handsets? On the network solutions side, we want to
5 hear about the accuracy numbers, and whether or not
6 there are new technologies that can boost accuracy.
7 Finally, we'd like to discuss the feasibility of
8 improved network accuracy through tower sharing and
9 other collaborative group efforts like that. As many
10 of you know, these issues are all so critical in our
11 nations rural areas, and especially important for our
12 citizens that live there. Before I introduce our next
13 speaker, I'd like to ask the new members of the
14 roundtable to introduce themselves if you haven't
15 introduced yourself already, just tell us where you're
16 from and who you're with.

17 MR. POMERANTZ: My name is Scott
18 Pomerantz, and I'm with Global Locate, and we provide
19 assisted GPS technology and we focused primarily on
20 the GSM of the non-synchronous networks for those
21 solutions on a ten basis.

22 MR. JONES: I'm David Jones from
23 Spartanburg County, South Carolina. I'm with the
24 National Emergency Network Association.

25 MR. PREST: Art Prest. I'm with Alpine

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1 PCS and RFB Cellular and I'm here representing the
2 rural cellular association.

3 COMMISSIONER ADELSTEIN: Well, thank you.

4 We're going to start with Kyle Gruis, then we'll move
5 on to George Marble. Kyle Gruis worked at the Rural
6 Cellular Corporation since 1996 acting -- you don't
7 look old enough for that, acting in various roles in
8 network operations, engineering and product
9 development. Kyle's current role at RCC is managing
10 network operations and engineering, in two of RCC's
11 four operating regions, as well as technical R&D and
12 product development support for new applications and
13 services and supporting technical mandate research and
14 deployment.

15 Prior to joining RCC, Kyle was employed
16 for five years at US West, a new vector group in
17 Minneapolis. Kyle?

18 MR. GRUIS: Well, thank you, Commissioner.

19 Good morning. I'm going to talk for a few minutes
20 this morning about a couple of deployments that RCC
21 has undertaken in Phase Two, and the results of them,
22 and some ideas that we'd like to share with everybody
23 on how we can further the cause of bringing 911 to the
24 rural markets.

25 Just a little bit about RCC first. We

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1 operate in 14 states, and true to our name it is very
2 rural markets that we serve. We have 34 RSAs, and
3 three small MSAs, Bangor, Maine, Burlington, Vermont,
4 and Portsmouth, New Hampshire. We manage about 5.9
5 million pops, and have around 750,000 customers
6 currently. Our networks are predominantly TDMA and
7 analog networks. We do have a small spattering of GSM
8 and CDMA networks, but the vast majority are TDMA and
9 analog today, and we're just starting to deploy CDMA
10 and GSM as a 2.5g overlay as most carriers are in the
11 country today.

12 What we're seeing is that we believe the
13 FCC's Phase Two deadlines might be inadvertently
14 jeopardizing rural American's access to reliable
15 wireless phone service and the emergency response
16 services. Part of the reason for that is these
17 deadlines are forcing small carriers to invest their
18 limited cap ex in E911 Phase Two technology that we
19 feel like is really incapable of providing us the
20 accurate location information that we need for
21 wireless carriers, or customers, excuse me.

22 In particular, the rural carriers that are
23 operating TDMA networks are somewhat singled out in
24 this stance because there is no handset based solution
25 available for TDMA and analog carriers. If we had

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1 chosen the CDMA path and CDMA roaming partners several
2 years ago, this would have been a much different
3 situation for RCC in particular. We feel like the
4 investment in the network-based Phase Two equipment is
5 prohibitively expensive, and in rural markets it's
6 just now showing the accuracy that we need. We don't
7 question the ability for the network-based equipment
8 to operate well in more built-up areas where the cell
9 density is higher, but in the middle of nowhere it's
10 just tough to get those triangulations happening. We
11 found that the use of the angle of arrival technology
12 that's been suggested by our vendor is not really
13 workable in most cases, they're large antennas that
14 the towers have a hard time supporting. In many
15 states we operate in the permitting time frames are
16 very long and difficult, and we just found that the
17 AOA is not a very workable solution for us.

18 So what we found is that while our
19 wireless networks are pretty good for voice networks,
20 they're not so good for a location network overall. A
21 couple of examples where we're live today, we have a
22 network-based solution using TDOA technology from
23 Grayson Andrew Wireless. We use Intrado for our MPC
24 services, and we've been able to garner some real
25 world test results from the state boards and from our

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1 partner, Intrado.

2 In Vermont we've deployed 51 cell sites to
3 meet our 50 percent population coverage for the first
4 milestone, and in Minnesota we've deployed over 100
5 TDOA sites, and in Alabama we're in the process of
6 deploying in two counties, much like one of the
7 earlier examples, these are very sparsely populated
8 counties where we have one cell site in each county,
9 so that presents its own challenges.

10 In Vermont we've invested approximately \$2
11 million to get to the first 50 percent population
12 milestone in hopes of achieving the accuracy
13 standards.

14 We've gotten an accuracy report from
15 Evelyn Bailey's office and it's Intrado reports that
16 we receive regularly. It shows what those 51 cell
17 sites in the most densely populated parts of Vermont.

18 We've only been able to achieve 26 percent of the
19 calls within the 100 meters, and that's 26 percent,
20 not 66 percent, and an additional 20 percent within
21 300 meters, for a total of less than half of the calls
22 being able to be located within 300 meters. Vermont
23 is an example where we have a fairly good-sized city
24 in Burlington that we actually have been counting, you
25 know, averaging everything together but even

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1 Burlington, Vermont can't overcome the rest of the
2 market to achieve a suitable accuracy standard for us.

3 Many of the calls, 40 percent of them
4 actually, are locating at accuracies, or
5 uncertainties, of 500 meters or more, which we've
6 found calls into question the whole basis of locating
7 it in the first place, and approximately 30 percent of
8 the calls even show up at the PSAP as a Phase Two
9 location information call due to several reasons, one
10 of them being just no fix, no triangulation.

11 Minnesota, we operate in the northern half
12 of Minnesota where Hickory Tech is in the southern
13 half. We've invested around \$4 million in a 100-cell
14 site TDOA network to get to again, to try to
15 accomplish that 50 percent population coverage.
16 Northern Minnesota is fairly sparsely covered and
17 there are no real major tones that we operate in.
18 We've had slightly better luck in Minnesota and we
19 feel like because it's just more forgivable terrain
20 not as many big mountains and more contiguous
21 coverage, and with that said, we were able to get 23
22 percent of the calls with 100 meters, and an
23 additional 35 percent within 300 meters, so it's
24 slightly better, although not even close to the
25 accuracy standard. Many of the calls, again, locate

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1 between 500 and 1400 meters on certainty.

2 We do have a lot better luck getting the
3 location fix in Minnesota, 83 percent of the Phase
4 Two capable calls do show up with location information
5 of some type, and we feel like that's because it's
6 just more even terrain.

7 In Alabama we had two counties request
8 service in Northern Alabama. RCC's footprint in our
9 south region is almost a ribbon of RSA's stretching
10 from southeastern Alabama to northwestern Mississippi.

11 The two counties that happened to request service
12 were Fayette and Lamar County which are in the very
13 northwest corner of Alabama, and they're almost like a
14 highway of counties going through there, so RCC only
15 operates one cell site in each of these counties.
16 We're surrounded by Verizon and Alltel are the A-side
17 carriers neighboring to us, so we feel like that's not
18 a good option to even try to integrate with them.
19 Since they're handset-based that really doesn't work
20 for us.

21 What we did is, we deployed two location
22 sites, one in each county, and an additional three at
23 the three closest cell sites to where those two
24 counties were within RCC's footprint, and recently
25 have turned that up and found that that's not going to

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1 make it. That's not -- there's no way to achieve the
2 fixes that the PSAPs are asking for. So that was a
3 total of about a \$200,000 test that we've fallen short
4 on.

5 What we're doing to work through this is
6 to work with the PSAPs and share these tests results
7 with them and try to work out a plan to get to our
8 compliance whereas we're looking at other options.
9 We're looking at, you know, adding more sites. We're
10 trying to speed up our overlays.

11 So what we would like to tell everyone RCC
12 has been successful because we understand and respond
13 to the needs of rural customers. We've done this --
14 it's our only business is serving rural customers, and
15 we believe that they deserve and expect to place 911
16 calls and receive these emergency services. So what
17 we're recommending is that the AGPS technology which
18 is better suited for the relatively open spaces and
19 the rural carriers footprints is the way to go for us,
20 and we'd like to recommend that we have some time to
21 develop these next generation networks rather than
22 spending unlimited cap ex on a network-based solution
23 that we really feel like is going to be short term as
24 we're going to change out our networks anyway and move
25 away from TDMA as quickly as our capital plan will

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1 allow. Let us spend that money on the overlays rather
2 than the location networks.

3 We also ask that rather than the 95
4 percent penetration criteria for handsets, we move
5 more towards a criteria where all of the new handsets
6 at some point in time are location capable rather than
7 this 95 percent penetration. We just have a lot of
8 customers and I'm sure many of you in front of me
9 would agree, that they like their analog phone that's
10 mounted in their truck or they carry it on their bag
11 phone and I can't get it out of their hands. So what
12 am I supposed to do? They don't want my new fancy
13 CDMA handset. They like what they have just fine. So
14 we can gradually over a long time weed those out, but
15 it's not something that we can just run out there and
16 do and keep our customers happy. That's all I have.
17 Thank you.

18 COMMISSIONER ADELSTEIN: Any questions?
19 Evelyn?

20 MS. BAILEY: I'm Evelyn Bailey from the
21 state of Vermont. I don't have so much a question as
22 just an affirmation of much of what you said. This is
23 a carrier who has worked really hard with the State of
24 Vermont to meet the FCC's requirements. We've had an
25 excellent working relationship with all six of the

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1 carriers that we have, and I really appreciate your
2 honest in just laying out what you have found.
3 They've done everything right, and the accuracy just
4 isn't there. From the PSAPs perspective, averaging
5 out over an entire market, that's really great, that
6 gives the FCC something to work with. What I'm
7 looking at is that 911 call that came from that person
8 right then, that location information had better be
9 real good or it just -- it's just a tragedy waiting to
10 happen.

11 So I hope that what I'd like to amplify is
12 just to say how complicated it is in a rural area,
13 especially a very mountainous, very rugged, very
14 sparsely populated rural area, for carriers to always
15 meet the accuracy requirements. Even a global
16 positioning solution in a rugged terrain with lots of
17 trees is not always going to work well either, and we
18 understand those limitations.

19 We hope that you folks understand it as
20 well, and what we need to do is to keep working toward
21 the point where every single 911 call that comes in to
22 a PSAP at a particular point in time has the accuracy
23 necessary to get help to that person, not averaged
24 over a market, not averaged over multiple regions or
25 states. That doesn't help the PSAP at all.

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1 We really appreciate what RCC has done,
2 and appreciate again, I'd like to say, your honesty
3 here, because we need to hear that, the FCC needs to
4 hear that, and it's very refreshing.

5 MR. GRUIS: Well, thank you, and Vermont
6 has been a great partner to work with so far.

7 MR. KOON: Thank you. I'm Dave Koon from
8 New York. One of the things that you just mentioned
9 is the analog phone and trying to get them out of
10 people's hands. Do you have the names of all those
11 people and the type of phones they have so that you
12 can mail to them, and say, you're not -- you can't be
13 found in a state of emergency and how, you know, this
14 is what we can do to help you, or how do we get out to
15 those people who have those analog phones and still
16 using them, and don't have the GPS chip or don't have
17 any way of being located. That's going to be a real
18 challenge, I think, for all of us and I think we all
19 need to work toward that, but how can you help us with
20 that?

21 MR. GRUIS: Well, I guess I'm not much of
22 a marketer, but I believe that we do know who those
23 customers are. We talk to our customers quite a bit,
24 being a small carrier, and we're local, in these
25 little small towns. I'm not so sure that they are as

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1 interested in some of the new fancy technologies as
2 they are in having their phone work just the way they
3 feel like it should, and we do spend quite a bit of
4 time trying to educate our customers that really this
5 digital stuff is getting a lot better now, and their
6 perception is their perception, and they just prefer
7 to have what they have right now, so I don't have a
8 good marketing story for that. I'm sorry.

9 MR. KOON: Even the 911 -- even the
10 location of the cell site --

11 MR. GRUIS: No, I would say no. They're
12 very independent people up there in northern
13 Minnesota, northern Vermont, and northern everywhere
14 else where we operate. They've got it all figured
15 out.

16 MR. GASAWAY: I'm Wayne Gasaway. The
17 accuracy in locating your customers, is that a factor
18 of the terrain or the technology or a combination of
19 both?

20 MR. GRUIS: I think it's got something to
21 do with the terrain. The way our networks were
22 designed, we chose to implement TDOA at existing TDMA
23 cell site locations just because of all the things I
24 talked about with extra time frames and everything to
25 add location only sites, and you know, in northern

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1 Minnesota we get away with having cell sites 40 miles
2 apart from each other. They're real tall, and they're
3 500 feet tall, and they're 40 miles apart from each
4 other, and you can't see three cell sites at one time
5 from your phone. You don't need to to place a
6 wireless call, you need to to place a location call,
7 so I think it's a combination. In Vermont there's
8 just places that you don't have any coverage because
9 it's not practical or possible to cover the tops of
10 mountains or what not, but it's a combination of both,
11 I think, and largely just because of the network
12 design.

13 MR. GASAWAY: If there were more cell
14 sites, do you think it would work satisfactorily?

15 MR. GRUIS: Yes, and in fact, we see that
16 where in Burlington we've got 10 or 12 cell sites, it
17 works pretty good there. You get 50 miles away from
18 Burlington, not so good anymore.

19 MS. HANSEN: Hi. Jenny Hansen from
20 Montana, and I think from a PSAP perspective, and
21 Assemblyman Koon's issue on outreach and educating the
22 ranchers with the bag phone, we've got to identify the
23 uniqueness in rural America and yeah, I'm from
24 Montana, you can say everything you want about people,
25 some people that don't want to be found, and they want

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1 to hang on to those bag phones and they want their
2 roads paved, but they want that last best place
3 privacy and they just want convenience of being able
4 to make a phone call and the issue of 911 and finding
5 me doesn't ever come up, and frankly, they don't want
6 that.

7 COMMISSIONER ADELSTEIN: Art?

8 MR. PREST: Kyle, how long does it usually
9 take you to build a cell site in Vermont from start to
10 finish or from permit to construction?

11 MR. GRUIS: In Vermont, we have some
12 unique challenges. It can take anywhere from probably
13 one to three years and sometimes more. It really
14 varies by state. There are some that are much more
15 stringent on their requirements than others. So,
16 three years is not uncommon though.

17 MR. POMERANTZ: Scott Pomerantz from
18 Global Locate. I can tell you what it's taking in
19 regard to availability of handsets in the GSM world is
20 absolutely true. It's quite a bit more difficult to
21 solve the GPS location problem in a GSM environment
22 than in a CDMA environment, AND we've been working as
23 I mentioned, heads down on that for the better part of
24 four years with veterans from the GPS business. That
25 problem has been solved. The network is in. We have

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1 a worldwide reference network that's deployed with 100
2 percent POP coverage. If you have a cell phone on the
3 planet, we can get data to you. But your point is
4 well taken. There is no GSM phones yet with the GPS
5 chips in --

6 MR. GRUIS: We have two microphones going
7 there.

8 MR. POMERANTZ: -- and I know that first-
9 hand and they will be here in volume by the end of
10 2004 and phasing in in the middle of 2004, so you can
11 rest assured they have been tested, beaten, prodded,
12 and they are working very well. So if they are not
13 here yet, they will be, and they work fine. The
14 network is tried and true. Our network is in Nextel.

15 We provide for Nextel E911 data services, that's
16 feeding the satellite data over their network through
17 our network and our partner, with Nortel on that
18 particular implementation. We signed up for a five-
19 nines, that's five minutes of outage a year, as you
20 well know. We beat that the last year. The data is
21 there, and the only thing we're waiting for now are
22 the handsets, and we're working hard on that as well
23 with our chip sets, so a little patience.

24 MR. GRUIS: Great, well, we're pushing
25 hard on the GSM as hard as the little guy can with the

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1 handset guys, but anybody else that would like to help
2 us push, that would be great.

3 MR. NEIHARDT: Thanks. Is this on? Jonas
4 Neihardt with Qualcomm, and just to embellish Scott's
5 point on the handset availability, and to look back at
6 the CDMA handset experience, first of all, on GSM, we
7 do understand that vote-on-phone is going to have a
8 GSM phone out in the next six months with assisted GPS
9 on board in volume, and that is just another data
10 point to backstop Scott's point on assisted GPS over
11 GSM, and let's look back on the CDMA experience. I
12 mean, right now, virtually all the new activations
13 coming on through the CDMA pipeline include assisted
14 GPS and we have the parts cost down on that platform
15 down to 70 cents per handset, and I know that it was
16 substantially more expensive at the beginning of that
17 process.

18 Moore's law is aiding us. We're burning
19 the measurement capability into the chip site, and we
20 don't a la carte price that from Qualcomm. That's
21 just part of the package, and it's -- again, it's
22 becoming a nominal expense and inevitably, that's
23 what's going to happen for the GSM side too. This
24 country is just too vast to have triangulation in all
25 places. It's just a big -- too big a country, and

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1 you're right on the antenna siting issue, it's too
2 hard to put sites up everywhere that you would need
3 them, and that's the bad news. But the good news is
4 that again, Moore's Law is inevitably enabling us to
5 burn the measurement capability into different types
6 of handsets, and those are on the way.

7 MR. GRUIS: Sounds like great news.

8 MR. PETERSON: Ernie Peterson with 3
9 Rivers in Montana again. I want to echo that. We've
10 found the CDMA handset pricing to be acceptable. It
11 really is coming down to those levels. But to echo
12 your point, the challenge we now face is reaching
13 those final penetration rates, because again, we still
14 have customers who are bringing in their own phones,
15 or bringing in grey market phones, or whatever, so
16 while that price has come down to where it's an
17 acceptable level to sell those and put those into our
18 markets, I still think we're going to face some
19 penetrations at the very end that are going to be very
20 tough to make, because people just are not going to go
21 there, and I recognize the fact that you can tell them
22 over and over again that this phone is safer, and
23 brings them more location technology but, I guarantee
24 you, when it comes down to a price or a phone they
25 already have, a lot of them just don't care.

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1 MR. GRUIS: Oh, I agree, and the second
2 point is to, you know, allow us to get these networks
3 in place and start moving those handsets out into the
4 customer base rather than spending money on an interim
5 solution.

6 MR. WICKHAM: I'd like to add a little bit
7 to -- in describing an area that we serve, which is
8 rural, it's 92,000 square miles, a geographic area
9 bigger than the state of Minnesota, we have nine home
10 rule villages and we serve the oil industrial complex
11 which accounts for about 20 percent of the U.S. oil,
12 and we also serve the beginning of the Trans-Alaska
13 Pipeline. We serve a harsh environment. Safety is a
14 way of life, and analog telephones do the job in the
15 tundra, in the Arctic Circle. They have great
16 coverage. We're the same way. In answer to Art's
17 question, from the time we start to build the cell
18 site, it takes us about three years. There are no
19 roads in the Arctic Circle. You either fly or you
20 don't get there. It has to freeze up before we can
21 haul towers and cell site equipment, so you know, the
22 analog phone and TDMA, they're doing the job, they're
23 doing what these people want, yet we can't meet the
24 FCC's requirements. So, from a real rural small
25 company, you know, the answer has got to be around a

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1 long time and so does TDMA.

2 MR. GRUIS: I agree.

3 MS. BENNETT: I'm Cary Bennett. I'd just
4 like to put in here as a solution, because we're
5 supposed to be looking for solutions, is that the
6 handset vendors, if they can all put a GPS in and I
7 grant you that some people don't want to be found.
8 Maybe they can just turn their phones off when they
9 don't want to be found. But if we went forward
10 thinking, you know, aggressively here, and had all
11 handsets made with GPS technology going forward,
12 wouldn't we eventually be where everybody wanted to
13 be, and we would be doing that at an affordable cost,
14 because I heard you say it doesn't cost very much to
15 put this in the handsets, and we could move on and get
16 to where we need to be, and I think that's one angle
17 we need to look at, is the handset vendors making all
18 future phones GPS capable.

19 MR. POMERANTZ: It's not going to happen
20 tomorrow, but it is happening, and it's a good start.
21 It's a pretty good manufacturer.

22 UNIDENTIFIED SPEAKER: Excuse me. Could
23 you repeat the question? Some people couldn't hear
24 you in the back.

25 MR. POMERANTZ: Oh, I'm sorry. I was just

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1 commenting on the fact that the technology GPS is
2 going in the handsets. Nokia announced publicly that
3 they are planning in their roadmap to put assisted GPS
4 technology in every one of the handsets that come out
5 of their factory.

6 MS. BENNETT: Even TDMA?

7 MR. POMERANTZ: If they can -- I think
8 they're really talking about CDMA. I think they're
9 talking about GSM. Third-generation, so --

10 MS. BENNETT: I think that's the problem
11 we have with these legacy rural networks. You can
12 hear they're not going away anytime soon, and we need
13 handset vendors to make handsets that have GPS in them
14 for TDMA, and if they can do it for analog,
15 I don't know if it's technically possible, but that's
16 where we need to, I think, focus some of this because
17 we as rural carriers do not have enough volume to
18 drive the handset vendors to do this, but maybe we
19 could get some help from the FCC and Congress to do
20 it. Thank you.

21 UNIDENTIFIED AUDIENCE MEMBER: Can you
22 share with us what the expectation level is for rural
23 PSAP where the accuracy is falling short? Have they
24 shared with you their view on this?

25 MR. GRUIS: I'd say in general they've

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1 been very cooperative with us. We're telling them
2 basically the same stories I'm sharing today and
3 saying look, here's what we've done, here's what we
4 can get for you. What do you want to do now? Really
5 these networks haven't been online for a period of
6 time that we really arrived at conclusions everywhere.

7 But I think an important point for carriers is to
8 make dang sure that when you put these networks in,
9 talk to your PSAP communities and make sure that they
10 understand where you're coming from, what your
11 challenges are, and you know, lay some options out for
12 timing and it's really up to them to establish a
13 really hard and fast timeline for us in many cases,
14 and it's, you know, their patience and their
15 cooperativeness with us helps us get both of us to
16 where we want to be, so in general, I think it's been
17 very receptive and they understand where we're coming
18 from. Tim, did you have a question?

19 MR. DUFFY: Commenting about the -- this
20 is Tim Duffy from Dobson Communications, about the --
21 trying to get folks like Nokia to put assisted GPS in
22 TDMA, well, the good news is that the TDMA handset
23 manufacturers will no longer be manufacturing a whole
24 lot of TDMA going forward, but it's the legacy issue,
25 and as a rural carrier, I'm concerned about the amount

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1 of money that carriers like Rural Cellular and Dobson
2 Communications are investing in a technology that does
3 not meet the requirements set out by the FCC as well
4 as the expectation on the PSAP level. It's a lot of
5 money, and we're -- Kyle, you referred to the dead
6 spots that occur in vast areas of your network, and,
7 of course, I've got those as well. Maybe we don't
8 know exactly where they are, but at least they could
9 make a call if we're spending money on building new
10 coverage, rather than putting in technology that at
11 best, as you pointed out in northern Alabama, was
12 \$200,000 worth of expense that your company put in for
13 absolutely no result. So I just, with temperance,
14 would like to echo your sentiment and some pushback
15 and taking a look at the entire scope of what we're
16 trying to accomplish here, and how much money we're
17 putting to little value going forward.

18 MR. GRUIS: Well, we could have done a lot
19 of -- made a lot of headway on our overlays with that
20 \$6.5 million, I can tell you that.

21 MR. CADE: Bill Cade from APCO, and I
22 certainly want to make it from our perspective, from
23 PSAP perspective nationwide, certainly reflect the
24 fact that we are urging our PSAP managers around the
25 country to be the best informed partners in this

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1 discussion as they can be. I think that's helpful to
2 everybody, to where we have people like yourself who
3 are willing to have an honest discussion and talk
4 about the expectations over what we can get, and so on
5 and so forth, and continue that dialogue, I think
6 that's extremely important. I think there's a little
7 reluctance on the part of PSAPs however, to be
8 perceived as the grantors of forbearance for long
9 periods of time into the future. I think that's got
10 to be worked on some more.

11 The other piece of this, quite candidly,
12 is that there is still a big public education piece
13 because how do we notify the traveler into these areas
14 that the device that they rely upon in Burlington
15 doesn't work that 50 miles out -- as well at 50 miles
16 outside of the city, so there's several pieces to this
17 that certainly APCO is interested in pursuing in many
18 different ways, and I certainly applaud the
19 cooperative experience you've had, your company has
20 had, and certainly with the State of Vermont and
21 others. Thank you.

22 MR. NEIHARDT: Just a -- Jonas Neihardt
23 again. Briefly, I want to touch upon the privacy
24 point, because I think it's really important. We all
25 deserve to have our privacy protected, not just

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1 Montana ranchers but everybody, and for that reason,
2 on the assisted GPS side, we designed the chip set and
3 the software with a functionality so that it could be
4 turned off by the user, and you can have the thing on,
5 of course, if you desire. Otherwise, you can turn it
6 off and the GPS measurement function will only
7 activate if you dial 911, and that will - that cannot
8 be deactivated. In the case of 911, it will be
9 assumed you want to be found, but again, the
10 measurement capability can be disabled at the handset
11 by the user, and I think I need to put that out there.

12 MR. GRUIS: Yes, that's the way I
13 understand it. If we want to use commercial
14 applications, you can add that functionality to it. We
15 have time for just one more question from the
16 roundtable, and then we need to move on to our next
17 speaker.

18 MR. PREST: Not a question, but just an
19 echo of the comments that -- first off, for Evelyn
20 Bailey's comment about appreciation of your honesty,
21 that's very much noted. But also, you have provided a
22 good demonstration of that partnership that is
23 required between the carriers and the LECs and public
24 safety, and the local governing authority. Again,
25 that is based upon good faith, and reasonable

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1 expectations. So you're to be applauded for that
2 partnership.

3 MR. GRUIS: Well, thank you. I think most
4 of the carriers out there, and the PSAPs and everybody
5 are trying hard. It's just a long way to go. Thank
6 you.

7 COMMISSIONER ADELSTEIN: Thank you, Kyle.

8 Next we'll hear from George Marble. George is
9 responsible for marketing and external affairs for the
10 network solutions division of the Andrew Corporation.

11 Andrew manufactures, markets, and implements
12 Geometrics Wireless Location System, a network overlay
13 E911 wireless caller location system. Prior to
14 joining Andrew, he served as executive director with
15 Bell Atlantic International Wireless where he was
16 responsible for planning, operations and marketing,
17 and he also served as executive director in technology
18 planning and marketing for both Bell Atlantic and
19 AT&T, so he's seen life from both sides. George?

20 MR. MARBLE: Let's see if I can remember
21 the instructions I had about setting this up. I think
22 I've met many of you in the past as an employee of
23 Grayson Wireless. Andrew Corporation became a vendor
24 on July 15th of this year of network based location
25 systems, our product is called Geometrics, when it

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1 acquired Grayson wireless and all of the other
2 divisions of Allen Telecom.

3 Just to set the stage about what our
4 product is and what our experience is up to this
5 point. The name of the product is Geometrics. It's a
6 wireless location system. As I mentioned, it was a
7 product of Grayson Wireless. It's a network-based
8 system. It uses uplink TDOA or commonly TDOA as its
9 fundamental location technology. We are able to
10 locate, to overlay, angle of arrival in special cases
11 where it's needed in difficult circumstances.

12 It's compatible with all cellular and PCS
13 technologies in use in the U.S. and it's currently in
14 service with every PCS and cellular technology. The
15 only wireless technology that it's not in service with
16 is IDENT, which is the air interface used by Nextel
17 and a couple of other carriers.

18 We began installing systems with our first
19 installation in Saint Clair County, Illinois in
20 October two years ago, October 2001. Since then we've
21 installed our system in over 12,000 cell sites, 34
22 states we estimate that they're covering currently,
23 about 13 million subscribers. The environments that
24 they're in service in are in urban, suburban, rural
25 and highway. Our product is offered as a turnkey

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1 system wherein we manufacture the product, provide the
2 equipment and the software. We design the system for
3 the particular application for the customer, we
4 install the system, and then we test it operationally
5 and accuracy-wise.

6 I think that we can make a few comments
7 that are directed particularly at rural due to some
8 experience that we've had up to this point with rural.

9 We have done some implementations with tier three
10 carriers. We've done significant implementations with
11 tier one and to a lesser extent, with tier two
12 carriers, all of which have involved rural.

13 The system was designed to begin with, to
14 be installed at cell site locations, existing cell
15 site locations, and we've tried to optimize the system
16 so that it works as well as possible, limiting the
17 installations to existing cell sites. We've optimized
18 this product to do one function, and that is
19 locations. In order to do the location function, it
20 has to detect a radio wave at several sites, at
21 several receiving points, and we've been able to make
22 the system much more sensitive than is the host
23 cellular network itself, that increases or enhances
24 the ability of our system to detect the signal from
25 the caller at multiple receiving points.

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1 In the case of TDOA, it is essential for
2 our system to be able to receive the signal at at
3 least three points. When that can't be done, and if
4 the signal can be received at two points, then we can
5 overlay angle of arrival technology. We've had to do
6 that so far in a minimum of cases, but nevertheless,
7 there are cases that we can determine before we put in
8 a system where angle of arrival is required to achieve
9 the Phase Two accuracy goal.

10 Our system can be used to support multiple
11 type technologies simultaneously. That is, if a
12 carrier is in transition going from TDMA to GSM,
13 they're able to install our system to cover their
14 current TDMA operation, and move that same system over
15 to cover GSM as they implement it. We have thousands
16 of installations doing exactly that today. We have
17 systems that are currently handling TDMA, GSM, and
18 APS. We have other combinations where we're handling
19 CDMA, APS, and 1XRTT, et cetera, et cetera. Any mix
20 of technologies can be handled by the system.

21 I think an important thing to realize is
22 that we have the ability as part of our design process
23 to model specific applications given characteristics
24 of the carrier's network and the particular situation
25 that the carrier wants to cover, in the geography they

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1 want to cover, we can model their system, and model
2 overlay the performance characteristics of our system
3 to pre-determine what is required of our system in the
4 way of deployment in the particular situation, and
5 what kind of accuracy can be expected from that
6 system.

7 It's an extremely important part of our
8 provisioning process that we're able to pre-determine
9 what the accuracy is going to be of a system, and then
10 guarantee that if the carrier implements that system,
11 according to that design, then we will guarantee the
12 accuracy, that the system will meet the FCC's Phase
13 Two requirements. Ultimately, however, the carrier
14 makes the decision on what to deploy, and if the
15 carrier makes a decision to deploy TDOA only, and the
16 requirement is that a combination of -- in a
17 particular circumstance might call for TDOA and AOA,
18 then that system departs from the design and cannot be
19 expected to meet the requirements or the accuracy that
20 the system we designed would achieve.

21 As I've said before, we've designed and
22 implemented a number of systems for rural
23 applications. Actually we've designed many more than
24 have been actually installed. We've done this for
25 carriers who have contemplated the use of our system.

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1 Many of those are tier three carriers. What we've
2 found is the following.

3 Each situation has its own
4 characteristics. Every single situation has to be
5 studied, and an appropriate solution determined for
6 the particular circumstance. There is no such thing
7 as a standard rural network. There is no such thing
8 as a standard geometry of the cells with respect to
9 each other, or of terrain, et cetera. Each
10 circumstance requires its own solution, and that can
11 only be determined by modeling and engineering ahead
12 of time.

13 We've determined that most of the rural
14 situations that we've studied and that carriers have
15 brought to us can be implemented with a geometric
16 solution, and met the E911 Phase Two accuracy
17 requirements. As I said before, there is no standard
18 case for rural, and we inform carriers in that design
19 process, or as a result of that design process, if we
20 don't believe that our system is going to be able to
21 produce Phase Two accuracy, then we notify the
22 carriers before they install the system.

23 Our installations to date have all been at
24 existing cell sites. We've implemented no equipment
25 at supplementary receiving points. 97 percent,

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1 slightly over 97 percent of the installations to date
2 have been pure TDOA. Only three percent have been
3 angle of arrival, 300 out of roughly 12,000, a few
4 installations more than 12,000.

5 The term string of pearls is used a lot
6 when referring to rural situations and particularly to
7 highway coverage. In our experience, there is very
8 little true string of pearl, there is a very small
9 inventory of true string of pearl situations at large.

10 In general, highways generally curve enough to
11 produce the requisite geometry in networks that is
12 required for a TDOA solution. If, however, our system
13 has to meet accuracy or, I'm sorry, has to solve a
14 true string of pearls situation, then we can implement
15 angle of arrival in combination with TDOA in order to
16 produce a solution.

17 We've also found that rural networks tend
18 to be clustered around population centers as you might
19 expect, and TDOA alone can solve the problem in most
20 of these cases, and certainly in very many of these
21 cases.

22 So, in summary, we have implemented our
23 system successfully and that means by the E911 Phase
24 Two criteria in rural environments. We have the
25 ability to predict ahead of implementation exactly

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1 what kind of accuracy should be expected over the
2 study area, over the implementation area, of our
3 system according to a specific design that we would
4 recommend that carriers implement for our systems.

5 There is no, as I said before, standard
6 rural network. There is no standard geometry. There
7 is no standard topology or morphology, and each case
8 has to be studied before a determination can be made
9 that there is a solution or that there is not a
10 solution. However, as a final bullet point, we can
11 say that our system can meet the Phase 911 Two
12 requirements for many rural situations.

13 I just want to digress from what I had
14 prepared, because I think left out of this is the
15 question and addressed somewhat, is the question of
16 what if the signal can truly only be seen by one cell
17 site, and that cell site is equipped with a geometrics
18 equipment. If that's the case, then our system is not
19 capable of producing an E911-2 compliant solution.
20 However, we've found that that is the case in only a
21 very small minority of the situations that we've been
22 confronted with, either by systems that we've actually
23 installed, or by designs that we've done for potential
24 applications.

25 I'll be glad to answer questions that you

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1 may have.

2 MR. HOLDER: Allen Holder with Lincoln
3 County, West Virginia. The equipment that you
4 mentioned I think is exactly what we're seeing in our
5 rural location, that is not meeting those standards as
6 you spoke of, but you are not using angle of arrival.

7 So if we go back to the carrier and we ask them to
8 look at the installation of angle of arrival, can we
9 expect to see a marked improvement from what we see
10 now?

11 MR. MARBLE: I really can't answer your
12 question without knowing the exact circumstance. If
13 the caller is -- if the caller can only be -- if their
14 signal can only be received at one cell site, then
15 angle of arrival would not solve that situation. So I
16 would need to know the exact circumstance you're
17 talking about.

18 MR. HOLDER: I guess I'm in that minority
19 you spoke about then. Thank you.

20 MR. MARBLE: Yes, sir?

21 MR. PETERSON: I have the same concern
22 because I'm struggling with the fact you're saying
23 that there's very few places where only one site is
24 the serving carrier, and you can only see one site. I
25 can guarantee you most of my sites, one site is the

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1 only site you're going to see, and I would have to say
2 that across much of rural Montana and I would think
3 Alaska, you would find that to be the case, so I
4 struggle with the fact that you're not seeing very
5 many locations where only one site can be seen.

6 MR. MARBLE: Well, I can only speak for
7 the cases that have been brought in front of us, and
8 of all of the cases that have been brought to us so
9 far by carriers, and those are the ones -- those are
10 the only people who can bring us these examples, we've
11 only seen one where we didn't have, absolutely didn't
12 have some solution. That was a case of multiple, very
13 isolated sites. I think -- and we informed the
14 carrier that we didn't have a solution, and gave them
15 whatever information they needed to inform the FCC of
16 that case. Yes, sir?

17 MR. GASAWAY: I'm Wayne Gasaway with
18 Advantage Cellular, and we have successfully deployed
19 the network based system in Tennessee, but we are
20 somewhat unique. We do have hills, but we also happen
21 to have the only mountain in middle Tennessee, right
22 in the middle of our service area, which makes it a
23 lot more noticeable and makes it effective a 1300 foot
24 tall tower, but we have deployed it, it is working,
25 but it took more than just a combination or the

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1 technology in the number of cell sites.

2 I want to bring another point into this,
3 the economics involved. It was very expensive, but
4 make another point, the state in Tennessee was very
5 cooperative and we were able to work together to get
6 it done, but we did do it with a network-based system
7 that we feel meets the FCC criteria. Now we do have
8 some isolated spots out on the end where it's maybe
9 not as accurate as it should be, but we feel like, and
10 we're still, we have five more cell sites that we're
11 planning to build out. We have about 40 cell sites
12 now in an eight-county area, so it's fairly highly
13 populated with cell sites, but it works.

14 MR. MARBLE: We remember that. That was a
15 challenging one. Any other questions?

16 MR. POMERANTZ: A real quick comment. As
17 the AGPS phones come onto the market, some of the
18 carriers that are less than satisfied with some of the
19 performance, the equipment and the investment that has
20 been deployed, in many cases, I believe, could
21 probably be viewed as additive to AGPS. While the
22 processing is not 100 percent meeting the FCC
23 requirements for accuracy and availability, there is
24 some valuable information that is being collected, and
25 that information, combined with AGPS, perhaps could

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1 render position in those areas where it is not in an
2 affordable way. So just to keep that in the back of
3 your mind. There is some hope that maybe you'll be
4 able to get some return on some of that stuff. I
5 wouldn't throw it out quite yet.

6 COMMISSIONER ADELSTEIN: I think I'll ask
7 our next panelists to come up if they could, and we're
8 going to switch out again some of the roundtable
9 participants. Well, we've heard about the different
10 roles of shareholders and different types of
11 technology that are out there in rural markets, and
12 now we want to turn to the cost of deployment, and how
13 small rural wireless carriers and PSAPs can handle
14 those costs. We've got a great panel with a lot of
15 experience to lead us through this important
16 discussion, and someone you may not know, but we've
17 added Ed Cameron from the RUS to our panel, and that's
18 not reflected on the agenda. So we have a lot of
19 speakers here. We're running a little bit behind
20 schedule, but that's okay. We may go over our
21 scheduled time for lunch because this just underlines
22 how important these issues are, and we want to really
23 get through this in some detail. So first, I'd like
24 to ask our new members of the roundtable to introduce
25 themselves, anybody who wasn't on the earlier panel.

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1 MR. WINEGRAM: Dave Winegram, Motorola.
2 I'm with the GTSS Global Telecom solution sector. We
3 handle infrastructure worldwide and for CDMA for North
4 America.

5 MR. MCCRACKEN: Kevin McCracken from
6 Nortel Networks wireless division. We sell wireless
7 infrastructure to the carriers for CDMA GSM as well
8 as third-generation technologies. We're based in
9 Richardson, Texas.

10 COMMISSIONER ADELSTEIN: That's it. Well,
11 we have four speakers. I'm going to start with Art
12 Prest. He has over 35 years of experience in the
13 telecom industry, which includes stints at Bell Labs
14 and Western Electric. After leaving the Bell system,
15 he worked in management roles at Polaroid and Telco
16 Systems Fiberoptics Corporation. In 1994 he moved to
17 Washington to work for CTIA as vice-president for
18 science and technology, and during that time served on
19 the FCC's network reliability council steering
20 committee and on several NRCs themselves. Currently
21 Art is vice president and chief technology officer for
22 Alpine PCS and RFB Cellular, two independently owned
23 world wireless carriers. Art is responsible for
24 technical and regulatory issues for the two companies,
25 and he was recently appointed to the board of

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1 directors for the Rural Cellular Association. Art?

2 MR. PREST: Than you, Jonathan. Before
3 the session began, I was talking with Ed Hall from
4 ATIS and Doug Roland from Lucent, and Doug stood up
5 and he said, have you two guys shrunk, and I started
6 reflecting back on the fact that I've been working on
7 wireless E911 location since 1994, when I was 6'4" and
8 25 years old, and had blonde hair, and I started
9 looking around the room yesterday and I looked around
10 again today, and I see some familiar faces.

11 When this thing first started we could put
12 everybody that was involved probably in my SUV. It
13 was Ed Hall, myself, Mike Alshul, Jim Hobson, Mary
14 Boyd, and John Melcher, and I look around now and I
15 see all these new faces, and I see the progress that
16 we've made and it actually is very exciting for me to
17 see the progress we've made.

18 Today I'm going to talk on behalf of RCA,
19 an association of about 100 rural wireless carriers
20 covering over 15 million POPs across the United
21 States. Most of these members were early entrants in
22 the market, and they have survived because of their
23 focus on the needs of the rural carriers. Many RCA
24 members continue to operate effectively using analog
25 and TDMA networks which you've heard a lot about this

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1 morning, and although a rapid conversion with CDMA is
2 not likely, most of our members are making plans for
3 CDMA or GSM overlays, even if they have not yet
4 installed such equipment.

5 Some of this is going to be beating a dead
6 horse because you've heard a lot more about this than
7 I anticipated we would be hearing, but there are three
8 major challenges facing the rural carriers. One is
9 achieving the FCC accuracy requirement, second is
10 paying for the FCC -- I'm sorry, the Phase Two
11 location systems, and third is finding the resources
12 within a small carrier to implement them.

13 As indicated in Dale Hatfield's report,
14 911 networks in rural areas don't lend themselves
15 easily to the network-based location systems, the long
16 distances between cell sites, and the linear network
17 topologies make triangulation difficult. That's
18 exacerbated by the fact that there are no handset-
19 based solutions for legacy and longitudinal networks
20 or even for the new GSM networks. To complicate
21 matters even more, many states don't have reimbursement
22 plans, while other states have plans that only provide
23 funds based on how much they contribute to the fund,
24 and finally, like my company, we don't have the deep
25 resource to make all this happen.

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1 You've heard a lot about the accuracy this
2 morning, so I'm not going to spend a lot of time on
3 this. I think the most important part of this is the
4 95 percent penetration that we need by December 31,
5 2005. Those of us that are working on this really
6 want to make this happen. We think the handset-based
7 solution is the way to make it happen, but given that
8 date, it really makes it difficult for us to achieve
9 that date, which leads us to some problems here, and
10 that is should a carrier dedicate its limited capital
11 resources to installing network-based equipment that
12 will not produce accuracy results that the PSAPs
13 really need, or should cell sites be turned off to
14 avoid a violation of the rules where there is no hope
15 of good location accuracy, or should a waiver request
16 be filed seeking more time, perhaps another year or
17 two, to allow for a CDMA or GSM overlay to be
18 completed in conjunction with a handset-based
19 solution.

20 On the subject of cost recovery, RCA
21 members have been severely handicapped by the removal
22 of carrier cost recovery as a condition to obligations
23 to provide Phase Two service. We believe that
24 wireless carriers have a right to cost recovery,
25 wireless carriers bear the brunt of more than 80

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1 percent of the cost of providing E911 Phase Two
2 service and yet, is the only participant that isn't
3 guaranteed reimbursement of his costs. In addition,
4 small carriers typically do not have the pricing power
5 in their markets due to the effectiveness of large
6 carriers' nationwide roaming calling plans. This
7 means in many states small carriers' Phase Two
8 installation costs with the other cost recovery plan
9 or the ability to pass those costs on to a small
10 subscriber base. As a result, Phase Two costs become
11 a large part of our capital budgets meaning other
12 service improvements, such as improvement in coverage,
13 must be delayed. We add in the cost of COLEA, local
14 number portability, and other unfunded mandates and
15 the future of rural wireless carriers becomes bleak.

16 Now let's look at a real life example.
17 This is my company in Michigan. We're one of the few
18 privately held companies still in existence. We serve
19 256,000 POPs, over 12,400 square miles with an average
20 population density of 21 people per square mile.
21 We're just completing Phase One service to the 17
22 PSAPs. That's 15,600 POPs per PSAP in northern
23 Michigan. I'm proud to say we were the first wireless
24 carrier in the state of Michigan to provide Phase One,
25 and we're just about completing that today. We've got

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1 70 cell sites switched off a Motorola switch for which
2 there is no network-based solution available today,
3 although Andrew Corporation is working on a solution
4 for it. In our case, a handset solution is our only
5 option, and although there's a wireless carrier
6 reimbursement program in Michigan, reimbursement is
7 limited to 125 percent of what we contribute to the
8 fund. Of the 53 cents that we collect each month, 25
9 cents goes into the wireless carrier reimbursement
10 fund. However, capital expenditure or cap ex for a
11 network-based solution, if there were one, would
12 require 21 years of contributions for RFB to be
13 reimbursed for its implementation, and that assumes
14 there's no monthly operating costs or op ex. You
15 throw in op ex, the op ex can be two to three times
16 what we actually contribute to the fund, and we can
17 get reimbursed from the fund.

18 However, there is a clause in the state
19 law which I'll talk about that we are working to see
20 if we can collect additional money for the fund to
21 make this happen. Now let's zoom in on my first Phase
22 Two request, which happens in Mackinac County. I know
23 it looks like Mackinac. It took me a long time to
24 realize it was Mackinac. It's in the upper peninsula
25 of Michigan. We serve 12,000 POPs over 1,000 square

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1 miles. Note the exact green color showing zero
2 population per square mile over large areas of the
3 country. Those are mainly 80 to 100 foot pine trees,
4 which are not real friendly to propagation.

5 We have six cell sites marked with red Xs
6 that serve 720 subscribers having 1,020 phones, plus
7 roamers from all over the state. As I said, we
8 collect 53 cents, 25 cents goes into the fund. That's
9 about \$3,000 a year times 1.25. Say \$4,000 a year I
10 contribute to the fund that's reimbursable. I don't
11 think I have to crunch a lot more numbers to
12 illustrate the kind of problem that we're facing.
13 Fortunately there is a clause in that state law that
14 allows us to collect more. We're going to be pursuing
15 that, as I indicated. However, that only covers the
16 capital and as I said, the op ex could be two to three
17 times what it's going to cost me on a monthly basis.
18 I can't recover that.

19 I'd like to point out that this is our
20 first Phase Two request, and therefore averaging it is
21 not an option. I can't -- there's nothing to average
22 it with that's better. Lastly, I want to point out
23 that because all of the cell sites are on Lake
24 Michigan and Lake Huron, and one is on an island, it's
25 kind of difficult to locate additional cell sites. I

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1 haven't found buoys that will support them, so --

2 In conclusion, RCA suggests that the
3 public safety community and the FCC be receptive to
4 timeline relief requested for RCA members and other
5 rural carriers who face the choice of wasteful capital
6 expenditures on a network-based solution that might
7 not be effective, or having to turn off cell sites to
8 avoid a violation at the same time unfortunately
9 cutting off basic 911 service, or going forward as the
10 economic circumstances allow with a CDMA or GSM
11 overlay after which a handset-based solution for Phase
12 Two will be available.

13 To make all this happen in the absence of
14 federal funding, we need protected delta self cost
15 recovery without the threat of lawsuits. What I mean
16 by delta, protected delta self cost recovery is some
17 type of legislative definition that says that wireless
18 carriers have the right to put a line item on their
19 bill to pay for 911, and delta being if you have a
20 program in the state that is collecting money, then
21 you can combine the two to help pay for these
22 expenses.

23 Assisted GPS which we talked a lot about
24 today. Those kind of phones by 2004 or 2005 are
25 absolutely necessary, particularly for GSM, and

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1 relaxation, extension or elimination of the December
2 31, 2005 date for 95 percent penetration into our
3 consumer customer base, and finally, timeline relief
4 for worldwide wireless carriers pursuing CDMA or GSM
5 network overlays, or legacy networks, coupled with a
6 plan to deploy a handset-based solution. Maybe in
7 this way we can light the end of the tunnel together
8 and stop tripping over each other in the dark. Any
9 questions? Yes, Mike.

10 MR. CURTIS: Mike Curtis with Curtis &
11 Associates, and I just wanted to amplify on one point
12 that you made. When we were talking about the AGPS
13 handsets that are becoming available and going to be
14 available, we need to keep focused on the fact that
15 the current commission rules said that you had to
16 start selling those handsets this past September, so
17 even if you're an AMPS and TDMA network provider
18 migrating to CDMA where handsets are currently
19 available, you could not start selling those
20 compatible handsets because they would not work on
21 your network as it existed in that point in time, so
22 as we're focusing on trying to reach solutions, we
23 need to keep focused on the fact that there needs to
24 be a realization that the rural carriers need to rely
25 upon the handset solutions, and they need to be given

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1 a realistic time frame in which to implement those
2 handsets.

3 MR. PREST: I agree with that. Yes?

4 MR. MCCRACKEN: Yes. It's Kevin McCracken
5 from Nortel Networks, and just to clarify some concern
6 about the cap ex, I can confirm from a wireless
7 network infrastructure perspective that as far as the
8 cap ex required to implement assisted GPS, it's
9 significantly lower including the cost of the central
10 office equipment required to do position determination
11 for AGPS, not just cap ex but also up front deployment
12 costs as well as ongoing operations and maintenance.
13 We've seen this through several CDMA deployments as
14 well as deployments within the IDENT environment
15 today for AGPS.

16 MR. PREST: For rural carriers there is a
17 problem though, even for an AGPS system, and that is
18 the fact that the PDE is pretty expensive. The only
19 solution for a rural carrier is to outsource that to
20 either Intrado or TCS, but that dramatically raises
21 your op ex, which puts us -- that's why I said in a
22 handset solution our op ex actually exceeds what we
23 can recover from the state.

24 MR. MCCRACKEN: Right, and I know just on
25 the cap ex perspective for the PDE, that is something

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1 that I'm directly involved with, about 17 GSM
2 prospective customers at the tier three level today,
3 and that is something that we have significantly
4 addressed in the last three to six months as far as
5 repackaging and driving costs out of our PDE solution
6 to be able to offer it to the tier two and three
7 customers, so we do have -- we're making movement in
8 the right direction from that perspective.

9 MR. PREST: Good. That's good to hear.
10 Questions? Thank you.

11 COMMISSIONER ADELSTEIN: Thanks a lot.
12 Next we are going to hear from Mike Amarosa, who is
13 with TruePosition. He retired as deputy commissioner
14 of the New York City Police Department five years ago,
15 and while he was with the NYPD he built and managed
16 the nation's largest 911 public safety answering
17 center, and implemented new wireless technology for
18 40,000 members of the NYPD. Since retiring, which
19 he's not really retired, he's worked at TruePosition,
20 an E911 wireless solution provider where he currently
21 is the senior vice president for public affairs. He
22 brings 30 years of law enforcement and communications
23 expertise to the wireless industry, which includes
24 being a former member of the FCC's Public Safety
25 Wireless Advisory Committee. He has also testified

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1 before Congress on these issues, and we're glad to
2 have him here today.

3 MR. AMAROSA: Thank you and good morning
4 to everyone. I've been asked to talk about the
5 challenges that we see that are faced in the rural
6 environment and TruePosition has been approaching this
7 with a different point of view, I think. We are
8 deploying on a network solutions right now, TDOA, with
9 our ROA capability as well, and doing it with
10 nationwide carriers, and we've gained a lot of
11 information as we've done this and some of those
12 nationwide deployments have also addressed rural
13 areas.

14 In fact, in the technology room or exhibit
15 room as you call it, next door, we do have a live feed
16 that's coming in from the Chicago area which includes
17 a section outside of Chicago which encompasses all of
18 Schaumburg, which is in a lot of cases part of that is
19 a suburban area, but a lot of it is also very rural
20 and some farm area is there. It's a GSM network and
21 it's doing quite well, and you can go in there and see
22 actually how it works. But we have looked and done a
23 lot in these areas, and done a lot of mapping and
24 prediction with our modeling and we found some things
25 that I think I'd like to share with you this morning,

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1 some observations that we've seen.

2 The accuracy of the location which we've
3 talked about a lot is really -- is dependent upon
4 many, many different variables that exist, the cell
5 siting, the spacing, the distancing between the cell
6 sites, the geographic distribution and the orientation
7 of where these cell sites are also play a major role
8 in how we are able to determine accuracy, the RF
9 propagation, terrain is a major, major factor and then
10 any multi-path issues that may exist, and you've heard
11 our folks from Tennessee talk about the mountain in
12 the middle of the state which can dramatically affect
13 it, and the mobile unit's power in and of itself, the
14 transmit capability has presented a major challenge in
15 reaching accuracy requirements that the FCC set forth.

16 What we found is that where those cell
17 sites are separated by less than ten miles, the
18 network-based TDOA solutions generally meet the FCC
19 requirements. Where there are greater than the 10
20 miles, then you start to get into some issues, and
21 they often can meet it, and then you've got to use
22 things that we've called supplemental technologies.
23 You know the string of pearls issues that George
24 talked about earlier that don't exist in total, you
25 know, actuality, they're out there and in a lot of

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1 cases the angle of arrival, which is the antenna ray
2 is very effective at doing that, in some cases
3 recommendations have to be made for supplemental
4 sites, and in some cases where you're going to have
5 the one cell site situations, you're not going to be
6 able to meet that at all.

7 How do you address that from a financial
8 point of view? You know, you've got fewer cell sites
9 in the urban areas to make location calculations which
10 is a major issue, and I think you've heard a lot about
11 that. The added expenses that are associated with
12 supplemental technologies, especially where there's
13 poor cell site density or there's geographic issues
14 that have to be addressed, and the low volume
15 purchases.

16 What we've recommended in some of our
17 cases when we've talked to some of the rural carriers,
18 is a couple of things. The ability to form a
19 cooperative for the purpose of cheating some economics
20 of scale which can be associated with these volume
21 purchases and with extensive deployments that you can
22 do in adjacent areas and in the same areas.

23 There's a common network that can be
24 shared as well, which we've offered in a couple of
25 locations as possible solutions. Again, the cost

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1 recovery which I think we've heard a lot about over
2 the last day or so, some 40 states have it. How
3 extensive is it? Art talked to you about how his is
4 only based upon certain reimbursement criteria, and it
5 depends on the different states and you have 40
6 different solutions, and I think one of the things
7 that we learned about yesterday which we had seen was
8 that there's federal funding programs that exist,
9 especially with the United States Department of
10 Agriculture. He talked about \$650 million in granting
11 that's available through the Department of Agriculture
12 as an adjunct to the Homeland Security, so that there
13 is maybe some light at the end of the tunnel that can
14 address some of these areas.

15 Is it an easy solution? No. Is it an
16 easy way to go? No. But there is a way I think of
17 getting there, and that's some of the things that
18 we've found in some of the ways that True Position has
19 looked at this issue. I'll be happy to take any
20 questions. Yes?

21 MR. McMILLAN: John McMillan with Carolina
22 West Wireless. I just have a comment regarding the
23 funding from the Department of Agriculture. Our
24 company has just recently completed a funding loan and
25 the time frame for dealing with the Department of

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1 Agriculture really does not fit into the FCC timeline
2 and requirements. It took our company one-and-a-half
3 to two years to complete this loan process, and the
4 time required is just too long to really make it very
5 useful for these applications.

6 MR. AMAROSA: Okay. Anyone else? Thank
7 you very much.

8 COMMISSIONER ADELSTEIN: Thank you, Mike.
9 Next we have Richard Taylor. Richard is currently
10 the president of NENA and has been intimately involved
11 in these issues for more than a decade. In his day
12 job he serves as executive director of the North
13 Carolina Wireless 911 Board. He's the first person to
14 hold that post in the state. Richard is responsible
15 for assisting and overseeing the 100 PSAPs throughout
16 the state of North Carolina.

17 Prior to his role with the state, Richard
18 was communications director for the City of New Bern
19 in North Carolina, and one of his many accomplishments
20 is his work on the passage of North Carolina's
21 Wireless 911 Act back in 1998. He was involved in
22 every aspect of that bill, which includes provisions
23 guaranteeing full cost recovery for PSAPs and
24 guaranteeing that wireless carriers could recoup any
25 money spent to upgrade their systems to make them E911

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1 capable. Richard?

2 MR. TAYLOR: I'm not sure if however is
3 doing the typing if they need interpretation between
4 Mike Amarosa and myself, but good morning. Actually
5 it's afternoon now and it's kind of a scary through to
6 stand before you guys and know that I'm standing
7 between you and lunch, so I'll try to keep my remarks
8 short. One thing that I will identify myself,
9 Congressman Upton had the opportunity of pointing me
10 out yesterday and did such a great job of letting you
11 know that North Carolina yes, is one of those evil
12 people that raided the fund. But just as Paul Harvey
13 would say, let me tell you the rest of the story.

14 Unfortunately North Carolina this past
15 June, just like many states, did run into a budget
16 crunch. They've had a budget crunch for several
17 years, and unfortunately they finally looked at our
18 911 fund because that 911 fund was so huge and because
19 that 911 fund was not being used. As the Commissioner
20 pointed out, back in '97 I started working with our
21 state legislature to create the wireless 911
22 surcharge. At that time, and I'll never forget
23 standing before our legislature, and they asked me,
24 well, how are you going to do this? And I told this
25 senator who reminds me of Foghorn Leghorn as he sat

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1 back in his chair, sir, I don't know we're going to do
2 it, and he says, well, how much is it going to cost?
3 And I said, sir, I don't know how much it's going to
4 cost, and he looked at me and in some of his southern
5 vernacular which I'll not repeat this morning for this
6 crowd, he said, you have got to be either the
7 stupidest man or the bravest man or a combination of
8 both to stand before us in an election year, ask for
9 money for something that you don't know how you're
10 going to do it, and you don't know how much it's going
11 to cost. We walked away that day with a surcharge in
12 North Carolina on wireless devices at 80 cents.

13 We have full cost recovery, meaning we
14 will pay the cost to the wireless providers for the
15 delta in the handsets, we pay for your LMUs. Our
16 statute says if it's required for you to deploy Phase
17 One and Phase Two 911 we will pay for that in North
18 Carolina. After the midnight raid, if you will, this
19 past June, we were quickly called into action with my
20 friends at NENA and we were able to get a technical
21 corrections bill instituted during that week and we
22 are proud to say that not one PSAP in North Carolina
23 has lost one penny of that money, not one carrier has
24 had one invoice not paid and will not go unpaid. So
25 everyone will get their money.

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1 But we do have a large fund, and the
2 reason that fund is so large, as I mentioned earlier,
3 is because it's not being used. That creates a great
4 challenge for us from the state perspective. We've
5 had that fund now for five years, and we are still
6 trying to get carriers to deploy. Gregg C. John from
7 Carolina West Wireless here, I must say Carolina West
8 Wireless was our first carrier to be 100 percent
9 deployed in every county that is in his service area
10 in North Carolina with Phase One. They didn't stop
11 and ask questions. They just said, what do we need to
12 do and they went out and did it. They're working on
13 Phase Two right now and I applaud companies like
14 John's.

15 But in my position as the state
16 coordinator I've also had to work with other wireless
17 carriers. Another carrier that comes to mind was real
18 interesting is they worked on their Phase One, and we
19 were having our Phase Two meeting and they had a great
20 timeline laid out, and I was getting excited. I mean,
21 I was just overjoyed. Here was a wireless carrier, a
22 rural carrier, that was going to do Phase Two, and
23 after he got through with his presentation that within
24 six months we would have Phase Two from that carrier,
25 I asked the stupidest question, and I still kick

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1 myself for asking, and I said, what about your waiver?

2 And he said, can we get waivers? Today he has still
3 not deployed Phase Two in North Carolina.

4 But then I have other rural carriers that,
5 and I'm not picking on rural carriers, I'm just trying
6 to relay our experiences. This past year I called up
7 our contact for that company and I said, you know,
8 we've got Phase One requests now that are over two
9 years old you have yet to deploy, and he said, oh, I'm
10 sorry, we meant to tell you, our company decided not
11 to participate. What an education issue for wireless
12 carriers as well as for our PSAPs.

13 So having this fund available has created
14 a lot of challenges. We're willing to work with our
15 carriers. We know it's hard. We know it's difficult,
16 but one of the things that North Carolina is very
17 proud of is we've got some great legislation. We are
18 here to work with you. We are here to cover your
19 costs. We do not expect anybody to do Phase One or
20 Phase Two at a loss. It is for the public good and
21 we're willing to pay that, and I know there's other
22 states out there who feel the same way. Cost recovery
23 is a big issue. It's not just a little issue here and
24 there, and it's one of those things that we do need to
25 address from a national perspective.

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1 Real quickly I'll mention, I said
2 something about training. Another big issue that we
3 have run into, not with carriers, but with PSAPs, and
4 it's not just with PSAP managers. We heard it
5 yesterday, and we've heard it this morning already.
6 Those telecommunicators, the men and the women who are
7 sitting there actually answering that call, they have
8 a fear factor of wireless 911. In fact, I've had many
9 tell me, I wish they had never heard of it. But we
10 have figured out that that fear factor can be
11 eliminated if we go out, reach those telecommunicators
12 and educate them, what is wireless Phase One, Phase
13 Two. What is all this data that you have on the
14 screen? I'm proud to say in North Carolina we
15 started a program this past August. We are going to
16 every single PSAP, all 125 primary PSAPs in North
17 Carolina, and we are having classes for every single
18 telecommunicator, a six-hour class, explaining to them
19 what is 911 wireless Phase One, wireless Phase Two,
20 what does the data mean on this screen, what does
21 wireless 911 mean to you as a call taker, as a
22 dispatcher, as an individual working in public safety?

23 So education is a big issue, money is a
24 big issue, and we're here to work with you and we
25 understand the situations, but we're here to work with

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1 you and make it work for all of us. Thank you. I will
2 entertain any questions or I will entertain.

3 MS. BARTON: I'm Jeannie Barton from the
4 FCC. My question for you is, if you've got full cost
5 recovery, if you're educating your PSAPs, what do you
6 think the problem is?

7 MR. TAYLOR: Jeannie, we keep asking that
8 very same question. Again, it's like the one carrier
9 that said he opted not to participate. You know,
10 we're having a hard time understanding why we've done
11 all the right things, and we are still not fully
12 deployed. We look at Phase One, and I measure Phase
13 One a little differently in our state. I look at
14 every single carrier and every single county. I just
15 don't say if we've got one carrier deployed, does that
16 count as 100 percent because he may have carrier B and
17 she may have carrier A, and how is that fair to say
18 100 percent? So we're looking -- right now we have
19 about 80 percent deployment of just Phase One. We
20 still have counties that do not have Phase One because
21 of LEC issues, and we're continuing to work with LECs.

22 We're doing everything we possibly can and
23 we're still throwing our hands up saying, gosh, we're
24 giving the money, we're giving you this, we're giving
25 you that, why are we not getting a response? We have

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1 that very same question. I would love to find some
2 answers. That's one of the reasons I'm here yesterday
3 and today is to get answers.

4 COMMISSIONER ADELSTEIN: Thank you very
5 much. I would send you to lunch, but I think there's
6 somebody else coming. Remind me to think twice about
7 proving any waivers in North Carolina. You know,
8 next, we talked about mana from heaven from the RUS,
9 and we brought Ed Cameron here before us today so we
10 could tell you about what they have to offer. Ed
11 Cameron is with the RUS. He's the director of the
12 Rural Utility Services advanced services division.
13 This division is responsible for the agency's telecom
14 universal service activities and other aspects of it.

15 Most recently, he authored "USDA'S Comments to the
16 FCC and the States on Universal Service", and other
17 issues of important to rural telecom customers. He
18 has been with RUS for a long time. He represents RUS
19 on the telecom program on the network subcommittee on
20 telecommunications and he's been with the agency for
21 33 years, which includes six years as a telephone
22 field engineer in Louisiana, Arkansas and Texas. So
23 Ed, thanks for being with us.

24 MR. CAMERON: I'm the guy that's probably
25 responsible for those two-year delays in getting

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1 funding out, and I just want to stand up here and take
2 responsibility. We just began to finance rural
3 cellular communication systems just about two-and-a-
4 half years ago. We put out a new regulation. It was
5 a considerable revision of our old regulations which
6 kept us pretty much financing only wire line
7 facilities, and we were trying to evolve, and so I
8 believe since we changed the rules, we've made about
9 15 loans to rural cellular PCS providers.

10 The biggest problem we had, we have a
11 statutory prohibition against lending for facilities
12 that duplicate the facilities of others. That is the
13 big problem with our lending for cellular facilities
14 because this is a competitive industry. So we have
15 had to do a lot of very careful and creative legal
16 construction to get to the point where we can finance
17 rural cellular properties, and I would be the first to
18 say that the first few loans that came in took forever
19 for us to work our way through, and more recently we
20 have been moving the cellular loans faster, we've
21 looked at a couple in the last maybe within the last
22 three months and I think they hadn't been in house too
23 long when they got to us. But I want to put some
24 facts in front of you and then let you go to lunch.

25 I don't want to read the slides, but I'm

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1 going to mention to you that the applications we've
2 been looking at have been very difficult. Not all of
3 them, just some of them. The people that come to us
4 for financing are probably the smaller companies that
5 have had some of the difficulties that I list here.
6 So this is not probably a cross-section of the
7 problems.

8 Many of the applicants have been vendor-
9 financed and this has given, this financing gave a lot
10 of companies a good chance to get started, but the
11 vendors were very optimistic, and that financing is
12 often not renewable, you can't get more money from
13 those guys because in some cases they're not
14 especially strong right now either.

15 The revenue -- the growth picture. I'll
16 go into the growth picture a little bit. The growth
17 picture we see represents fairly flat growth and that
18 hurts these loan applications. The network elements
19 that people are proposing are not going to improve the
20 growth picture much. They're going to maybe their
21 network evolution, their coverage extension which
22 means building on down the road. You've already
23 covered the town, you've already covered where the
24 most people live, and where they spend most of their
25 time, so you're building on down the road. You're not

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1 really going to pick up a lot of new customers as a
2 result of ths investment.

3 Feature enhancements. We find that small
4 rural companies are competing with carriers that can
5 provide larger calling areas for the same rates or
6 lower rates, and small companies don't have the
7 advantage of very much cost averaging, so that's a
8 burden.

9 Financing E911 facilities, we can finance
10 anything the borrower is willing to own, so we can't
11 finance handsets, and as you evolve to more expensive
12 handset technology, then you're going to have a higher
13 percentage of your facility that we can't finance. We
14 can't let these companies go out of business, because
15 all the carriers provide services through roaming over
16 these cell sites, and over the cell sites and over the
17 cell sites that we are building with the new loans.

18 So I get to the bottom line. Where is
19 universal service support? We have carriers, every
20 day, every few days, we see another carrier somewhere
21 in the country, a rural carrier that's been declared
22 an eligible telecommunications carrier by often the
23 FCC, and those carriers are going to receive much
24 needed support to serve some very high cost areas.
25 But the system is flawed. The per customer support is

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1 based on the wire line carrier's cost per customer.
2 So the key connection is not there between incentive
3 to invest and support received, and so my last slide
4 is a rerun of our January 4, '02 comment to the FCC,
5 it's time to separate these systems. It's time to
6 base the support on the wireless carrier's cost and
7 give wireless carriers incentive to invest. That's
8 it. Thank you.

9 COMMISSIONER ADELSTEIN: Well thanks a
10 lot. We've heard some real challenges facing rural
11 America and we've heard about some real solutions, and
12 I think getting this done, and getting it done right
13 isn't a choice though, it's a necessity, and it's a
14 matter of life and death, so I really appreciate all
15 of you taking the time out of your busy schedules to
16 be with us here and to share so many insights, so much
17 good input. With that, I'll turn this over to our own
18 Lauren Patrich. She'll have some announcements and
19 tell us about where to go for lunch, because you don't
20 need GPS to find lunch, you just need Lauren.

21 MS. PATRICH: I also want to make sure
22 that people know that we've brought down a couple of
23 boxes of the competition report that was released
24 recently on CMRS services. They're in the back, the
25 blue, the bright turquoise blue publication on the

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1 back table there. Feel free to take one.

2 I want to remind everyone that there are
3 technology demonstrations that are a prelude to our
4 panel later this afternoon on the future of public
5 safety communications and emergency response in
6 particular in the next ten years. There is a sign,
7 it's right out, sort of right past the door on this
8 side, just down the hallway, a few steps away, so
9 please go take a look, and if any of the designee from
10 a governor or a tribe did not receive a list of their
11 PSAPs in a manila folder when they checked in
12 yesterday, please let me or one of the other FCC staff
13 know and we'll connect you with that.

14 Then, obviously, everyone who was here
15 yesterday knows that we have two cafeterias on the
16 courtyard level, which is the CY level in the
17 elevator. You can get there from either of the
18 elevator bays, but if you have a red visitor badge
19 like Ernie has right there with the V, you're going to
20 have give it to the security guard and then you'll be
21 able to reclaim it when you come back in. With that,
22 we'll see you at 2:15 to talk about NRIC VII.

23 (Whereupon the foregoing matter went off the
24 record at 12:58 p.m. and went back on the record
25 at 2:17 p.m.)

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1 MODERATOR GOLDTHORP: Hello and welcome
2 back. Hope you enjoyed your lunch. If you're just
3 joining us now, welcome to this afternoon's session on
4 technical issues surrounding E911. I'm Jeff Goldthorp
5 with the Office of Engineering and Technology here at
6 the FCC, and today we will be talking about a number
7 of the technical issues that you may have heard a
8 little bit about over the last day or so, and we'll go
9 into those in some more detail.

10 A lot of you have probably already heard
11 that we're planning on rechartering the Network
12 Reliability and Interoperability Council this January.

13 One of the focus areas of the new charter will be
14 E911 systems engineering, and specifically, the
15 technical issue, the systems engineering issues that
16 were revealed in Dale Hatfield's report. We learned a
17 lot from that report and we want to pursue those ideas
18 further in the NRIC as it's known, and we'll have a
19 speaker, we'll hear a talk today to give us an update
20 on the charter, where we are on the charter, for NRIC
21 VII. It's the seventh NRIC.

22 Another of the issues that I think is
23 probably on a lot of your minds is methods for
24 determining the accuracy of E911 location systems, and
25 I know there has been a lot of activity in the

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1 industry on that, in particular in ESIF, and we'll
2 have a speaker this afternoon covering that issue as
3 well, covering those issues and where the ESIF is in
4 their process. So, each of the speakers will have
5 about 20 minutes of prepared remarks, and then we'll
6 have ten minutes after each for questions, but let me
7 first introduce John Healy.

8 John Healy is a telecommunications systems
9 specialist here at the FCC where he works on
10 reliability issues in connection with E911 and SS7.
11 Before that, he was chief scientist of network
12 reliability at Telcordia Technologies, and today he is
13 here today to give us an update on where we are with
14 the NRIC VII charter. John?

15 MR. HEALY: Thank you, Jeff. Again, I'm
16 going to be talking about the Network Reliability and
17 Interoperability Committee, our Council, and it's the
18 letters we use for our NRIC and what NRIC is a federal
19 advisory committee that is chartered by the FCC and
20 what I'm going to be doing to day is providing you
21 first a little bit of background on why we're
22 rechartering the NRIC with this particular focus. I'm
23 also going to spend a little bit of time spending some
24 on background on what NRIC is and what it has bee
25 doing and then I'm going to close with a number of the

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1 issues that we think should be addressed by the next
2 NRIC or NRIC VII.

3 As Jeff said, there were a number of
4 conclusions from the Hatfield Report and one of the
5 major conclusions was that the E911 network is kind of
6 a kluge. In many ways it's kind of a magnificent
7 kluge, it's kind of ingenious, but it still is a
8 kluge. For wireless E911 they essentially put a bunch
9 of extra equipment and a bunch of extra network
10 connections right on top of the existing wire line
11 E911 network.

12 Another conclusion of the Hatfield Report
13 was that the signaling that's used in many portions of
14 the E911 network is really kind of outdated. A lot of
15 it still uses CAMA signaling and that goes way, way,
16 way back. One of the other conclusions of the
17 Hatfield Report was that there was a lack of
18 standardized tests for the accuracy requirements that
19 the FCC had come out with, and Gustavo is going to be
20 talking a little bit about that later today.

21 Probably the major conclusion from the
22 Hatfield Report was this bottom line in red, a real
23 systems education needed to make sure that five years
24 down the road we don't want people saying the E911
25 network is the kluge of all kluges. We would like

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1 them to believe that it has actually been designed to
2 be operative in the year 2010, for example.

3 This is a diagram of the wire line E911
4 network. I'm sure all of you have seen something like
5 it. The reason why I'm show it is I just want to
6 stress that it really -- even this network is a little
7 bit of a kluge. When you make a 911 call, the call
8 goes to an end office, then it's routed to an E911
9 tandem. The E911 tandem then has to decide which PSAP
10 to send it to. Based on the calling number, it
11 searches a database, the selective routing database,
12 and it may go down to the ALI database to two
13 depending on the structure of the network, and it
14 picks the appropriate PSAP. Then the PSAP has to
15 query the ALI databases directly and get the location
16 information.

17 You know, if this was a -- you know, the
18 way most of us would think a network like this would
19 be designed is you just pass all the information
20 directly from one link from the E911 tandem to the
21 PSAP, not to have to have two separate links for an
22 E911 call to actually be processed correctly.

23 Well, with wireless E911, and by the way,
24 this is just kind of a general schematic of what
25 happens, there's -- it starts even looking more and

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1 more like a kluge, and so what happens here is that
2 when a wireless customer makes a phone call, it goes
3 through a cell tower, which I have not depicted here,
4 and the it eventually goes to a mobile switching
5 center, an MSC. All kind of things then happen.

6 In the non-call associated routing or
7 signaling, I'm sorry, or an NCAS system, what happens
8 is they send an ESRD, an emergency service routing
9 digit, down through the SS7 network to the mobile
10 positioning center. What's interesting about that
11 here is that all that -- that particular thing
12 identifies the sector, or the cell sector, for the
13 particular phone call, but the location information,
14 of course, is not known at this point in time.

15 What then happens is the MPC sends an
16 emergency service routing key back up to the mobile
17 switching center, and that will allow the E911 tandem
18 to identify which PSAP to send the call to, because
19 the ESRK is then forwarded to the E911 tandem, and
20 then the SRDB database is searched and the ESRK is
21 forwarded to the appropriate PSAP. But the PSAP at
22 this point in time doesn't have the calling number,
23 nor does it have anything related to the location of
24 the call.

25 Phase One information is passed usually

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1 immediately from the MPC to the ALI database. It
2 passes the location, kind of a general idea of the
3 location information, and then it also passes the
4 calling number. So you see that the information going
5 to the PSAP follows a relatively convoluted route.
6 It's actually kind of an ingenious route, but it is a
7 relatively convoluted route.

8 The MPC, to get the Phase Two information,
9 has to send a query to the PDE, the position
10 determining equipment, which then sends messages
11 through the mobile switching center up back to the
12 telephone, the cell phone, to get sometimes the GPS
13 information, sometimes it's other types of
14 information, triangulation information. The
15 information then goes back to the PDE which determines
16 the latitude and longitude of the call, which is then
17 passed back to the MPC, then it's passed in the second
18 database dip to the ALI database and sent to the PSAP.

19 So the whole -- to complete a E911
20 wireless call you can see that there's almost two
21 major circles in the call path, and obviously when you
22 have circles in call paths it -- most people would
23 classify that as not necessarily the most optimal way
24 of sending traffic across.

25 Okay. So let me move on to the second

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1 part of what I was going talk about, is what is the
2 Network Reliability and Interoperability Council?
3 Well, as I said before, it's federal advisory
4 committee. What makes this one unique is it's
5 composed of high level executives in the major
6 companies involved. For example, the chairman of the
7 current NRIC, NRIC VI, is Dick Notebaert who is pretty
8 well known guy at Qwest. Also on the committee are
9 Ivan Seidenberg, Ross Ireland, very important people
10 in the various communication carriers.

11 The original NRIC was chartered in 1992,
12 and the reason why it was chartered was because of
13 some major signaling outages. I don't know if you
14 remember, but back in 1991, there was some signaling
15 system seven outages that took down all of Washington,
16 D.C. Every phone call in Washington D.C. was
17 essentially stopped for six hours during the middle of
18 the day, and Congress wasn't too thrilled about it,
19 and they demanded that the FCC do something about it,
20 so the FCC chartered the Network Reliability Council
21 to investigate these kinds of major network problems.

22 So it was originally chartered in 1992. It's been
23 subsequently rechartered five times, and the next one
24 we are in the process of chartering, so it will be the
25 seventh version of it. That's why we call it NRIC

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1 VII.

2 Now, the major output of NRIC is a set of
3 best practices which we hope the industries, and they
4 generally do, adopt these best practices, and these
5 best practices are aimed at promoting reliability and
6 improving the reliability and interoperability of
7 various telecommunications networks.

8 Now there is a relationship between NRIC
9 and emergency services. NRIC I, or NRC -- by the way,
10 the first Network Reliability and Interoperability
11 Council didn't have the I in it, it was just the
12 Network Reliability Council, they added the
13 interoperability when the focus became more on
14 interoperability in some of the later councils. The
15 first Network Reliability and Interoperability Council
16 had a focus team which concentrated on E911, and a
17 number of the best practices that are in place in the
18 wire line industry actually came about through the
19 Network Reliability and Interoperability Council.

20 One of their recommendations was to have a
21 paired ALI database. Another one of their
22 recommendations which is kind of a two-faced sword,
23 was to not migrate to SS7, and that may seem like an
24 odd recommendation to stay with an antiquated
25 signaling system, but if you think about it, when the

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1 network reliability council was first started, they
2 started in the wake of a couple of major SS7 outages,
3 so they felt that they didn't want to move emergency
4 services E911 to something that was incredibly
5 unreliable, and that's what -- that was the impression
6 that everybody had about SS& back in 1992. So that's
7 why that recommendation came into place, and I think
8 we are the beneficiaries of that recommendation even
9 now, unfortunately.

10 NRC II also had a focus team that was
11 aimed at E911, and the last Network Reliability and
12 Interoperability Council, NRIC VI, had a public safety
13 team, and most of its recommendations were aimed at
14 public safety announcements, making sure that there
15 was emergency notification systems and things of that
16 type.

17 Well, what are some of the major goals
18 that we have for NRIC VII with respect to emergency
19 services? Well, we want the near term E911 problems
20 identified and addressed. By the way, a number of
21 these are being currently addressed by ESIF and NINA
22 and we're working together with them to make sure that
23 we don't have a huge amount of overlap. Let's put it
24 that way. In fact, many of the people that we've been
25 talking about in trying to set up this charter have

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1 been members of ESIF and NINA. We also want to insure
2 that E911 and the emergency services meet our needs
3 five years from now. So let's focus.

4 This is something that's actually new for
5 the Network Reliability Council. We typically don't
6 do this but we believe for emergency services it's
7 going to be extremely important to have a long-term
8 focus.

9 The third thing is, we really want to make
10 sure we get input from all the major stakeholders, and
11 we want to make sure that all the stakeholders help us
12 develop both best practices and recommendations that
13 we can move forward with.

14 The focus areas that we are currently
15 envisioning, and I'm going to be talking about each
16 one of these in much more detail in a few seconds.
17 For emergency services we're going to -- we're
18 planning on having a team that addresses near term
19 E911 issues, one that addresses more long-term E911
20 architecture issues, one that evaluates the best
21 practices that are currently in place, and there's - I
22 think there's 36 of them that are related to emergency
23 services. We're also going to look at emergency
24 services for things outside of E911. So, the
25 communication between like PSAPs and emergency service

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1 personnel. There's going to be other focus areas for
2 the Network Reliability and Interoperability Council
3 and we're not -- we haven't completely decided what
4 they are going to be, but we believe there will
5 probably be a team addressing Homeland Security,
6 probably one broadband access, and maybe one on
7 reliability.

8 As I said before, setting up NRIC, we
9 certainly don't want to set it up in a vacuum. We
10 want to make sure that we use whatever teams are in
11 place and use the expertise of those groups as much as
12 possible. One group that we've been interfacing with
13 a lot is the Emergency Service and Information Forum,
14 ESIF, and I think Jim Nixon talked about it yesterday,
15 and there's been numerous representatives from ESIF
16 giving short presentations here.

17 Also, we have to interface with NENA and
18 in fact, we've been working with Roger Hixon quite a
19 bit actually on what NENA has been doing, particularly
20 in the long term. We plan on interfacing, of course,
21 with the public safety community, and one other person
22 that we would like to of course, interface with, is
23 Dale Hatfield and we've been on several conference
24 calls with Dale to make sure that NRIC actually will
25 provide the vision that he provided in his report. We

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1 actually may have that come to fruition.

2 So some of the stakeholder groups, and we
3 purposely put the first one on top, the general
4 public. Often, on a lot of these committees, and a
5 lot of these groups, you have carriers, you have
6 PSAPs, but you don't necessarily have anybody
7 representing the interests of the general public, and
8 we're going to try to make sure we get various
9 consumer affairs groups, the disability community, and
10 a few other groups, involved to actually do have
11 representation from the general public.

12 The communication carriers, of course, the
13 wire line carriers, the wireless carriers, but we're
14 also going to try to get some ISPs involved, because
15 we believe that in the future, there's a very good
16 chance that voice-over IP or the ISPs are going to be
17 the carrier of a lot of the E911 traffic. We, of
18 course, have to have PSAPs involved, emergency
19 services personnel, and of course, everybody's
20 favorite, government agencies, both at the federal,
21 state and local level.

22 So let me start talking about some of the
23 near-term, long-term and other types of issues that
24 we've been wrestling with. The list, by the way, is
25 not complete, it's not in concrete right now. These

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1 are just some of the things that we've been wrestling
2 with, and what we think that currently NRIC ought to
3 be looking at.

4 The first two items here are related to
5 consistency. One of them has to do with consistent
6 timer thresholds, the other one is consistent format
7 for information passed from the PSAP during Phase One
8 and Phase II. I was just recently at a PSAP in
9 northern Virginia, and the location information, they
10 were Phase Two compatible, and the location
11 information for or the address for a particular
12 person, came up 445 Wilson Blvd. Well, what so
13 happened was, the correct address was 1445 Wilson
14 Blvd. Because of the format of how the information
15 was transmitted to them, the one was truncated and was
16 put someplace else, and you kind of sit there and say,
17 my God, if that happens, the person could be sent to
18 an incredibly wrong location. So -- and that's just --
19 -- that's actually kind of a minor problem, but the
20 information format is really quite varied in what's
21 being sent to various PSAPs.

22 The third issue is it has to do with
23 evaluating the concentration of information in some of
24 these databases. Some ALI databases are incredibly
25 huge. BellSouth has two ALI databases for their

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1 entire region. They have millions, and millions, and
2 millions of records. The question is, should some of
3 those kinds of databases, some of those database
4 accesses be a little bit more distributed than they
5 even are currently.

6 The next item has to do with test
7 standards again for accuracy requirements, and I don't
8 think that issue is going to go away even when ESIF
9 provides their report. I think there's going to be
10 continued discussions on that issue, so that's why
11 we've included it here.

12 The final issue that I've listed here is
13 the information that is sent to a caller when a
14 network element fails. For example, let's assume the
15 E911 tandem fails, and there is no backup E911 tandem.

16 In some parts of the country, the customer actually
17 gets a reorder, and if you think about that, that
18 person will never be able to complete that E911 call
19 if he dials E911, and to get a reorder or a fast busy
20 seems to be a kind of a scary message to send to a
21 caller. Maybe he should be getting an announcement or
22 something different than a fast busy.

23 Some of the long-term issues, and some of
24 these aren't surprises. One of them is leveraging IP
25 technology. Everybody wants to leverage IP, and

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1 there's a good chance that if we leverage IP we might
2 be able to get different kinds of access technologies
3 to work with E911 calls.

4 A second items has to do with overflow
5 traffic from local PSAPs. We're trying to figure out
6 what to do with that. Is there a national solution
7 for something like this? Is it possible to have a
8 national or regional PSAPs to handle longer-term
9 overflow traffic. There are some advantages there
10 might be to have a center for which PSAPs could send
11 information to, so for Homeland Security issues or for
12 terrorist attacks or whatever. So, this issue is
13 really what should we do with overflow traffic and
14 whether some form of a national or regional PSAP might
15 be an applicable solution to that particular problem.

16 The next item has to do with recommending
17 methods for doing signaling. Should we bite the
18 bullet and get rid of CAMA? So should we have some
19 sort of national standards or some sort of recommended
20 standards for the signaling to access various PSAPs?

21 The final item is related to the overall
22 accessibility of different types or ways of passing
23 information to PSAPs. Shouldn't PSAPs be able to
24 accept voice-over IP calls? Shouldn't they be able to
25 accept pictures? Let's assume you're at an accident

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1 and you take a picture of somebody or some thing,
2 wouldn't that be wonderful information to be able to
3 pass to the emergency services personnel? At this
4 point in time, of course, that's pie in the sky
5 thinking, but I think five years down the road if we
6 can't address that I think we're going to be in real
7 trouble.

8 There's two more committees, and I will be
9 going through these very quickly. There's one about
10 evaluating existing best practices, so one of the
11 things that we're going to want to do is evaluate the
12 effectiveness of current best practices, look at some
13 of the outages. We currently collect outage
14 information and what we would like to do is use that
15 to come up with ways to improve E911 networks.
16 Finally, we're going to try to tighten the language of
17 some of the best practices.

18 One other area that I would like to
19 mention is that the E911 really just -- I'm sorry.
20 Emergency services doesn't just stop with E911 and
21 getting information to the PSAP. If you can't get
22 that appropriate information from the PSAP to the
23 emergency service personnel, it really may not be that
24 valuable, let's put it that way.

25 So one thing that we're looking is having

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1 some parallel kinds of efforts in trying to improve
2 the technology going from the PSAP also to the
3 emergency services personnel, and here's a number of
4 the items that we have listed, using IP technology,
5 developing architectures. The third bullet is to send
6 text and pictures to emergency service personnel, and
7 the last item has to do with, you know, what is the
8 role of E911 in major disasters and terrorist attacks.

9 Okay. I'm going to close with what are
10 some of the NRIC milestones. The milestones are first
11 we plan on chartering the NRIC VII in January. We
12 hope to have the first official meeting in March of
13 2004. We have quarterly meetings after that and then
14 by December 5th, or December in 2005, we will have the
15 final report of NRIC VII. Basically we hope that NRIC
16 will provide direction and support for emergency
17 services. We really hope that five years from now
18 we're going to expect a lot from E911. Hopefully it
19 will meet the needs of the industries and the general
20 public. Thank you. I'm sorry, do you have questions?

21 Yes?

22 UNIDENTIFIED SPEAKER: (Unmiked) John
23 (inaudible) from NENA, and I want to tell you
24 something, or reiterate something, and that is, I
25 don't think anyone is going to debate the need and the

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1 urgency or priority on many of the items that you've
2 identified. There's an awful lot of work in these
3 areas that's already under way in a variety of
4 different forums, so it's going to be critically
5 important, I think, that you get the right people at
6 the table, because what you won't want to do is
7 reinvent a lot of that stuff.

8 MR. HEALY: I couldn't agree with you
9 more. Yes?

10 MR. HALL: I'm Ed Hall, and I'm with ATIS,
11 and along with Jim, I'm the co-convenor, I represent
12 ATIS on ESIF, and along the same lines that Jim just
13 expressed, how -- I'm very glad to see that ESIF is
14 going to be involved in this effort. If an issue is
15 being worked, such as your messaging to PSAPs is an
16 issue that has already been brought into ESIF, if that
17 comes up as one of your short-term or near-term
18 objectives, how do we deal with it in the NRIC focus
19 group if someone else is already working it?

20 MR. HEALY: Well, obviously one of the
21 things that we will try to do is make sure that it's
22 addressed in the most appropriate forum. Generally
23 what's happened with a lot of the ATIS groups is a lot
24 of the same people have been involved in both like
25 ESIF and in like would be with the network reliability

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1 council, for example, so there's a reasonably good
2 chance that the -- by having -- NRIC will be able to
3 kind of reinforce the solution that ESIF may come up
4 with, may be able to advertise it better, may be able
5 to get more long-term support for it, more high level
6 support than ESIF might be able to get because, as you
7 know, the Network Reliability and Interoperability
8 Council has very high level executives. It's more of
9 a high-level group as opposed to ESIF. ESIF tends to
10 be more of a nuts and bolts group, and I think working
11 together will actually make some of these things
12 disappear. I honestly don't think that's going to be
13 a problem.

14 MR. HALL: Okay. Thank you. Just one
15 follow-up on that, is it foreseeable to believe that
16 if an issue does come up and the best place to handle
17 it would be in ESIF or NENA technical committee, that
18 it would be directed -- that work would be directed to
19 ESIF or NENA?

20 MR. HALL: Yes.

21 UNIDENTIFIED SPEAKER: Hi. I know a
22 resident died in Chicago high rise in a fire due to
23 smoke inhalation. It took the rescuers to get there
24 about 90 minutes to locate the 911 callers. They were
25 trapped in a staircase and they looked -- I guess the

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1 caller said that they are in a staircase, but it was
2 the wrong one, so it took about 90 minutes. Now, what
3 do we do about high rises and difficult areas, you
4 know, open areas, where none of the existing 911
5 location techniques are working? I mean, do you do
6 anything? Has anybody been giving any thought to
7 that?

8 MR. HEALY: I don't -- Gustavo might have
9 an answer to that. At this point in time, NRIC hasn't
10 convened, so obviously NRIC hasn't done anything on
11 that particular issue. I do know that the -- there's
12 been a -- the issue of locating people in high rise
13 buildings, and in buildings that have PBXs and stuff
14 is a long-term problems with E911 and I know that
15 there's lots of people working on that kind of an
16 issue, but at this point in time, maybe NRIC, maybe
17 one of the NRIC committees, ought to look at that
18 issue. I'm sorry. Did -- she had a question?

19 MS. PARTIKA: Do you have time for one
20 more question?

21 MODERATOR GOLDTHORP: Yes.

22 MS. PARTIKA: It's a quick one. I was --
23 This is Janice Partika of Technicom, and I was just
24 wondering if there is a mechanism for bringing issues
25 to the attention of NRIC for consideration as one of

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1 your initiatives and how one goes about that?

2 MR. HEALY: At this point in time call me.

3 No, I'm not kidding. At this point in time -- once
4 it convenes there will be subcommittees and sub-teams
5 and stuff, and there will be appropriate contact
6 person for it. There's an NRIC Web site, NRIC.org,
7 and once the charter comes out, it will go there and
8 there will be a capability of sending issues and that
9 kind of, you know, through the Web site, but at this
10 point --

11 MS. PARTIKA: Are these meetings public?

12 MR. HEALY: -- in time, for NRIC VII, the
13 best thing to do is probably send it directly to a few
14 of us in the FCC because we're just in the process of
15 chartering it.

16 MS. PARTIKA: Got you, and the meetings
17 are public?

18 MR. HEALY: Yes.

19 MS. PARTIKA: Okay.

20 MODERATOR GOLDTHORP: Okay. Thank you,
21 John. I'd like to hold that question until the end so
22 that we can stick to the schedule. Thank you. Next
23 we're going to be getting into an issue that is also
24 I think, going to be of interest to you, having to do
25 with determining location accuracy and speaking on

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1 that topic, and representing ESIF, is Gustavo Pavon.

2 Gustavo has 15 years of experience as an
3 independent wireless telecommunications consultant.
4 He currently represents TruePosition at various
5 standardization bodies. He has previously worked at
6 Eriksson where he was TDMA infrastructure marketing
7 manager for Latin America, and as I said, he's going
8 to be giving us an update on the work in ESIF -- I
9 have Study Group F, is that --

10 MR. PAVON: It's G.

11 MODERATOR GOLDTHORP: It's G, okay. Sorry
12 about that. Study group G, which addresses testing
13 methodology. Gustavo?

14 MR. PAVON: Thank you, Jeff. Let me get
15 situated here. Today I'm honored to be here
16 representing ESIF at the emergency services
17 interconnect forum, and in particular the Study Group
18 G, which I happen to be the leader for. As you
19 probably know, ESIF is an eclectic collection of
20 public safety and wireless industry experts and I can
21 really tell you that as a subset of ESIF, Study Group
22 G also counts in its ranks some of the most qualified
23 experts in their fields, so for me it's really an
24 honor to be accepted as their leader.

25 In this slide right now, what I did is I

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1 took from the last meeting that we had, and I wrote
2 the minutes, I recorded the participation. I'm just
3 reflecting that participation here, and the purpose of
4 me doing this is to show the fact that it's really a
5 joint effort. You can see we have wireless carriers,
6 we have public safety representatives, we have
7 location technology vendors, we have test vendors, et
8 cetera, and I really believe that all the segments are
9 very well represented here.

10 Today I will be just giving a quick,
11 report of where we are, what we've done, and where
12 we're going. I can tell you that ESIF works with
13 issues being brought in front of it, usually through
14 some of its members who recognize there's a potential
15 issue or something that needs be discussed in a wide
16 audience. So there was such an issue, we numbered it
17 number 22, the title of it is, Phase Two Test
18 Methodologies, and basically the issue identifies a
19 lack of documented methodology for test compliance to
20 Phase Two requirements. All right? As a result, the
21 issue was accepted and it was recognized that this was
22 in reality a problem that needed to be discussed, so
23 Group G was then created.

24 The first full Study Group G meeting
25 happened on April 3, 2004, coincidentally here in

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1 Washington, D.C. and we focused back then in
2 establishing the mission and scope for our study
3 group, and I just extracted from our documents our
4 mission and scope here, and it reads, to provide a set
5 of minimum practical requirements that will insure
6 individual accuracy test methodologies, provide
7 consistent valid, verifiable, and reproducible results
8 in a variety of environments based on sound
9 engineering and statistical practice and the two words
10 that I want to highlight here is, number one
11 requirements, and we decided on requirements because
12 we recognize that throughout the industry there is a
13 number of methodologies already existing. We didn't
14 want to impose a specific set of methods on anyone,
15 but we wanted to provide a benchmark or a series of
16 requirements that individual methodologies should
17 really be complying to in order to satisfy, you know,
18 a certain generality for the results.

19 The second word that I want to focus on is
20 accuracy. We -- as you can see further below, we
21 define the terms accuracy, functionality, and
22 maintenance phases for the tests that could be
23 occurring in any 911 Phase Two deployment. We decided
24 to focus on accuracy, accuracy being basically the
25 activity of generating location data, usually in large

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1 volumes, depending on the variety of tests that you
2 will be doing, and in which the accuracy performance
3 of the system will be gauged and this will give
4 everyone an opportunity to evaluate the system and
5 realize if there's any problems, where the problems
6 are and give people an opportunity to correct them.

7 We also defined functionality tests as a
8 different phase that could be done either together or
9 separately, and functionality tests what it really is
10 is an end-to-end test, from the source of the location
11 information down to the recipient of that information
12 behind the PSAP screen, and there's a lot of things
13 that can happen in between. As John mentioned in his
14 diagram, the system is quite complex, so an end-to-end
15 test, which is not what we're focusing on, an end-to-
16 end test would have to verify the integrity of that
17 data, the timely deliver of that data, the routine
18 accuracy, the database integrity, all of those points
19 in between location source and location destination.

20 Finally, we also defined the term
21 maintenance test, which will happen perhaps on a
22 periodic basis based on needs, depending on what goes
23 on in the carrier network, whether more cell towers
24 are erected, frequency plans are changed, et cetera,
25 which is normal part of doing business for some of our

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1 carriers.

2 All right. Let me tell you a little bit
3 about the current status. Since we were created,
4 we've met on a very aggressive schedule. As you can
5 see, we've had a total of two face-to-face meetings,
6 full meetings. We've had eight Web meetings, or cyber
7 meetings, basically a conference call with a common
8 Web screen that everyone can look at. In addition, we
9 created teams that study group members volunteered
10 for. These teams would focus on specific sections of
11 the document we were creating, and these teams have
12 been meeting individually or, you know, on their own,
13 not under Study Group G, but as a team, they've been
14 meeting on conference call format on a number of
15 occasions each of them.

16 The process that we're following for the
17 creation of our requirements document is, I like to
18 make the analogy of putting together perhaps a body,
19 if one could do so. We start with the skeleton. What
20 we did for the skeleton we outlined the requirements
21 what we thought the final document could look like.
22 We started writing some of the headlines. Then we
23 started working on the muscle that goes between those
24 bones, that skeleton. The individual sections are put
25 together and put into the document. Finally, when you

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1 have all the muscle -- the skeleton, the muscle, then
2 you put the skin around it to make it look like a real
3 body, and that would be the final passes of the
4 document, meaning make sure that it's consistent from
5 top to bottom, that there's nothing left out, et
6 cetera.

7 Right now we've made some good progress in
8 these last few months. We actually created a baseline
9 document based on the outline that we previously
10 created. The baseline, what it does, it's a
11 receptacle or a pretty solid version of the first of
12 the sections that we've already discussed, we've
13 already moved around a little bit perhaps, that we've
14 accepted as ready for baseline. So we put it into
15 this collection of sections and eventually when we're
16 done putting sections together, this will become our
17 document.

18 As I said, we already have a few of the
19 sections in there. Some of the initial ones, like
20 introduction, definitions, some general requirements
21 that bring the reader from the generality of the
22 introduction as an intermediate step before going into
23 the hard details of the empiric and predictive models
24 that we're discussing.

25 We have a section with equipment

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1 requirements, what would be the minimum someone should
2 consider having as their arsenal of tools if you are
3 going to do some accuracy testing. We also have a
4 definition for test area. This baseline is currently
5 available from ESIF. I believe it's on the ESIF Web
6 site. If one has to look for it. I'm sure you will
7 be able to find it.

8 Now, talking about work in progress, this
9 is really the heavy weight of the document. We have a
10 couple of sections that are being developed. Number
11 one, the section with empiric testing requirements,
12 number two, the section with predictive modeling, and
13 I'll talk a little bit about each of them.

14 Empiric methods in general consists of
15 taking a number of test calls and compare those tests
16 calls, the location generated for each of those test
17 calls, with a ground truth reference, and determining
18 the area. This has to be done in significant volumes
19 so that the samples are statistically significant. We
20 will include requirements for not just stationary
21 tests such as one would do in a building for example,
22 but also dynamic tests.

23 We've learned through experience that
24 dynamic testing provides quite a bit of volume of the
25 necessary data to interpret what the system is doing,

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1 but it's also economic and it has certain operational
2 advantages, provided of course, you have the proper
3 equipment in your van so that the equipment is
4 generating its tests calls automatically without human
5 intervention. Then you can do a large volume of test
6 calls with sufficient variety, sufficient random
7 factor in terms of the speed of the moving vehicle.

8 We also have, as part of that section, we
9 will be giving some requirements on the establishment
10 of ground truth, what you need to do to insure that
11 your ground truth, your reference, is solid enough,
12 that you can rely on it, that you can compare your
13 location data against. Beyond that, we will also
14 offer some examples of how to determine the size of
15 your samples, the number of test calls for a given
16 test area, so that you have a desired --in particular,
17 we're shooting for 90 percent confidence in the
18 statistical factors.

19 We're also working on predictive modeling,
20 and let me tell you a little bit about predictive
21 modeling. Predictive modeling is there to really
22 augment the information which was developed through
23 empirical methods. It's also there to reduce reliance
24 on resource-intensive field testing, but it's not
25 there to eliminate the need for empiric testing.

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1 Predictive can fill some of the holes that perhaps
2 some empiric testing may have. Predictive can help
3 you if you have an initial deployment of E911 Phase
4 Two compliant network or handset-based solution, if
5 you do an extension, perhaps one county or something
6 that has a very similar characteristic as the
7 previously-deployed geographic area, perhaps you can
8 think about doing some predictive modeling there if
9 you have sufficient benchmark information, if your
10 benchmark is reliable, and provided, or course, you
11 calibrated that benchmark and make sure that it's
12 calibrated against, for example, seasonal variations,
13 diurnal, night and day variations, things of that
14 nature.

15 A predictive model, no one believes that
16 can be applied in a vacuum. It has to be applied with
17 a certain degree of validation. You cannot just go
18 ahead and do a predictive modeling and decide, yes,
19 this is what my system is going to do. You have to
20 validate that with empirical testing. Perhaps the
21 volume of test quotas is going to be a bit smaller
22 because you're only validating, you're not
23 establishing the baseline, or the benchmark. And
24 certainly there will have to be requirements on
25 consistency of the predicted and empiric resource. So

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1 predictive modeling is something that needs to be --
2 if someone is going to use a predictive model in
3 determining the accuracy of deployment, then there's a
4 large set of prerequisites that these methodology must
5 fulfill, and we're trying to document what they are.

6 As far as our next steps, we'll have -- we
7 still haven't started looking at it, but we'll have a
8 section on analysis and summary of results. We will,
9 of course, have to review the whole document from top
10 to bottom, insure that the sections are editorially
11 consistent, that we haven't left anything out, that
12 when we make a reference in section eight to a
13 previous section, that those references are
14 consistent, et cetera.

15 Finally, a target completion date I would
16 look at March 31st. I know I've talked about November
17 15th previously, but in realities are self-imposed
18 deadlines, and what it means is that we're really
19 moving as fast as the resources that we have in ESIF
20 Study Group G can allow. This is people that have a
21 multitude of responsibilities and among them is
22 helping us out in ESIF, so certainly we're a bit
23 resource limited, but we're nevertheless making some
24 solid progress I believe.

25 Finally, let me tell you a little bit

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1 about the challenges that we've faced during our
2 discussions, and certainly some that I anticipate we
3 will have in the future. The definition of test area,
4 that was kind of a difficult one because we -- some of
5 the members did not want to limit the test area to
6 match exactly a PSAP jurisdictional boundary. We
7 wanted to give the flexibility so that if, for
8 example, in a given metropolitan area, there is an
9 E911 Phase Two compliant deployment under more than
10 just one, and typically there will be a number of
11 PSAPs in that same metropolitan area, that whole
12 metropolitan area can be tested at one time without
13 having to do tests individually on a PSAP-by-PSAP
14 basis. So that determination took a little bit of
15 dialogue, but eventually we got there.

16 Accuracy or functionality. This, although
17 we defined it at the very initial meetings, these
18 things are still coming back at us so I believe the
19 reason for it is that there's a real need for entwined
20 validation, and I believe there are actions being
21 taken at ESIF and at NENA to make sure that such
22 validation takes place.

23 A little bit technical, but it took a
24 little bit of dialogue as well, to determine the
25 location or the position of test points for accuracy.

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1 In the end we decided that it should be any point in
2 the location network, just as long as the location
3 measurement is exactly the same as what the PSAP will
4 in the end be looking at. If there are any
5 intermediate notes that, for whatever reason,
6 transform that position data, then steps need to be
7 taken to insure that the final position is measured
8 really.

9 Predictive methods, I know that this is
10 going to be a challenging one for sure, but I believe
11 this is just because we haven't talked much about it.

12 Once we're on the same page within the study group, I
13 believe that the movement forward will be a little bit
14 easier.

15 Finally, weighting. We have it as part of
16 our outline, but we still haven't got to it, and I
17 know for a fact that this is going to be an issue also
18 that will take some dialogue before we can resolve it.

19 Finally, I want to thank you for your
20 listening, but more than that, I would like to
21 encourage not just the members here of ESIF, but all
22 those that may be watching through the Web, and
23 somehow hearing us, to -- I would like to encourage
24 them to continue their participation. Only that way
25 we can complete the document that we have in front of

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1 us. That's what I have, Jeff. Thank you. I would
2 also like to open the floor for any kind of questions,
3 please. (Question handed up to the dais). Jeff, do
4 you want to read the question?

5 MODERATOR GOLDTHORP: Yes, I'll read it.
6 Lauren's got very good handwriting. Let me do it from
7 up here. I'm not sure if that mic works.

8 Is E911 working towards allowing two-way
9 communication with text pages, Internet voice
10 override, PDA and other wireless text technologies?
11 Let's see. I think this is, are you aware of text
12 technologies are predominant in the deaf community?

13 MR. PAVON: I'm not sure that the question
14 is relevant to --

15 MODERATOR GOLDTHORP: Yes, not to yours.

16 MR. PAVON: This is probably for a
17 previous --

18 MODERATOR GOLDTHORP: John is that
19 something you want to address as far as what NRIC
20 might cover?

21 MR. HEALY: Clearly, NRIC is going to be
22 looking at voice-over IP and a number of other text
23 technologies. In fact, that's what I was referring to
24 when I indicated text on my view graph, so the answer
25 is yes, they certainly are going to look at other ways

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1 of accessing E911 through these other technologies.
2 One group that we are going to make sure that we
3 continue to dialogue with and make sure that we keep
4 involved is the different members of the disability
5 community, including the deaf community, so the answer
6 is yes.

7 MODERATOR GOLDTHORP: Okay. I think this
8 one is related -- let me mention who this is from.
9 It's from Brenda Kelly-Fry. She is a director of MD
10 Relay, and the question is, and by the way, I didn't
11 mention this in the beginning, but these are all
12 questions that we've gotten over the Web. Since
13 digital technology has not been perfected yet for use
14 by TTY users, and in parentheses she has, analog has
15 more accurate character rate, close parentheses, how
16 can they benefit from the Phase Two E911? How can
17 they be located without digital cellular with GPS?
18 Sorry? Think that's a location item? Do you want to
19 cover that, Gustavo?

20 MR. PAVON: I'll certainly address it.
21 There are new technologies surfacing that will allow
22 handicapped, deaf or otherwise-handicapped people to
23 use digital technologies. For example, GPRS and CDMA
24 2001XRTT will allow that kind of interaction, and
25 certainly those radio access methods can be located

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1 with a high degree of accuracy.

2 MODERATOR GOLDTHORP: Yeah, question from
3 the floor?

4 MR. HALL: Actually, it's not a question.
5 I might be able to help out on that TTY question.
6 Once again, I'm Ed Hall from ATIS, and I'm also the
7 chair of the industry TTY forum and I believe it was
8 Brenda from TRS, digital air interface technologies
9 today are capable of supporting TTY 45 baud, baudot,
10 and there are some issues in completing that 911 call
11 via a TTY device into a PSAP. There are some
12 interconnection issues and the TTY forum, with NENA,
13 is continuing to find -- we have a solution, we're
14 continuing to implement that solution. So, if Brenda
15 has any further questions, she can go up to the ATIS
16 Web site and look up the TTY forum, and contact me and
17 I'll be more than happy to help her. Thank you.

18 MODERATOR GOLDTHORP: Thank you, Ed. The
19 last question from the Web cast, individuals will do
20 in an emergency what they typically do in a non-
21 emergency. Deaf and hard-of-hearing people will use
22 711 as their dial tone to make daily calls. Although
23 relay outreach encourages people to call 911 directly
24 in an emergency, they will still do what they do
25 normally or what they normally do in a non-emergency

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1 situation. How can relay receive a cellular call and
2 still provide location, meaning XY coordinates, and
3 reach the most appropriate 911, 911 center rather, to
4 the site of the emergency? Anybody want to take that?

5 MR. FORSTER: Pat Forster at the Wireless
6 Bureau. We have a pending rule-making about requiring
7 TRS centers to forward the location information to a
8 PSAP for TTY callers that dial 711, so that's being
9 addressed. I forget the document number.

10 MODERATOR GOLDTHORP: Okay. I think there
11 was a question from over here for the earlier, for the
12 first speaker, and I don't know if that gentleman is
13 still here or not.

14 MR. OENNING: Bob Oenning from the State
15 of Washington, and I really encourage you to also go
16 back and look at the previous iterations of outage
17 notification that were done in the different NRICs
18 starting with one, which wasn't actually NRIC, and
19 follow that on with some recommendations toward how
20 carriers might notify PSAPs of outages with a clear
21 indication that by notifying the PSAPs in a
22 cooperative manner, then the citizens can be told what
23 to do if that outage persists over some time about
24 911. It's a piece we have never addressed, and we
25 should have a long time ago. It also takes some

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1 weight off the carrier in that if that piece of it is
2 taken care of as far as the citizen notified and they
3 have another way to handle the emergency, it is just
4 better for all of their subscribers.

5 MR. HEALY: We will take that under --
6 that's actually a very good idea.

7 MODERATOR GOLDTHORP: Okay. I think I'll
8 close the session with that. I want to thank you all
9 for your attention, for your questions, and I'd like
10 to introduce, turn the podium over to Commissioner
11 Kathleen Abernathy, who will be moderating our next
12 session this afternoon.

13 COMMISSIONER ABERNATHY: Okay, folks.
14 Stay with us a little bit longer. We're in the home
15 stretch. Welcome to the last panel of the second
16 meeting of the Commission's E911 Coordination
17 Initiative, and I've -- from talking to others, I know
18 that it's proven to be very helpful and effective
19 presentations, and I'm pleased that so many folks have
20 been willing to come in and participate and help us as
21 we tackle these very difficult and important issued
22 associated with E911 implementation. Your input is,
23 as you know, critical to the success of the program.

24 This afternoon's panel promises to take
25 the discussions a step further, which is into the

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1 future. Where do we want to be in the future? What
2 that has to do with is, we know what E911 can do
3 today. Where do we think it can go tomorrow? We
4 can't rest just on the initial implementation. We
5 have to refine the service. It has to be a vibrant
6 service that can adapt as necessary to new
7 technologies, new uses. So that means that our rules
8 have to be flexible, and they have to allow the
9 providers to delivery emergency services that are
10 flexible and are operable, effective, and efficient,
11 and recognize new technologies and new applications,
12 and to that end, we're hoping that today's panel will
13 help enlighten us on many of those questions.

14 We have two panels here at the end. We're
15 going to start the first with two speakers. The first
16 two speakers are going to focus on where do we think
17 we'll be ten years from now. How do we think these
18 services, what do we think they will look like, how do
19 we think consumers will be using them, and then that
20 will follow up with a discussion of developing
21 technologies and commercial applications that will
22 help us achieve the vision that these folks are going
23 to talk about.

24 So first I'd like to introduce our speaker
25 Mr. David Jones, the Director for Emergency Services,

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1 with Spartanburg, South Carolina. He's going to focus
2 on NENA's future path, and where they plan to go, and
3 he'll talk for about -- I've forgotten how long
4 they're giving you. I think eight minutes. We're
5 going to do some Q&A right after, then we'll move to
6 our second speaker, and then we'll bring another group
7 up.

8 MR. JONES: Well, it's obvious that they
9 saved all the cool stuff for the last, so that's the
10 reason why we're here today, and also, I have to
11 differ with the Commissioner. I was under the
12 impression, because we're last, that we had no time
13 constraints. So, excuse me, I need to tee up my 45
14 slide presentation. I'm kidding.

15 Actually, what I'm going to talk about is
16 the NENA path plan, and I think it's appropriate that
17 this discussions begins from here because as a path
18 plan it is simply a tool for guidance. I like to use
19 the analogy of a path through the woods that will get
20 you to where you need to go. Well, the Future Path
21 Plan of NENA is a tool designed to insure guidance or
22 to provide guidance to technologies, both today and
23 into the future, to insure that the 911 networks are
24 addressed in the appropriate manner.

25 The basic objective of the NENA Future

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1 Path Plan is as I quote, "Any 911 call originator,
2 voice or text", which goes back to that question a few
3 minutes ago, "must be able to access the nation's 911
4 systems and have this call delivered to the
5 appropriate PSAP with caller location identification.

6 Further, that PSAP must be able to receive, process,
7 and manage the data for appropriate emergency service
8 response". That's the basic premise and objective of
9 the NENA Future Path Plan.

10 Now, the building blocks for that
11 objective is that we maintain or improve reliability
12 and service characteristics and that we talk about the
13 age of the 911 network, that it is proven, that it is
14 reliable, and it is very dependable. That has long
15 been a building block of that, and now we are seeking
16 to maintain that, or improve it, with future
17 technology.

18 A second building block is to move the 911
19 system design toward the use of forward-looking
20 mainstream technologies and open interfaces requiring
21 fewer custom solutions. Plain and simple.

22 The third building block of the path plan
23 is it must be driven by service needs, functions and
24 features, identified with the perspective of public
25 safety and its operations.

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1 So what criteria do we use to establish
2 this path plan? What do we guide against? Again, as I
3 said, it must be reliable, it must be dependable.
4 Basic tenet. Then we move into the service parity.
5 We must have service parity for all 911 callers, and
6 by that we really mean by potential 911 callers, for
7 whatever reason. We need -- we are going to look at,
8 again, this criteria is for least complicated design.

9 A better way to describe that is maximum call and
10 data delivery with the least cost. That's a criteria,
11 and then finally, a criteria that will be compared
12 against, is a documented process, or processes, to
13 insure adequate deployment and implementation and
14 then, of course, ongoing support.

15 So what these criteria takes then, of
16 course, is the successes of the current 911 networks,
17 and applying them and advancing them for use in the
18 future against keeping the same type of emphasis on
19 reliability and dependability, but then leveraging
20 that toward the future technologies.

21 To insure or to assist in this compliance,
22 NENA is in the process of developing a compliance
23 too, the path plan compliance tool. It will become a
24 NENA standard. It will be applied towards all future
25 technologies that we're going to hear about in just

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1 the next few minutes. But essentially what it does,
2 is it compares these proposed solutions to the
3 subjective in this criteria that I've just outlined.
4 That is the compliance tool that will be used to
5 insure that the path plan and the 911 networks are
6 achieved.

7 There are some ongoing activities with
8 NENA that support the goals of the Future Path Plan
9 and its objectives and criteria. I'm going to name a
10 few. The XML standards of data handling. That work
11 is ongoing. The previous IP workgroups have all been
12 consolidated under voice-over IP, packet, technical,
13 and operational committee structures. NENA's network
14 access group is evaluating national technical options
15 for common access and call transfer. Of course, the
16 ongoing works of telematics interface options
17 continues, again being applied with this criteria in
18 mind. The NENA SWAT initiative is supporting and is
19 furthering the issue of the Future Path Plan. And
20 then as we just heard a few minutes ago from the --
21 regarding the NRIC initiative, is NENA continues to
22 apply these goals and concepts in working with the FCC
23 as we contemplate future 911 design.

24 I'm going to wrap this up by saying,
25 summarizing, why we -- why this is important for us,

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1 for all of us. This is a way to insure that the
2 effectiveness and integrity of 911 systems is
3 continued and advanced. We accomplish that by using a
4 traditional NENA method, and that is by building
5 partnerships with all of the players in this industry,
6 both the way you're accustomed to now, public safety,
7 LECs, wireless carriers, other providers, but will
8 soon be moving into a whole new world of involved
9 parties in 911 networks, and it is building upon that
10 partnership, continuing what we have, forging new
11 ones, and insuring the integrity of our networks as
12 they relate to 911. Thank you. I'll be happy to
13 answer any questions that there may be, or do you wish
14 to --

15 COMMISSIONER ABERNATHY: Why don't we
16 take them all --

17 MR. JONES: That's fine.

18 COMMISSIONER ABERNATHY: I'll now turn it
19 over to Dr. Jack Potter from ComCARE Alliance, who has
20 a vision of how he thinks all of these various users
21 will work together on a single database, and we'll let
22 him make his presentation, and then we'll take
23 questions for both Mr. Jones and Dr. Potter.

24 DR. POTTER: Thank you. Well, first of
25 all, I'd like to thank Commissioner Abernathy for

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1 having the ComCARE Alliance project presented here
2 today. As has been said, I believe that we are here
3 to present a vision of where we think the
4 communications involving 911 traffic can better
5 integrate into the continuum of public safety. We all
6 respect the 911 system for the success of the system,
7 but I see it really as a continuum in what I then do
8 later on in a system.

9 The ComCARE Alliance is an organization
10 that's been working on a future vision for at least
11 the three years that I've been involved in the project.

12 Being here at this meeting it seems like old home
13 week for the ComCARE Alliance. There are a number of
14 folks here that have been very important in developing
15 this vision and helping to bring it into a
16 demonstration model in Virginia. I won't go into all
17 the different folks that are here, but let me just
18 summarize by saying over 90 organizations are members
19 of the ComCARE Alliance, have been working on this
20 vision, have been inputting both as users of the
21 system, as vendors developing product, and as folks
22 willing to test the system.

23 A lot of people may wonder what an
24 emergency room doctor is doing here then at an FCC
25 conference on 911, and it really boils down to the

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1 information coming in through 911 affects me very
2 directly, and as we grow the information stream that
3 will be introduced in the system through
4 communications channels, it becomes all the more
5 important for the historically one or two steps
6 removed providers to move to the forefront and take
7 advantage of this information early on.

8 Interoperability is frankly a term that's
9 been thrown around very loosely for a number of years
10 now. Certainly since September of '91.
11 Interoperability is something we've known we've had a
12 problem with for decades in public safety, and it has
13 gotten a lot of attention and we appreciate the
14 attention. We want to make sure that people
15 understand that interoperability is not just
16 communication within first responders immediately on a
17 scene. Interoperability really involves all the
18 players along the chain that can advance their care
19 and their communication and their assistance to an
20 incident earlier in the game, so with that I'm going
21 to turn to our presentation.

22 The ComCARE Alliance has developed a
23 vision we refer to as the E-Safety network, and the E-
24 Safety network really underscores the fact that this
25 is a lateralizing platform where we can bring any

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1 number of agencies with responsibility and public
2 safety to the forefront, to put people in a position
3 early on to get information that will be coming
4 available in the very near future to make decisions
5 real time.

6 As this was introduced, it was introduced
7 as a technology for the next ten years, and I would
8 put to you that these are technologies really that we
9 need to be thinking about in the next two years, and
10 in fact, pieces of which are available today. So
11 looking at communications in respect to public safety,
12 I would put to you that we really need to look at the
13 best communications technologies for public safety.
14 Right now the business community in our country,
15 certainly the military, have advanced technologies.
16 They move information extremely reliably, extremely
17 securely, much faster than we are. If I go to Spain
18 and put my ATM card into a machine there, I can get
19 \$100 if I've got \$100 in my account back home, and
20 they know that. When I put my machine in it takes a
21 matter of seconds and that transaction occurs. A lot
22 of things happened when I did that.

23 Those sorts of things should be able to
24 happen when someone calls 911. We don't have that
25 technology available to most of the country right now.

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1 It's got to be fast and smart. Interoperability
2 really should be a buzz word that connects non-
3 traditional allies and agencies, and I was very
4 pleased to hear David say that. Everything that he
5 said I would echo in terms of the vision of where 911
6 needs to be.

7 In any case, safety I would put to you,
8 really is not one agency communicating in serial
9 fashion with another agency downline. Think of public
10 safety as an enterprise, much the way we look at GM
11 with all its component pieces where they today can
12 interoperate very effectively, communicating all their
13 needs for inventory, et cetera. That doesn't happen
14 in public safety. We need to think of public safety
15 as an enterprise, and as an enterprise I think we'll
16 bring all the relevant agencies together very quickly,
17 and I think that the savings there in terms of lives
18 would be immediate.

19 In fact, what occurs traditionally today
20 is that we are approaching our current problems with
21 all the funding currently available, as one off
22 solutions, as silos. Everyone has a great idea, and
23 all of them very valid, the ones I've seen, but often
24 times they solve that agency's problem, and provide
25 the interoperability and communication across

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1 platforms to include non-traditional partners that
2 they may not even now exist.

3 So when it comes to Homeland Security, the
4 whole scope of this question has grown exponentially,
5 and right now what were traditional boundaries for
6 jurisdictions and responsibilities have blurred.
7 They've expanded exponentially and it expanded in ways
8 that we didn't expect just a few years ago.

9 Right now we need to be able to absorb
10 information from well outside traditional sources, and
11 there are a number of information sources available
12 today, and in the very near future, where we could
13 leverage that information for very rapid decision-
14 making and again, improve the response we offer to
15 citizens in both small and large incidents.

16 Syndromic surveillance is a concept that a
17 lot of folks have heard about, that basically tracks
18 what's going on in an area and can deliver information
19 that piecemeal is meaningless, but in the aggregate,
20 paints a very clear picture, and if we had that sort
21 of clear picture on regional levels, we could make
22 very effective decisions not three weeks later when it
23 all becomes clear, but close to real time as these
24 things are evolving. This amounts to a need to
25 collect data real time. So again, the idea that

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1 safety and all its relevant agencies, make up an
2 enterprise solution I think is very critical.

3 E911 was clearly the first effort in what
4 was our emergency response network to include data,
5 location data, something that was coming in with the
6 voice message. What we find is now that a number of
7 different information streams, digital information,
8 information vital to make decisions, will be coming in
9 in the very near future. We need to have
10 methodologies for taking that information, packeted
11 information, and moving it whether it be voice, video,
12 or typical data from a spreadsheet.

13 Right now 54 percent of the population is
14 not covered by a PSAP that has submitted a letter for
15 Phase Two. I think that's a very incriminating
16 statistic. We need to make it easier for PSAPs to
17 move through Phase Two, and it may well be that the
18 traditional methodologies we're imposing on them,
19 bring in a vendor, get another one off solution that
20 fixes your problem, may not be the most cost-effective
21 methodology and it may not standardize the process any
22 better than we currently have it.

23 What brought me into this adventure
24 several years ago was the promise that one day, when a
25 car crashed in my jurisdiction, I would know 30

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1 seconds after that crash, where it happened, what was
2 involved in the accident, and the potential for injury
3 to the participants in that vehicle. That is right
4 around the corner today, and right now in most of
5 America, there is no way to seamlessly transfer that
6 data to the people that need to know, and I'll put it
7 to you that in a lot of regions, the folks that
8 collect this data aren't even sure they know the right
9 people to call. They desperately want that
10 information, and I think we can use that information
11 to save lives.

12 If you look at this graph, seismic
13 information, this is from a sensor in a car. This is
14 a real crash, and by using celorometers in the car and
15 sensors, we can actually collect this data today, and
16 using that data, recreate a crash test dummy type
17 picture of what happened in the car and predict injury
18 to the folks that were participants in that car. A
19 car computer right now knows a lot of things that
20 would help us. It knows if you have your seatbelt on,
21 it knows how fast you're going, it knows how many
22 people are sitting in the car. That can be really
23 helpful if you happen to run into something at 85
24 miles an hour. People could prepare for your care and
25 the seamless integration of services responding to

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1 that could be very effective.

2 Likewise, hazardous materials are
3 traveling up and down our highways in ways that we
4 have no idea. People are tracking this very
5 effectively. It's a very important thing to know.
6 But in fact, if one of these trucks crashes, people
7 know, folks in my business don't know. We need that
8 information to make effective decisions and it's
9 available today if we have the network to move the
10 information.

11 So what do we need? And I think this is a
12 term from the CommCare folks, but it's Wal-Mart and
13 Visa meet emergency medicine, or emergency situations,
14 and what it is is trying to translate what is
15 available technology today for responding to
16 information management, and applying it to our world,
17 and a few of these terms have been brought up, and
18 obviously, the people in the audience are much more
19 sophisticated than I in understanding what this really
20 means, but the idea of common data standards, XML as a
21 wrapper, getting all the different data feeds into the
22 same system and parsing it on a need-to-know basis, is
23 a very powerful concept.

24 Web services are very well understood.
25 GIS mapping is critical. And the term open standards,

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1 we're not looking forward to a vendor-controlled
2 market where one or two control the market. There are
3 a tremendous number of applications being developed
4 all of which have very specific and important
5 applications, but I think we need to be open to all of
6 them, and so discouraging the one off and the silo
7 concept in developing these enterprise solutions, and
8 lowering costs by distributing these technologies on a
9 common platform, everybody using the same basic
10 framework, you drop the cost for everyone, and they're
11 allowed to pick their own needs and solve their own
12 problems on a common platform.

13 In any case, high speed data access has
14 got to be a priority for public safety, and I think
15 that's certainly where the FCC can take a role in
16 trying to mandate the importance of broadband
17 communication for public safety. That is not
18 commonplace in most of the dispatch agencies in my
19 jurisdiction, and I'll put to you probably not in much
20 of the country.

21 A very important concept as we have
22 piloted our project is that you cannot have one system
23 that solves this problem, biohazards, and this system
24 that solves traffic incidents, and this system that
25 solves some other important thing that you're doing.

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1 If we can make the same platform that deals with day-
2 to-day problems the platform you turn to when it's a
3 very important large-scale event where people remember
4 how to use it, it's there in front of them, it's
5 something that they have comfort with and it will be
6 more effective. And then of course, the standardized
7 interfaces for data sets so that we can move this
8 fairly seamlessly.

9 What we have done, and I'm going to talk
10 very briefly about this now, because we have set up a
11 demonstration across the hall. There is a working
12 prototype using technologies available today, that we
13 have actually demonstrated several times now in the
14 state of Virginia, just across the river,
15 interoperability, allowing end-users to select the
16 data they want to see, several levels of communication
17 available in the same system, and it's based on a
18 simple framework of the need for a directory, and
19 electronic directory that doesn't exist today, but
20 could. The framework for this directory has been
21 built, and it's built upon a framework of a GIS map
22 where you as an agency provider, could define an area
23 in a map that you're responsible for, and that's
24 depicted in this slide here.

25 Some interface. This was a very simple

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1 cheap Web site put together for a demonstration very
2 quickly. It doesn't cost a lot of money, there are
3 very sophisticated versions of this. This could be
4 available widely and provide access to messaging in a
5 very expensive format. But what it provides for is an
6 end-user to set up links that they can find helpful,
7 an interface to emergency messaging, and a map on
8 which to deploy these incidents as their battlefield.

9 The notion that a lot of good work has
10 been done in this country preparing for a number of
11 different kinds of incidents, there's lot of great
12 training available, a lot of it online. Any training
13 that's been done in any given institution can be put
14 online, on your own Web site, linking that real time
15 training for just in time application can be extremely
16 valuable when we're anticipating any number of
17 different events we may never have seen before. That
18 can be available today.

19 So again, in summary, it's this notion
20 that we want the best communication, we want fast
21 communication, and we want to put our commanders --
22 the reason we've been very successful in recent
23 military engagements, we have put commanders in charge
24 of information that's going immediately to the real
25 time folks on the front lines, and back and forth the

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1 information flows, and that keeps them in touch with
2 what's really happening.

3 I'd like to think that emergency providers
4 that are in command centers have that same access to
5 information immediately going right to the front line
6 people. So with that I'm going to close. It was --
7 again, I would like to emphasize to folks there is a
8 working model that prototypes this. It's available
9 for demonstration across the hall, and we'd love to
10 have people come by. Thank you.

11 COMMISSIONER ABERNATHY: Thank you very
12 much, and as you know, we're happy to take questions
13 from the audience, but I think I'll start with a quick
14 one for Mr. Jones. As we're looking towards the
15 future, and the FCC is going to try and be cognizant
16 about what we've done wrong, what we've done right,
17 how is this? We have a rule called the deliver all
18 calls rule, and this was originally adopted to promote
19 911 connectivity for end users which, of course, is
20 what everybody wants. What we didn't anticipate there
21 was an unintended consequence, and we tend to find
22 that happens in our world a lot, and that is, and for
23 call centers specifically, and that's where you have
24 these non-initialized phones and unintended calls, and
25 so a bunch of these calls will go into the call center

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1 and sort of bog down the calling, and we've heard
2 complaints that we should -- that somehow maybe we
3 should be thinking differently about how calls go
4 through.

5 Now maybe this is something where you work
6 through some network that tracks and makes sure these
7 are real calls and does it so fast that you don't bog
8 down the PSAP with the information, but these are some
9 of the questions that we're going to be grappling with
10 as we go forward about what sort of obligation should
11 we put on providers?

12 MR. JONES: I think that's an excellent
13 question, and I'm going to go back to a statement I
14 made in my discussion, talking about the basic
15 building block or a concept of the NENA Future Path
16 Plan, and that was that whatever solutions we're
17 referring to must be driven by the service needs,
18 functions and features that are identified with the
19 perspective of public safety operations. So in other
20 words, we look at this, what rule-making, or what
21 solution are we referring to, what impact is it going
22 to have from an operations of the public safety and
23 the emergency service provisioning out in the field.
24 It is -- some could make the argument that this
25 particular rule that you refer to the perspective of

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1 public safety was not brought to bear and now we are
2 paying that price. That is why this path plan
3 identifies that from the beginning. We're going to
4 compare these solutions and technologies to that to
5 insure that the perspective of public safety and its
6 operations are adhered to.

7 COMMISSIONER ABERNATHY: And I have one
8 for Dr. Potter. One of the questions that I have is
9 how do you envision the management of this information
10 flow, and by that I mean, some of it will have privacy
11 concerns associated with it. You can have so much
12 information that you have no information if it's not
13 properly categorized, and you're still at a loss, and
14 how do you manage the flow to the appropriate parties?

15 What's your vision for that, and then what, if any,
16 role should government have in this, or is this more
17 or less a program where once we place the obligations
18 on carriers to be sure and convey this information, we
19 can allow the marketplace then to handle the delivery
20 methods.

21 DR. POTTER: Those are excellent
22 questions. I think it's really a combination of all
23 of the above. It's a simple answer. No. It's the
24 classic public-private partnership. It truly is going
25 to require that municipalities or the federal

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1 government or state government come forward and to
2 fund parts of this which would require, I believe, the
3 upgrade of infrastructure in your PSAPs, if not your
4 hospital networks. It would require the development
5 of this directory. The directory itself is a concept
6 that's extremely important, and I think it answers the
7 next question that you raised.

8 The directory is a self-registered pathway
9 so that you as a provider would actually delineate the
10 kinds of information that you want. It wouldn't be as
11 much a push as a pull, so that you wouldn't
12 necessarily be inundated with information that you
13 don't want, and there are filters that can be placed
14 on that information to very effectively control how
15 you visualize it. There are a number of application
16 Web sites which have additional tools that segregate
17 the information, and make it very easy to manage, and
18 I think those are important to see, and we can
19 demonstrate those for folks next door.

20 But I think that the way we see this, that
21 there are certain information streams that currently
22 are not available that folks will find helpful. One
23 of those is the advanced crash notification and there
24 are privacy issues with that. I don't think we can
25 mandate on society that everybody have this in their

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1 car, and put this forward. We did it with seatbelts,
2 we've done it with other things, but at this point I
3 would take the percentage of folks that would
4 voluntarily submit the information.

5 Right now I don't get it at all, and if 50
6 percent, 70 percent of the folks that had this
7 technology in their cars turned it on voluntarily,
8 that's information we don't currently have, and I'd
9 like to enable them to offer that information. So I
10 think we have to be very careful what we mandate, but
11 to say it's available is a different story. But once
12 the framework is up for this system, the applications
13 would be left to vendor groups that would contract
14 with either with state level or lower level, local
15 level agencies and I think to open that marketplace to
16 the best vendor is the American way.

17 COMMISSIONER ABERNATHY: I was just
18 curious, David, if you have any thoughts about this
19 relationship between the public safety answering
20 points, which are clearly government-funded
21 responsible to the public and how it might work with
22 the kind of vision that Dr. Potter has been talking
23 about.

24 MR. JONES: It was very interesting to
25 note the commonalities in these two discussions before

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1 you. The path plan and its desire for continuing or
2 forging new partnerships is built upon those basic
3 precepts of insuring both the reliability and
4 integrity of 911 networks however they may be applied.

5 This is one example which at least at this brief
6 discussion point, simply proves that point.

7 DR. POTTER: I'd like to add one other
8 thing. There is no one set of rules that will govern
9 the way this information is managed. I think that it
10 has to be the local level, because what happens in
11 Chicago may be entirely different than what happens in
12 Wilkesboro, North Carolina. They're different
13 communities with different standards for information-
14 sharing and those have to be respected, and to have
15 the locality maintain control of how that information
16 was shared, is very, very important.

17 COMMISSIONER ABERNATHY: Now are you
18 working today with any partners on -- not as extensive
19 as your vision is, but today with some of the sort of
20 the crash data-gathering?

21 DR. POTTER: Well, currently the crash
22 data officially is not available in terms of real
23 stuff coming out of the cars. We have had up a
24 communication platform which linked fire and rescue,
25 local police, the hospitals, and we opened it up to

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1 public health in a recent drill. So we're already
2 linking multiple agencies.

3 COMMISSIONER ABERNATHY: Are there any
4 questions from the audience before we go on to our
5 next panel? If not, I want to thank both these
6 gentlemen for coming today and spending time with us
7 and talk about the future. Thank you.

8 Okay. Panel two. This is where we move
9 on to focus on developing technologies and commercial
10 applications to achieve this vision of where we're
11 able in a very real time way to manage the data,
12 manage the information, in a way that advances public
13 safety and safety of life.

14 What I thought I would do just to save
15 time in getting up and down, is we'll start to my far
16 left with Jeff Robertson of CML Emergency Services,
17 and I think what I'd like for each of you to do is do
18 a brief intro who you're with, talk about what you're
19 working on, and then just move to the next person.
20 That way, I don't need to continually get up and down.

21 I can listen and then at the end we'll have questions
22 for everyone when we finish, and you guys can -- and,
23 in fact, each of you can comment on the information
24 that's been provided by the others. Let's start.

25 MR. ROBERTSON: Great. Well, thank you,

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1 Commissioner Abernathy. It's a pleasure to be here.
2 My name is Jeff Robertson. I'm the president and CEO
3 of a company called CML Emergency Services. We've
4 been in public safety at our company since 1979. You
5 can probably tell that I wasn't the president back
6 then, but we are pretty proud of our history in public
7 safety of over a decade. We have over 960 PSAPs
8 across the United States that are customers of ours,
9 and we have roughly 235 employees dedicated to public
10 safety, and for the discussion today, I really want to
11 just turn it back to when I call my bank, Bank of
12 America, and I dial the 1-800 number, I am amazed
13 before they pick up the phone, they've got my bank
14 balance, they've got -- they know the fact I didn't
15 make my minimum payment on my Bank of America Visa,
16 they also have my credit bureau, they know my
17 retirement savings, how much is left on my mortgage
18 payment, and that's before the phone rings, and I'm
19 amazed that when I call the bank, and I say where are
20 you, oh, I'm in California, or I say, well, where are
21 you, oh, I'm in Virginia when they take my call, and I
22 think -- I wanted to know is equipment today, and the
23 people watching is, why isn't this in public safety
24 today?

25 I've been in technology most of my young

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1 career and is it because of the technology? I don't
2 think so because of the example I just mentioned to
3 you. Is it because Bank of America is a for-profit
4 business? Is it lack of funding?

5 I'd like to say on this funding point we
6 heard a lot over the last couple of days on funding,
7 and I've had the pleasure when visiting our customers
8 across the country, on the west and east coasts, and
9 I've traveled to almost every other 50 states, and I
10 took a good -- I would urge each PSAP director,
11 especially at the state level, to take a good, hard
12 look at the funding mechanism. I have not yet -- I've
13 been to maybe one state jurisdiction where the funding
14 for running the 911 network wasn't really there. If
15 you look hard enough, we think it's there.

16 We have a team of telecom engineers,
17 lawyers, business people, accountants, who will be
18 happy come to the jurisdiction and do a summary for
19 you of where those costs are, and where we think we
20 can help you. If you're under budget constraints, I
21 think the money is in the system. It really is in the
22 system. You have to look a little bit, but there is
23 money there, funding for these kind of technologies.

24 One of the things that we said we'd like
25 to prove to you as well when we show up is that you

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1 can gain control of your network, and the public
2 safety network, when you gain control of it, it will
3 not add any more cost to your already burdened
4 budgets, and I think we saw this with, and actually
5 with the visionary of one of our customers, Greg
6 Ballentine, the president-elect of APCO out of Kansas
7 City, Kansas and Missouri, the Mid-America Regional
8 Council, he took control of his network in 2002, and
9 since then he put out a white paper, out with the Mid-
10 America Regional Council, and he was saving \$2 million
11 a year by taking control of his network.

12 Now he didn't -- that money was used and
13 given back to the citizens in forward mapping
14 technologies, training of the PSAP staff and other
15 things, so they put it to good use, and by the way,
16 when he took control, he went Phase Two ready at the
17 same time.

18 At CML we believe that the technology I
19 just shared with you about Bank of America should be
20 available to public safety, and that's our mission at
21 my company, and I can tell you out of the 235
22 employees that are at our company, we are dedicated to
23 deliver that to public safety. All our R&D efforts
24 are focused in this area.

25 I want to just talk about what we call

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1 four step plan, and we think that this plan is doable,
2 it's being done today. In step one, it's a direct
3 connection to the carrier. So in the district here,
4 in mid-November, we had the pleasure of having the
5 District of Columbia as a customer of ours, in mid-
6 November the District of Columbia takes control of
7 their network. They are connecting directly, just
8 like Greg Ballentine did in Kansas and Missouri.
9 We've seen Pete DeNutte who was here from New
10 Hampshire took control of his net work. We saw Ray
11 LaBelle from the State of Rhode Island who was one of
12 the first PSAPs to take Phase Two calls, took control
13 of his network. We've done it in Hawaii, Pittsburgh,
14 Pennsylvania in Allegheny County, Okaloosa County,
15 Florida, and now -- and we all know Norm Forshee from
16 Saint Claire County, Illinois, as well. We're pretty
17 proud that he's a CML customer and we got him to Phase
18 Two in 2001 by taking control of his network, and he
19 connected directly to the carrier.

20 Step two, now that you have control of
21 your network, we like to tell public safety officials,
22 now you bring in IP. You heard a lot of talk earlier
23 from the two gentlemen about voice-over IP technology
24 and IP, and I've been in data technology all my
25 career. Once you do that you can start sharing

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1 information, whether it's hospitals, or it's On-Star
2 sending crash notification from the vans. I mean, now
3 once you've got -- but you've got to get control
4 first. You've got to get that control first, then you
5 can have these -- all these open standards of IP
6 information come to your PSAP or to your entire state
7 for that matter.

8 Also I think step two, once you start
9 adding these IP technologies, you're going to see one
10 other thing happen. We can now take care of call
11 congestion. When 50 callers call at the same time to
12 report a small fender-bender on I-95, you can deal
13 with those calls. We can tell the location where
14 they're calling from, and chances are if they're all
15 in the same 100-yard radius, it's probably the same
16 incident. If somebody calls from the other end of
17 town, chances are it's a different incident, could be
18 someone having a very serious, you know, heart attack
19 or something. We can get that call through rather
20 than giving it a fast busy and jamming up the phone
21 lines, because most agencies do not have enough lines
22 to handle the wireless 50 callers simultaneously.

23 Step three, we enable anyone in your
24 publics that your secure, private safety network,
25 whether that be in your state, large metropolitan

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1 area, to log-in. When you're having an emergency IP
2 enables you know to log in. Call the guys at the fire
3 station that have been previously trained, start
4 taking 911 calls, and then when you're done, the
5 emergency is over, log off. 80 percent of the PSAPs
6 in the country are four seats or under as far as
7 operators, and they're rarely staffed 100 percent.
8 That's 80 percent. So having that ability to turn
9 people on when there's an emergency, we feel the
10 technology will really be there.

11 Imagine adding with this IP technology,
12 you can add 50 phone lines in a matter of seconds, so
13 you can do that by going in and setting it up, 50
14 seconds and you have 50 more phone lines without ever
15 calling the phone company. When the emergency is
16 over, the tornado is done, shut them down, so you
17 don't have to pay for them, but use with a bandwidth
18 overflow. This is being done in private business
19 today with voice-over IP, and we're delivering it to
20 customers today. Companies across the country are
21 doing it.

22 The fourth step and the last step we see
23 in the plan is you have a public safety network, a
24 network operations center. The governor could watch -
25 - I'll wrap up. I'm pretty passionate about this.

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1 The governor could wrap up -- or the governor could
2 look at a screen and see all the PSAPs in his state,
3 could see there's three break and enters happening in
4 the north part of the state, there's a big accident on
5 the highway in the middle of the state, and on the
6 bottom of the state he could see there's a highway --
7 a high-speed police chase going on. You can watch all
8 that once all these PSAPs are connected.

9 So I'd like to thank you. Dale Hatfield
10 had a great report. I will not quote him, but he had
11 a great thing in his report and he had three lines.
12 He said, E911 calls -- he was concerned about the
13 increased volume of E911 calls are being built upon a
14 platform or a foundation that has serious limitations
15 in terms of speed, scalability, and adaptability, and
16 he was also concerned in his report about voice-over
17 IP and other things. I think by taking control of the
18 network, following a four-step plan, I think we can
19 get you there, and I know CML would love to help you.
20 Thank you very much, Commissioner.

21 MR. ALLRED: My name is Craig Allred. I
22 know on the program it says Drew Dawson. He was going
23 to fill in for me, but I was able to make it here and
24 I appreciate it. I retired from the State of Utah
25 from the Department of Public Safety after 24 years,

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1 and so I do have a little bit of a background in
2 emergency services. I am now the public safety
3 coordinator for the Intelligent Transportation Office
4 of the U.S. Department of Transportation and I know
5 when you're on the roadway intelligent transportation
6 is an oxymoron, but there really is such a thing and
7 it does help, and I'd like to go over a couple of the
8 things that I believe are useful and are going to help
9 you as you become more aware of it.

10 The goal of our program is to build a
11 bridge between the transportation and public safety
12 communities, and many times that is a challenge to say
13 the least, but I think when we look at it, you have to
14 realize that we cannot continue to build highways. We
15 can't continue to add more lanes, and more lanes, and
16 more lanes. We have to be more effective on where
17 we're at.

18 The reason the Department of
19 Transportation is so interested, and has been
20 interested as the joint program office in wireless
21 E911 for the last two-and-a-half years, is just that.

22 We are concerned about safety, mobility, and how do
23 we clear and keep those roadways running? How do we
24 get the proper EMS help to the emergency physicians?
25 How do we keep the system running, and how do we keep

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1 it running?

2 If you look at an incident that may happen
3 on one of the bridges in New York City within two
4 hours can affect the traffic in the D.C. area. Within
5 an hour it can start affecting Boston, Philadelphia.
6 Within just a very few hours, you can have backups all
7 the way down to North and South Carolina. Secondary
8 crashes, crashes that are happening because of the
9 primary incident, often are much more devastating than
10 the primary crashes.

11 We need to be looking at the new
12 technologies. I appreciated the speakers that came
13 before talking about some of the efforts the last two
14 days. We're looking at, for example, New York City
15 right now, an integrated incident management system
16 where not only do we have information, wireless
17 information going back and forth, but we're also
18 sending photographs to be able to allow the primary
19 and secondary responders to respond quicker, to be
20 able to clear the scene much quicker, and get the
21 proper medical help, GIS equipment, GPS, been using it
22 and up and running right now in New York City, and is
23 between the fire department, law enforcement, public
24 works, and department of transportation.

25 We have a project between the Department

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1 of Justice and the Department of Transportation and in
2 that project, what we are doing, is we are looking at
3 the CAD integration, the computer assisted dispatch
4 centers, to make sure we're transferring the proper
5 information to all the parties that have a proper
6 need.

7 We're working very closely with the
8 telematic service providers, including On-Star, ATX.
9 we have a project with On-Star to be able to transfer
10 the data and be able to get some of their information
11 into the native 911 system. Right now there is a big
12 problem just with the data. There's great data out
13 there, but the On-Star centers are actually having to
14 call a ten-digit number. We need to be able to do
15 that better, and On-Star has been working extremely
16 close with us, and we appreciate those efforts, as are
17 the other telematic service providers. Telemedicine,
18 you already heard Dr. Potter talk about some of the
19 things that are going on there. I'm fully in
20 agreement with how can we give the best resources, how
21 can we get those responses out there the proper way?

22 Now I told you I came from the state of
23 Utah. I can remember many times being called at two
24 o'clock in the morning, woke up, get in a patrol car,
25 and drive 75 miles one way to get to a crash scene,

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1 not knowing what I was going to see when I got there,
2 whether I'd have one, two, three, six, eight, ten
3 people in that vehicle, how violent the crash was,
4 what type of response? Getting there after an hour or
5 an hour-and-a-half and then having to request another
6 ambulance, or another crew.

7 Technologies of this nature, and what
8 you're seeing in the Shenandoah Valley, are vital to
9 law enforcement, public safety, and emergency medical
10 services. The Amber Alert. I just came back from an
11 Amber Alert meeting this afternoon. Amber Alert is a
12 way of building that electronic bridge between public
13 safety and transportation again that can be used for
14 weather incidents, natural disasters, terroristic
15 incidents, those types of things there.

16 We have to remember that safety and
17 mobility is what the goal we have in the joint program
18 office, and how can we use technology to keep and
19 maintain that flow of traffic? I would hope that you
20 would take the opportunity to look at our Web site.
21 It's www.itspublicsafety.net and we have cards in the
22 other room where the display is, to look at what we
23 are doing on the wireless E911 emergency medical
24 services, and we continue looking forward to teaming up
25 with the groups in this audience, to be able to

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1 provide the safer, more efficient, mobility
2 transportation. Thank you.

3 MR. POMERANTZ: Hi. My name is Scott
4 Pomerantz, and I head up a company called Global
5 Locate. I'd like to thank Commissioner Abernathy for
6 inviting us here, and the rest of the wireless bureau,
7 for hosting the event, along with the Commission.
8 While I have not participated in these events in the
9 past, I'm delighted that the government is taking a
10 role that they are taking leading this, to facilitate
11 compliance and safety for all U.S. citizens, whether
12 here or around the world.

13 It's only through a forum like this that

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