

1 **TECHNICAL GUIDELINES COMMITTEE MEETING**
2 **NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY**
3 **BOULDER, COLORADO**
4 **Thursday, September 29, 2005**

5 **(START OF AUDIOTAPE)**

6 MR. EUSTIS: Good morning everybody. My name is Alan
7 Eustis. I'm with the National Institute of Standards and
8 Technology in the Gaithersburg Headquarters. I'm here with
9 the rest of the NIST voting team and welcome the public in
10 attendance. The people that are viewing by Webcast, our
11 Elections Assistance Commissioners, all of our TGDC members
12 that are participating here in person as well as via the
13 teleconference capability and we'll check on their call ins.
14 We are a little early at 8:56 but I did want to go through
15 just a few logistical issues to start with and we can start
16 on time that way.

17 This is, of course, our concerns that you understand
18 that we actually have practice here all the time. Somehow
19 at our meetings the fire alarms go off and they did yesterday.
20 I can tell you that they work and what happens is the little
21 strobe lights flash and you will hear a very luxurious woman's
22 voice tell you "Please leave by the nearest exit." It's very

1 calm and reassuring and as you can see we are in the auditorium.

2 You have two exits in the front. I would ask that you be
3 very careful if you use this exit due to the lift. Both of
4 these exits then exit out through a ramp to the outside and
5 for those closer to the back, you can go out the back doors
6 and right around to either side are exits to the building.

7 Hopefully this time we've gotten the fire drill out of the
8 way but we never know for sure. Please turn off y our
9 cell phones and pagers. There is no food allowed in the
10 auditorium or drink I should say, as well. Please wear your
11 name badge at all times and for those that are hearing impaired,
12 we have signers over here, stage left, and please feel free
13 to come over here and sit in the second or third row. You
14 will have a better view that way of what's on screen as well
15 as what your signer is interpreting for you.

16 For those viewing via the Webcast, it's closed captioned.

17 I should mention for those of you that are not familiar with
18 this, that the NIST facility here in Boulder there were two
19 signers for responsible in the early 1980's for figuring out
20 how to put closed captioning into the TV. signal and won and
21 Emmy. The Emmy is right outside. I don't think any other
22 government agency has won an Emmy.

1 There are a lot of other wonderful things that our hosts
2 here at NIST Boulder have provided for the American public
3 in realms of physics and measurement and, in fact, we have
4 a Nobel Prize winner on staff here and a MacArthur Fellow.

5 If, at lunchtime, you would like, there is a little history
6 center over to the left that talks about the development of
7 a clock but I would like to say the Atomic Clock.

8 The NIST staff here has been absolutely tremendous in
9 assisting us in getting ready for this meeting, particularly
10 Wendy Ortega McBride and Zelda Bailey and Pat Trossburger
11 and others. We are most grateful from the Gaithersburg staff
12 that they were here to help us.

13 I think I have enough presentations for the entire public
14 out front. If I do not, all of the material from this meeting,
15 if it's not already up on the <http://vote.nist.gov>, it will
16 be early next week. That includes the PowerPoint
17 presentations. We had a little trouble this morning with
18 one of the copiers but we'll have that material, hopefully,
19 by the end of the day. With, the end of my introductory remarks,
20 we are going to go fairly quickly this morning, have a break
21 around 10:45 and lunch around 12:30.

22 For those of the public as far as eating lunch, if you

1 walk out of the entrance and take a left down the bicycle
2 path you'll go through a little tunnel and you will come out
3 at a big shopping area with about ten places to eat.
4 Everything from Tai food to Subway to, I think there's
5 someplace call the Egg and I, which is a pretty good place
6 to eat. So, that would be my suggestion for lunch for the
7 public in attendance.

8 With that, I turn the meeting over to Dr. William Jeffrey,
9 the Director of the National Institute of Standards and
10 Technology.

11 DR. JEFFREY: Thank you, Alan. First of all I would
12 like to welcome you. Good morning. I'm Bill Jeffrey, the
13 Director of the National Institute of Standards and
14 Technology and the Chair of the TDGC. We have a very full
15 packed day today so we are going to get going right away.

16 With that, I hereby call to order the Fifth Plenary Session
17 of this Committee and the first thing I would like to do is
18 have everybody rise and say the Pledge of Allegiance.

19 ALL: I pledge allegiance to the flag of the United
20 States of America and to the Republic for which it stands,
21 one nation, under God, indivisible, with Liberty and Justice
22 for All.

1 DR. JEFFREY: At this time I would like to recognize
2 Mr. Phil GREENE as the TDGC parliamentarian and request that
3 he determine whether or not a forum of the committee is present.
4 Phil.

5 MR. GREENE: Good morning. I'll direct you to the
6 parliamentarian's memo which is in your workbook. It has
7 an overview of the things that we will be working on today.

8 I will point out one typographical error. In the third
9 paragraph it says "WAC" where, of course it should be "EAC"
10 for Elections Assistance Commission. I don't think any
11 members of the Western Athletic Conference will be here today.
12 I would like to determine if there is a quorum today and I'll
13 be calling roll. Williams. Berger.

14 MR. BERGER: Present.

15 MR. GREENE: Berger is here. Karmol. Craft.

16 MR. CRAFT: Here.

17 MR. GREENE: Gale.

18 MR. GALE: Here.

19 MR. GREENE: Elekes. Gannon.

20 MR. GANNON: Present.

21 MR. GREENE: Harding.

22 MR. HARDING: Here.

1 MR. GREENE: Harding is here. Gannon is here. Miller.
2 Purcell. Quisenberry.

3 MS. QUESENBERRY: Here.

4 MR. GREENE: Quisenberry is here. Revest.

5 MR. RIVEST: Here.

6 MR. GREENE: Revest is here. Schutzer. Schutzer.
7 Turner-Bowie

8 MS. TURNER BUIE: Here.

9 MR. GREENE: Turner Buie is here. Jeffrey.

10 MR. JEFFREY: Here.

11 MR. GREENE: I have determined that we do have a
12 quorum. We have nine present.

13 MALE SPEAKER 1: We need to find out who is present.
14 Can they call us in?

15 MR. GREENE: I believe we have a few attending via
16 teleconference and we are waiting on those but I have
17 determined that there is a quorum and I'll call roll in a
18 few more minutes. I'm going to call the roll again to see
19 if anyone attending via teleconference is here. Williams.
20 Karmol.

21 MALE SPEAKER 2: If anyone can hear this is Jim Elekes.
22 You are not coming through on the teleconference line. I

1 can just barely hear you.

2 MR. GREENE: Can you hear me now? Testing. Testing.

3 Can you hear me now?

4 FEMALE SPEAKER 1: No.

5 MR. GREENE: Calling roll again for Williams.

6 Karmol.

7 MALE SPEAKER 1: You need to bring your volume up

8 or something because you are fading in and out. There's not

9 a consistent signal.

10 MR. GREENE: How about now? Mr. Elekes can you hear

11 me now?

12 FEMALE SPEAKER 1: I can't hear a thing.

13 FEMALE SPEAKER 2: I can't either.

14 MR. GREENE: Will you please identify yourselves?

15 MALE SPEAKER 2: I have the volume on my headset

16 up at about 8 in order to just hear him softly.

17 MR. GREENE: Can you hear me now? We've noted that

18 Eleques is here. Miller. Purcell. Schutzer.

19 MS. MILLER: Miller is here.

20 MS. PURCELL: Purcell is here.

21 MR. GREENE: Purcell is here. Can you hear us

22 though?

1 MALE SPEAKER 3: I don't think they can hear.

2 MALE SPEAKER 4: We want to try to reach Alan because
3 they are having technical problems.

4 FEMALE SPEAKER 3: I just tried to call him.

5 MR. GREENE: Calling roll one last time. Karmol.
6 Williams and Schutzer. We do have a quorum and we are going
7 to continue and we are going to work on the technical
8 difficulties of the audio to the persons attending via
9 teleconference. I turn the floor back over to Dr. Jeffrey.

10 DR. JEFFREY: Thank you, Mr. GREENE. This is a good
11 example of real world technical issues.

12 Let's try again. Is it safe? Okay. We'll try again.

13 If anyone starts going deaf, give me a hand signal.

14 First of all I would like to start off by thank you EAC
15 Commissioner Davidson, the former Colorado Secretary of State
16 and member of this committee for the invitation to meet in
17 her home state. I also want to thank the staff of NIST Boulder
18 for helping to make this a good event and finally, let me
19 thank the members of this committee. This takes a lot of
20 time and a lot of effort. This is an important issue and
21 I really do appreciate, and I think everybody appreciates
22 the value that the time and effort you are putting into this

1 to make it succeed and to make recommendations to the EAC,
2 how important this really is. So, thank you personally and
3 also for the country.

4 I was sworn in two months ago, actually two months and
5 three days ago as the Director and I would like to thank Rach
6 Smergian who was the Acting Director of NIST and sat in this
7 chair for the first four plenary meetings. He did an excellent
8 job of getting to where we are today. I look forward to
9 hopefully filling in his shoes and continuing the progress
10 that he made.

11 I am also pleased to welcome a second new member of this
12 group so I'm not the only new person here today. The Honorable
13 John Dale who is the Secretary of State for Nebraska who will
14 replace Secretary Davidson as the representative of the EAC's
15 Standards Board since the president nominated Commissioner
16 Davidson as an EAC commissioner. And with this we are very
17 pleased that you are here and would you like to say a few
18 words of introduction?

19 MR. DALE: Thank you Dr. Jeffrey. It's a real honor
20 to be serving on this committee. I'm looking forward to
21 getting to know all of you better and to becoming more
22 acquainted with the tremendous staff assistants that you have.

1 I'm Chief Election Officer for the State of Nebraska,
2 Secretary of State since December of 2000 and I'm very, very
3 committed to election reform issues that we are addressing
4 to bring confidence back in the public in our election program.
5 Thank you, Dr. Jeffrey.

6 DR. JEFFREY: Thank you, and welcome. The Committee
7 is also pleased to have the EAC Commissioners present here
8 with us and we are going to be getting remarks from them and
9 comments from them in a few moments. In particular I would
10 like to just call out the EAC Chair Hillman, Vice Chair
11 DeGregorio and Commissioner Davidson in attendance and
12 Commissioner Martinez was not able to make it but does have
13 some comments that we will read for the record. I would also
14 like to point out Executive Director, Tom Wilkey and Ms. Carol
15 Briquette of the EAC Manager of Special Projects. I look
16 forward to hearing her comments and providing us some guidance
17 as we move forward.

18 At this time I'll entertain a motion to adopt today's
19 agenda for the TGDC. Is there a motion to adopt today's
20 agenda?

21 MALE SPEAKER 5: So moved.

22 FEMALE SPEAKER 4: Second.

1 DR. JEFFREY: Is there any discussion? In which case
2 I'll call a vote. Can I just do this by unanimous consent
3 or do you do this?

4 MR. GREENE: I'll go ahead and call the roll again.
5 Let's see how this works this time. Calling roll again to
6 adopt the minutes of the last meeting. Williams.

7 DR. JEFFREY: Just for the agenda. To adopt the
8 agenda.

9 MR. GREENE: Williams. Williams is not voting.

10 MALE SPEAKER 6: Jack. This is Jim Elekes of U.S. Access
11 Board. We are having a technical problem. They are working
12 to resolve it because we are barely hearing them.

13 MALE SPEAKER 7: Well, now, is the problem coming from
14 your end or from our end?

15 MALE SPEAKER 6: It would appear coming from your end.

16 MALE SPEAKER 7: From my end?

17 MALE SPEAKER 6: Yeah.

18 MALE SPEAKER 7: Well, okay, I've just asked the -

19 DR. JEFFREY: Is it possible to cut the audio up there
20 while we take this vote? Okay. Please proceed.

21 MR. GREENE: Berger.

22 MR. BERGER: For.

1 MR. GREENE: Berger votes yes. Karmol. Karmol not
2 answering. Craft.

3 MR. CRAFT: Yes.

4 MR. GREENE: Craft votes yes. Gale.

5 MR. GALE: Yes.

6 MR. GREENE: Gale votes yes. Eleques. Eleques still
7 experiencing technical difficulties. Gannon.

8 MR. GANNON: Yes.

9 MR. GREENE: Gannon votes yes. Harding.

10 MR. HARDING: Yes.

11 MR. GREENE: Harding votes yes. Miller. Miller,
12 technical difficulties. Purcell. Purcell cannot hear us.
13 Quisenberry.

14 MS. QUESENBERRY: Yes.

15 MR. GREENE: Quisenberry votes yes. Revest.

16 MR. REVEST: Yes.

17 MR. GREENE: Revest votes yes. Schutzer. Not
18 responding. Turner-Buie.

19 MS. TURNER-BUIE: Yes.

20 MR. GREENE: Turner-Bowie votes yes. Jeffrey.

21 DR. JEFFREY: Yes.

22 MR. GREENE: Jeffrey votes yes. That's nine votes

1 for. So the motion is passed.

2 DR. JEFFREY: Thanks Bill. At this time I would like
3 to entertain a motion to accept the minutes from the last
4 meeting, the April 20-21, 2005 meeting of the Technical
5 Guidelines Development Committee. Is there a motion to accept
6 those minutes?

7 MALE SPEAKER 6: So moved.

8 DR. JEFFREY: Okay, there's been a motion and seconded.
9 Any discussion?

10 MALE SPEAKER 7: Yes Mr Chairman.

11 DR. JEFFREY: Okay.

12 MALE SPEAKER 8: I just wanted to say thanks to the NIST
13 staff. They are exceptional minutes.

14 DR. JEFFREY: Thank you. Any other. Okay, let's call
15 the vote.

16 MR. GREENE: Calling a vote on the accepting of the
17 minutes of the last meeting. Williams. Williams not
18 responding. Berger.

19 MR. BERGER: Yes.

20 MR. GREENE: Berger votes yes. Karmol. Karmol not
21 responding. Craft.

22 MR. CRAFT: Yes.

1 MR. GREENE: Craft votes yes. Gale.

2 MR. GALE: Abstain. I wasn't present at the last

3 meeting.

4 MR. GREENE: Abstained. Eleques. Not responding.

5 Gannon.

6 MR. GANNON: Yes.

7 MR. GREENE: Gannon votes yes. Harding.

8 MR. HARDING: Yes.

9 MR. GREENE: Harding votes yes. Miller. Miller not

10 responding. Purcell. Purcell not responding. Quesenberry.

11 MS. QUESENBERRY: Yes.

12 MR. GREENE: Quesenberry votes yes. Revest.

13 MR. RIVEST: Yes.

14 MR. GREENE: Revest votes yes. Schutzer. Schutzer

15 not responding. Turner-Bowie.

16 MS. TURNER BUIE: Yes.

17 MR. GREENE: Turner-Bowie votes yes. Jeffrey.

18 DR. JEFFREY: Yes.

19 MR. GREENE: Jeffrey votes yes. That's eight votes

20 for which is a majority. The motion passes.

21 DR. JEFFREY: Thanks. Okay, let me just give a very

22 brief review for the public in attendance and also those

1 viewing on the Webcast as to why we are here today. Public
2 Law 107-252, the Help America Vote Act, which you will be
3 hearing as HAVA for the rest of today, established the
4 technical guidelines development committee. HAVA charters
5 the members of this committee to assist the Election
6 Assistance Commission with the development of voluntary
7 voting system guidelines. This committee's initial set of
8 recommendations for these guidelines was sent to the
9 Executive Director of the Elections Commission in accordance
10 with HAVA's nine month deadline on May 9, 2005. The EAC issued
11 draft voluntary voting system guidelines for public comment
12 in June of 2005. In the interim the 2002 Voting Systems
13 Standards adopted by the Federal Election Commission serve
14 as the first set of voluntary voting systems guidelines under
15 HAVA. Since the last meeting of the TDGC in April of 2005,
16 the NIST staff in coordination with the three working
17 subcommittees of the TDGC have drafted preliminary reports
18 on issues pertinent to future voluntary standards development
19 in the areas of human factors and privacy, security and
20 transparency and core requirements and testing of voting
21 systems. We will discuss these reports at today's plenary
22 session.

1 At this time I note that the latest revised version of
2 Robert's Rules of Order was adopted on July 9, 2004 to govern
3 the TGDC and subcommittee proceedings. I call on Mr. GREENE
4 to review the logistics of this fifth meeting of the TGDC.

5 MR. GREENE: Thank you, Dr. Jeffrey. I will
6 remind you - can you hear me?

7 I'll remind you of what I pointed out earlier, the
8 parliamentary memo will go over the format for today's
9 meeting and under Robert's Rules of Order we will be doing
10 what we have done in the past, considering motions, a motion
11 will be offered. It will be seconded. We will then have
12 discussion and following that there will be a vote and, again,
13 since we have a quorum, we will be looking for a majority
14 of at least eight voting for to have the motion passed.
15 Otherwise, again, it is consistent with how we have had the
16 meetings in the past.

17 DR. JEFFREY: Thank you. We do have an ambitious
18 agenda today and specifically as a committee we will review,
19 approve and, where appropriate, provide supplemental
20 direction.

21 Additional comments and position statements regarding
22 the work of this committee should be sent to voting@nist.gov

1 where they will be posted on the NIST voting website which
2 is www.vote.nist.gov. The comments we have received to date
3 have been posted and reviewed by NIST staff and TGDC committee
4 members. At this time I am very pleased to invite EAC Chair
5 Hillman and her fellow EAC Commissioners to address this
6 committee. We appreciate the Commissioners offer to address
7 the TDGC at this meeting and we welcome their remarks.

8 MS. HILLMAN: Good morning and thank you very much.
9 I'm pleased to be here this morning. It's wonderful to be
10 in Boulder. Dr. Jeffrey congratulations on your appointment
11 and to the members of the committee, congratulations on the
12 fantastic work over the last thirteen months. The Election
13 Assistance Commission in partnership with the Technical
14 Guidelines Development Committee has an awesome task and that
15 task has some conflicts in it that have to be resolved in
16 that there is a sense of urgency to provide the very best
17 standards and guidelines that we can possibly provide to
18 ensure the voting public that their votes will be secure,
19 counted accurately and, in fact, counted.

20 On the other hand there's a process that has to be invoked
21 to do careful study and development of the guidelines and
22 sometimes that process doesn't fit within the time lines of

1 election dates. Sometimes when you are doing standards you
2 can sort of set your own pace but in our case we have election
3 days every other year that must be adhered to, including
4 primary dates leading up to those general election dates and
5 so, it is commendable to the committee that it was able to
6 produce in nine months the guidelines that are currently out
7 for public comment.

8 The Election Assistance Commission has extended itself
9 through the resources available to us to be out across the
10 country the past four months receiving public comment. We
11 had hearings in New York, California and here in Colorado
12 so that we could receive testimony. At our public meeting
13 on Tuesday of this week we were informed that as of that date
14 over four hundred comments had been received. We expect that
15 a number of people who, like me, on occasion appreciate the
16 reason for a deadline is I have up until that day to do whatever
17 it is I'm supposed to do. So we would expect that a number
18 of comments would come in this week. We have been encouraging
19 people to do that, particularly the vendors who have been,
20 up to this point, a tad bit quiet in their comments on the
21 guidelines but we look forward to hearing their comments as
22 well.

1 As we move forward the Commission has been looking at
2 the future items in the guidelines to be reviewed and the
3 time line to do that and understanding that this process has
4 never been done this way before and so I won't say we are
5 making it up as we go along because we are not but we really
6 are trying to figure this out, this balance between producing
7 guidelines in a "timely fashion" and also taking the time
8 necessary to do a careful review and study of the components
9 of the guidelines. As we look toward future iterations, if
10 you will, of the guidelines, my colleagues will address more
11 about the three or four critical deliverables that I think
12 NIST has identified that the work of the TGDC, what that work
13 can produce for us and what the deliverable dates might be.
14 We need to balance that against the needs of the election
15 officials across the country and to provide this information
16 in a way that doesn't cause undue concern, if you will, that
17 election officials will feel they've settled into the
18 equipment that they have chosen and that they have trained
19 their staff and poll workers on how to use that equipment
20 and they have tested it and the fear that some component of
21 guidelines coming out in 2006 or 2007 may alter either what
22 their work plans are or their spending. As we did with this

1 set of guidelines, I'm pretty sure that we will produce future
2 iterations in a way that will be useful, provide the
3 protection and assurances that people need. When I step back
4 and think about it, it is indeed an awesome task to think
5 that we are involved in setting up standards for voting
6 systems that not only will address the technical components,
7 guidelines for the vendors who produce the equipment,
8 standards for the laboratories that will test the equipment
9 so that we can receive, we the EAC, can receive
10 recommendations on certification but that at the end of the
11 day an assurance to the voting public that the equipment in
12 place, the systems that they will be voting on are indeed
13 providing the kind of protection and assurance that they
14 deserve as voters.

15 So, I thank you to all members of the committee. I
16 apologize that I cannot be with you for the full day. When
17 I leave here I am finding my way to Kent, Ohio which is an
18 interesting challenge, from Boulder and so, I will be leaving
19 at about 10:00 but I appreciate the opportunity to be here
20 and just want to say on behalf of my colleagues at the
21 Commission, congratulations on a fantastic job. We look
22 forward to working with you over the next, over the years.

1 Thank you.

2 DR. JEFFREY: Thank you very much.

3 MS. HILLMAN: My colleague, the Vice Chairman of the
4 Election Assistance Commission, Paul DeGregorio.

5 MR. DeGregorio: Thank you madam Chair. It is indeed
6 a pleasure to be here. I've had the splendid opportunity
7 to be here for the creation of the TGDC. I was the federal
8 officer for the TGDC and be here for every meeting and followed
9 you very closely even at your other meetings that you've had.
10 It's a pleasure to be here in Boulder. You know when I got
11 my USA Today, in my room this morning and opened it there
12 was a whole story about the people of Boulder and how they've
13 opened themselves to the victims of Katrina right here in
14 Boulder. They spotlighted a few families. This is a great
15 community and I know it's a great community for NIST and its
16 employees to work in. We appreciate the work of NIST and
17 what they have done to support the TGDC and to support the
18 EAC since this relationship started in 2004. Its has been
19 a pleasure and it's a pleasure to have met Dr. Jeffrey and
20 last night we had the opportunity to talk and have dinner
21 with him and we look forward to your leadership. This is
22 a great group of people. I'm sure you've realized that in

1 the last two months. This is a component of the Commerce
2 Department that I think is, we think is, very important
3 certainly and I know it will gain your attention.

4 Secretary of State Gale and I have known each other now
5 for several years and it's a pleasure to see you on the TGDC
6 taking the place of my esteemed colleague Donnetta Davidson.

7 I know that you will do a great job because I know you
8 represent the Secretaries of State of this nation.

9 You know, you all did that great work last year and
10 delivered us a wonderful product in nine months that we have
11 now been reviewing as the Chair said. After you did that
12 we came to this crossroads, okay, what are we going to do
13 next? So the Commission passed a resolution in May which
14 I think you all may have seen, about the continuing work of
15 this committee and I know that's what is going to be embarked
16 upon today. You are going to have a lot of discussions about
17 the next generation and other things that you are going to
18 do. The Chairman mentioned what we did over the summer and
19 it's been very instructive to all of us, including me, as
20 we received the comments. I know that this process has been
21 transparent and public all along. You all when you went
22 through your nine month process had a very public process

1 that was, your comments were posted on your website for
2 everyone to see and that's very important here that the public
3 understands that they can participate and as Dr. Jeffrey said,
4 as our Chair said, our first iteration, comment period is
5 going to come to an end tomorrow so we encourage everyone
6 sitting out there to get their comments in. Let me say, just
7 for a moment if he is watching out there, he might be at his
8 desk, Dr. Smergian, just to thank him for his leadership of
9 this committee over the time he served because he served at
10 a time when we really got to the meat of the first generation
11 and it took a lot of perseverance to get through this process
12 which was new to NIST and certainly new to the Federal
13 Government but he did a great job and I hope if he's out there
14 listening that he understands our great appreciation for the
15 work that he did.

16 I would like to talk just a few minutes about this next
17 generation and some of the information that we have received
18 concerning the time lines just to tell you our particular
19 feelings about that and I want to bring to your attention
20 the written comments of Commissioner Martinez which I think
21 has been distributed because he could not be here today.
22 He has followed the work of the committee very closely and

1 has attended every one of the meetings and his comments are
2 very timely and very important so we want to make sure that
3 you follow them. He talks about the IDV and security issues
4 and we want to bring your attention to that.

5 In your time line you talk about the update to the VPAT,
6 the Voter Verified Paper Audit Trail due in April 2006 and
7 the usability standards in July 2006. I know that we have
8 some election officials on this body who will look at that
9 because it is important to note whenever thing are coming
10 out in an election year, the impact that it may have on state
11 and local election officials and how they deal with it and
12 that if new guidelines are being proposed in an election year
13 and states are going through federal primaries and elections
14 what impact that may have on them they may well attempt to
15 try to institute some of these guidelines in an election year.

16 The vendors may try to meet them but it does have some impact
17 on them and that should be noted.

18 We note that the next iteration of the VVSG, including
19 a substantial reformat of the document is due to be delivered
20 to the AC in July of '07 and recognizing the time period that
21 it took the EAC to go through our Federal Register
22 publications, our 90 period of comments, our hearings that

1 we had, this is likely to take us into the late fall of 2007
2 or early 2008 to adopt these. Again, it's of concern to me
3 and I know members of our commission and our staff of having
4 to do this and come up with something in a presidential
5 election year, certainly so early in an election year. We
6 recognize that if we take the same posture that we're moving
7 towards with the first iteration that there will be an
8 implementation period of perhaps a year or two that there
9 is a time period in there for people to come in compliance
10 with it. Certainly if that time table could be moved up
11 in some way that would be helpful.

12 We have discussed this with NIST and our staff and their
13 staff about releasing components of the next iteration in
14 modules and indeed I think that's contemplated in the time
15 line that has been suggested. That's a good thing because
16 I think it does help people move forward, the vendors move
17 forward, getting some idea of what may be coming out. Also
18 I think it helps us to move forward to adopt these new modules
19 as guidelines and so we just want to encourage that kind of
20 approach because I think the earlier the better. We recognize
21 that financial considerations always come into play and we
22 don't know what our fiscal year 2006 budget will be as you

1 don't know and its likely to be, we'll likely be on a
2 continuing resolution so that might have some effect but we
3 hope that the progress can be continued to be made.

4 Speaking of the budget, the chair and I were with folks
5 in the Office of Management and Budget this week to talk about
6 our 2007 budget and we focused very strongly on the work of
7 NIST that is included in our budget. Specifically it was
8 Five Million Dollars for the 2007 fiscal year and we are
9 hopeful that the administration will be supportive of our
10 request because we know that this money is going to be put
11 to good use by NIST, by the EAC in improving the election
12 process in the United States.

13 Finally, I want to just bring to your attention the
14 international implication of your work. I was at a conference
15 of elections officials a couple of weeks ago in Budapest,
16 Hungary. There were four countries represented and they
17 wanted me to talk about the new way that we are institution
18 standards and guidelines in voting systems in the United
19 States. I talked all about the TGDC. We talked about NIST.

20 I had several folks come up to me and saying "oh, we've been
21 following your work very closely." Some of them mentioned
22 the NIST website, our website and many countries are following

1 our work and actually want to replicate it in their country.
2 Specifically, I had someone from Germany come up to me to
3 tell me how closely they were following these guidelines,
4 these standards because many countries of the world are moving
5 towards electronic voting and the standards that are being
6 set in that area are very important, not just for people in
7 America, but the work that you do has implications worldwide.

8 So, I commend you for that and I just want to make sure that
9 you are aware of that.

10 Thank you for the great work that you are doing. We
11 appreciate it and look forward to continuing this great
12 relationship and building upon it and providing the American
13 voters with the best election system possible. Thank you.

14 MS. DAVIDSON: First of all I'd like to welcome you
15 to Colorado. This is still my home even with moving to D.C.
16 I will return to Colorado, it is home and I do welcome
17 everybody and I know the fellow people here from Colorado.
18 You will find that we are very friendly in the west and I've
19 already had people comment about how friendly the people have
20 been here. Probably some of them will talk your leg off so,
21 be aware.

22 It was a great honor for me to be a part of the TGDC.

1 I want to compliment everybody on the committee for how much
2 work they have done, NIST and the committee members. Nine
3 months is a short period of time to develop what was developed
4 and I really appreciate all the hard work and I know it was
5 hard work for each and every one of you.

6 I also want to say welcome and congratulations to Dr.
7 Jeffrey. I also want to say John, Secretary Gale, I
8 congratulate you. I think you will make a great member of
9 this committee. I have the utmost respect for you and I know
10 that you will continue to do a great job on this committee.

11 So, thank you for serving. It does take time out of your
12 office but it's very important.

13 The other thing I would really like to say, I think by
14 NIST being so open with their process that they have done
15 over, you know, from the very beginning and making sure that
16 people are aware of what's happening with all the telecasts
17 and the information on the NIST website and I think that that
18 transparency is very important in the election process and
19 I can't compliment you enough in always making sure that that
20 approach is taken. I think it's very valuable.

21 I also wanted to say that I'm very interested in, as
22 we move forward, getting the ITA, the lab people that are

1 involved with it, and our standards and advisory committees,
2 involved with these segments as soon as possible because I
3 think that will produce the material out to the final product
4 a lot sooner than what we did last time. I think that having
5 it come in segments we can work a lot faster and that way
6 we are not trying to digest such big documents as we did last
7 time. I think having us become more of a team early on, I
8 think that we could accomplish a great deal by working
9 together and we look forward to seeking your guidance as we
10 go through this. We also look forward to working with NIST
11 and after the 30th of this month setting the standards that
12 we have that's almost ready. It's going to be an exciting
13 time.

14 Again, welcome to Colorado. Thank you very much. I
15 appreciate it and I appreciate all your hard work and thanks
16 everybody for being here. I see some of my fellow workers
17 here and clerks and office staff and so it's very nice to
18 see some friends. Thank you.

19 DR. JEFFREY: As I mentioned at the beginning,
20 Commissioner Martinez was not able to make it today but he
21 did provide some comments I would like to read for the record
22 and then I would like to ask Executive Director Wilkey to

1 make some comments if he would like, as well.

2 I would like to express my sincerest appreciation to
3 all of the members of the Technical Guidelines Development
4 Committee and the staff of the National Institute of Standards
5 and Technology. We have a continued commitment to this
6 important project. I would also like to join my colleagues
7 in extending a warm welcome to Dr. William Jeffrey as the
8 new chairman of the TGDC. So, thank you as well as to
9 Nebraska's Secretary of State, John Gale.

10 The development of performance standards for our
11 nation's voting systems is among the most significant
12 responsibilities of the U.S. Elections Systems Commission.

13 As a result of the tremendous work done by NIST and the TGDC
14 to produce the initial draft recommendations the EAC is poised
15 to soon deliver to the American public the first comprehensive
16 update of voluntary voting system standards since 2002. As
17 you begin the process of deciding where to focus NIST staff
18 and resources in the coming fiscal year for additional work
19 in the area of voting systems standards I respectfully submit
20 the following comments for your consideration.

21 1. Security and Transparency. Earlier this year I
22 stood before this committee and urged that the issue of

1 security of voting systems be a primary focus of any proposed
2 voluntary voting system guidelines. I would like to reiterate
3 that request again today. Significant progress was made in
4 the proposed voluntary voting systems guidelines in
5 addressing several important security concerns including the
6 use of wireless technology in the voting environment and
7 guidelines for voter verified paper audit trails. However,
8 additional work in the area of voting systems security must
9 be address and I support efforts by NIST to develop a
10 comprehensive security testing strategy including the
11 development of Cyber security test methods and conformance
12 test suites, voting systems threat analysis, further
13 development of methods for independent dual verification and
14 better procedures for commercial, off the shelf software
15 testing. Likewise I strongly urge that NIST continue its
16 work in developing the national software reference library
17 as a valuable tool for election administrators in ensuring
18 the integrity of voting system software.

19 2. Human Factors and Privacy. As you know, the
20 proposed VVSG contains significant enhancements regarding
21 human factors and privacy and the EAC has been well served
22 by the important work done in this area. I support efforts

1 by NIST for the developed guidelines pertaining to usability
2 and accessibility including efforts to establish performance
3 benchmarks from the user's perspective and the development
4 of human factors test methods and test suites.

5 3. Time Line for Next Iteration of the VVSG.

6 Finally, as to the issue of when the next iteration of the
7 voluntary voting system guidelines should be delivered to
8 the EAC. I believe that as work is completed in each
9 respective area such as security, human factors, core
10 requirements, etc. that each completed module be transmitted
11 to the EAC. In doing so the EAC can then immediately consider
12 whether to commence the public comment and review period for
13 that particular module and ultimately can insure that any
14 future changes or modifications to the voluntary voting
15 system guidelines are accomplished with minimal disruption
16 to the election community.

17 In closing allow me to reiterate my personal commitment
18 to fulfilling the promise of the Help America Vote Act of
19 2002 to improve the process of election administration. I
20 am proud to work as a partner with both NIST and the TGDC
21 in ensuring that the American public has full confidence in
22 the integrity, accuracy and fairness of our electoral process.

1 I thank you for your selfless commitment to this important
2 endeavor.

3 We certainly thank him for his comments on these
4 important things.

5 With that I would like to welcome Tom Wilkey. If you
6 would like to make some comments. Tom Wilkey is the Executive
7 Director of the EAC.

8 MR. WILKEY: I know I'll be back a little later in
9 the program to talk about - I see Barbara and Mark going,
10 oh, he's not supposed to be - but I will be back a little
11 later in the program...

12 **(END OF AUDIOTAPE 1, SIDE A)**

13 * * * * *

14 **(START OF AUDIOTAPE 1, SIDE B)**

15 ...the work that Kenasaw (sic) is doing with our comments
16 and also a little update on what we're doing with our
17 certification program. I would be remiss if I did not joint
18 the chorus of those of us from the EAC I welcoming you, Dr.
19 Jeffrey. Congratulations on both your appointment as
20 Director of NIST and as Chair of the TGDC. We certainly look
21 forward to working with you. Of course, my good friend, John
22 - Secretary John Gale of Nebraska, I know you are going to

1 do a marvelous job on this committee just as you do a marvelous
2 job for the State of Nebraska.

3 This morning when I was getting ready to come over here
4 I happen to think that twenty years ago almost this month,
5 Brian Hancock will remind me, we sat in a room at the Federal
6 Election Commission, about thirty of us, to begin the drafting
7 of the 1990 voting systems standards. It was a five year
8 process. So I know first hand the kind of work that you have
9 been called upon to do and I salute you for that work. I
10 congratulate you for that work. I know it has been a difficult
11 process particularly given the time frame of that nine months
12 of good solid hard work. I am in awe of what it took for
13 years for us to do and the work that you were able to accomplish
14 in nine months. Of course, we didn't have NIST and we didn't
15 certainly have the level of fund that, thank God, that we
16 have. I think that's very important to recognize.

17 I want to echo also the comments made by my commissioners
18 and of myself that we are very pleased with the kind of working
19 relationship that we have with the staff at NIST, Mark and
20 Barbara and Alan and all of the others. You have formed a
21 good partnership and I am sure that whatever little bumps
22 in the road we find or any other questions that may arise,

1 we certainly, at the staff level, have formed the kind of
2 relationship that we are going to be able to work it out.

3 I do believe and echo Commissioner Martinez's comments and
4 other that we are hopeful that we can find a way to streamline
5 this process. We've often said that this is a living,
6 breathing document. Its going to go on for a long time and
7 we need to be able to work out a process where we, when a
8 module is done or when an iteration is done, that we get it
9 out the door so that we are not, as Commissioner Davidson
10 pointed out, asking our respective advisory boards to look
11 at a huge document. That takes up a lot of time and I think
12 that there are certainly ways that we can work toward
13 streamlining that process for the good of everyone. So, I
14 look forward to being back with you in a few minutes to go
15 over a couple of other things. I do, again, congratulate
16 you for the work and tell you personally what a privilege
17 it is to work with all of you. Thank you.

18 DR. JEFFREY: (undecipherable) if you would like to
19 say a few words.

20 FEMALE SPEAKER 5: Dr. Jeffrey I would like to defer
21 (undecipherable).

22 DR. JEFFREY: Okay. Thank you very much. At this

1 time I would like to call on Mark Skall of NIST to review
2 NIST summary of activities since April of 2005, a report on
3 the related voting research recommendation efforts and update
4 the committee on the upcoming NIST threat analysis for voting
5 systems workshop.

6 MR. SKALL: Thank you Dr. Jeffrey. Is this on? I would
7 like to echo the comments that the Commissioners and Mr.
8 Wilkey made. I often speak about standards and testing and
9 describe the relationship among standards, testing and
10 implementation as a three legged stool. You need a standard,
11 you need an implementation of the standards, and you need
12 tests. If any leg of that stool fails the stool keels over
13 and I think there's a similar parallel in the relationship
14 among the EAC, NIST and the TDGC. I think all three parties
15 are partners. They are a second three legged stool and they
16 are clearly all necessary to complete what we have to do.
17 I am proud of the relationship where we can really speak
18 honestly with each other and move on.

19 So, now I would like to speak about the summary of events
20 since the last TGDC meeting. When we were last gathered
21 together on April 20 and 21, we had delivered at NIST the
22 work project to the TGDC. At that meeting NIST was directed

1 to make final edits and deliver the final VVSG to the EAC.
2 We made the changes according to the resolutions. We also
3 reformatted the document. A tremendous amount of thanks to
4 Whitney Quesenberry who helped us. In her real life she's
5 a usability professional. She was very valuable to us in
6 making the document more usable. So we did reformat the
7 document and made it more readable and delivered the version
8 to the EAC on May 9, within the nine month statutory
9 requirements of HAVA.

10 Since that time we at NIST and some members of the TGDC
11 have been fairly active in working with various communities
12 that were reviewing the document. There was an advisory board
13 meeting that we sent John Cogeni (sic), who is our esteemed
14 contractor, ex-NIST employee, to attend to help answer
15 questions and clarify issues. The standards board meeting
16 in Denver that many of us participated in. I made a brief
17 presentation at that meeting to the executive board and to
18 the plenary, just sort of an overall, high level summary of
19 what we have accomplished to date. There were then detailed
20 briefings made to three various subgroups of that meeting,
21 human factors and privacy where Sharon Wiskowski (sic) and
22 Whitney presented the work we had been doing, security and

1 transparency, Ron Rivest and John Waft (sic) made the
2 presentations there, and core requirements and testing, David
3 Flater (sic) and Dan Schutzer. These presentations were
4 actually made parallel sessions, repeated three different
5 times so the standards board was broken up into three chunks.

6 We got some tremendous insight, I think, from the standards
7 board and I really appreciated the opportunity to meet with
8 the secretaries. I think they bring a tremendous insight
9 that we really need. In fact, we have talked about how to
10 include the secretaries to a greater degree, perhaps inviting
11 them out to NIST to get their feedback on the next iteration
12 much earlier in the process. Perhaps piggyback with a meeting
13 they are having, so we really would like to do that and utilize
14 the skills and insight they have.

15 Later on in the summer we made some presentations at
16 the NAST conference, the Election Center, and an asset
17 conference. The audiences were primarily election directors,
18 secretaries of state and local officials. Again, we received
19 invaluable feedback, especially on the VPAT issue.

20 We have also been conducting other outreach. I mentioned
21 before we would like to include the secretaries to a greater
22 degree in this next iteration. Some of the commissioners

1 spoke about including the test lab. I believe we need to
2 bring them early on in the process, get their comments on
3 what we are doing as well as the vendors. I think those are
4 three valuable sets of insight that we need to use.

5 To be frank in the first iteration we were really
6 constrained by time and didn't really have enough time to
7 do some of the outreach we would have liked to do. We really
8 feel we absolutely need to do that in this next iteration.

9 Some of the other areas where we are doing outreach. There
10 was an NSF grant to Johns Hopkins University that many of
11 you, I'm sure, have heard about for improving the reliability
12 and trustworthiness of voting technology. Although that's
13 not a standards oriented effort, much of the research they
14 are doing we believe overlaps what we are doing especially
15 on IDV entrusted models so we have gotten in touch with them
16 and we plan on establishing a strongly liaison with them.

17 We are going to actually participate in that kick off meeting
18 as well.

19 The State of Maryland is undergoing an independent
20 verification study where we are liaising with them. They
21 are looking at add on technology to existing Diebold DREs,
22 looking at providing a second verified record so, again, very

1 pertinent to the work that we are doing.

2 We are having a threat analysis workshop at NIST. We
3 believe this is a really key event. We are writing
4 requirements, security requirements and others, right now
5 we are talking about security requirements for a guideline
6 and it's very difficult to write requirements unless you know
7 what the problem is. In fact, I would say it's impossible.

8 This is really a way to further elucidate and enumerate the
9 exact types of threats that a community perceives. We want
10 to get everyone together. We've invited the public to try
11 to document the types of threats that are out there. Look
12 at possible remedies to the threats and try to assign at least
13 some vague probability that these threats will actually occur,
14 which we feel is also very important. The remedies may be
15 time consuming. They may be very expensive. So, we really
16 need to get a handle on not only the types of threats but
17 the probabilities.

18 There is also a GAO report that's coming out soon. The
19 GAO is releasing a report on voting system technologies.
20 They interviewed by NIST and the EAC and that will be coming
21 out, I believe, in the next few weeks.

22 Just a few words now about why we are really year - to

1 talk about the next iteration of these guidelines. July 8
2 we met with the EAC staff to actually have a kickoff meeting
3 with them and TGDC subgroup chairs were present as well, Ron,
4 Whitney and Dan. We just wanted to make sure we were all
5 on the same page. Again, the three legged stool. We wanted
6 to all work together. We agreed, first of all this may seem
7 obvious, but we were all in tremendous agreement that, even
8 though we had delivered the first iteration, there was a lot
9 more work to be done and we needed to progress and move on
10 to the next iteration of the guidelines. We also decided
11 that the two year window that's in the EAC version, I guess
12 Tom will talk about some of the changes that the EAC made
13 to the TGDC version. One of the changes was a twenty-four
14 month window before the standards would be effective. I guess
15 that's not yet set in concrete. They have to go through the
16 public comment phase. We wanted to find a way to make sure
17 that the work we do is incorporated into whatever standard
18 we produce so the community could use it as soon as possible
19 and we came upon this philosophy of providing sort of
20 candidate chunks, we call them, to swap into the existing
21 standard. Just one caveat, this sounds great and we would
22 like to do it and we will do it, but we have to be careful

1 that we put things in that aren't going to break other parts
2 of the standard. When you make changes to a standard you
3 have to be sure you are consistent. We have to look very
4 carefully but we do believe we can swap modules in such as
5 VVPAT and IDV and human factors work. That is our plan.

6 Again, the tentative agreement was to use July 7, 2007
7 as our final date. I know there is some concern with that
8 date and we can certainly look at that but that was our initial
9 thought.

10 The subject of internet voting came up. I know the EAC
11 has some responsibilities dictated by HAVA on that and we
12 felt that could be handled best by bringing that up at this
13 meeting, seeing what the TGDC role might be in that, if any,
14 and letting the TGDC provide some comments on the internet
15 voting issue as well.

16 We have developed and submitted to the TGDC an outline
17 for the next iteration of the VVSG and a time line.

18 So, that's basically been our summer vacation and I would
19 like to entertain any questions.

20 MALE SPEAKER 8: I have a question. Could you clarify
21 how the chunks and July 2007 tie together?

22 MR. SKALL: Yeah. The July 2007 date is the final date

1 when the next iteration will be complete. The chunks are
2 an attempt to affect the existing VVSG that will be in place
3 prior to 2007 and updated when we have done our research and
4 completed our requirements. So we will swap, when feasible,
5 into the existing VVSG these chunks. They will then be
6 incorporated with other new material into the final next
7 iteration in 2007.

8 Are there any other questions?

9 MALE SPEAKER 9: Yes. Mark, I think we've got two
10 diametrically opposed ideas on the table here. One of them
11 seems to be bringing out some major new work product by July
12 2007. The other idea is basically rolling out revisions to
13 the existing product in a reasonable time as those ideas are
14 vetted out and mature and I'm kind of disturbed by the
15 continuing reference to 2007. I think we need to be looking
16 at a process where almost immediately we could publish perhaps
17 revisions to the last work product dealing with what we
18 actually know now about security, about usability, about
19 accessibility and continue, as we go through time, to bring
20 out revisions to those areas as we develop new knowledge.
21 I'm just afraid that if we put this 2007 date out there,
22 it's going to be another one of those where we are going to

1 gather up all the horses and chariots and race to that date
2 and everybody is going to sit back and say, hey the work is
3 done. We made our deadline and totally miss the point that
4 Tom Wilkey made which is this has to be a living work product.

5 MR. SKALL: Yeah, let me just, and I would certainly like
6 to hear from the TGDC especially some of the people who have
7 had some experience with standards. We've worked with a lot
8 of standards committees over the years and there are
9 conflicting goals here. You do want to update and include
10 new information. Of course, when you have a standard that
11 continually changes you have a moving target and it's very
12 difficult to get implementation, to get tasks, when the
13 standard keeps changing. So, there's really a trade off,
14 I think, between how often one can update the standard. That's
15 why most standards committees have a multiple year cycle
16 before they do updates. Yes, in a perfect world it would
17 be great to get new information out there but the stability
18 of the standard is certainly an issue as well. So, I would
19 like to hear from some other people who have had experience
20 with those issues.

21 MALE SPEAKER 10: At this time I will make a couple
22 of comments. I think as we consider this work there is a

1 couple of items we want to think through and one is, well,
2 certainly we will want to get new material out. We also don't
3 want to create too much churn in the system. Ultimately it's
4 what happens with what's delivered and used in the field is
5 of utmost concern. We want to make sure that test labs in
6 the certification process has time to take in new requirements
7 and that we have a time to get the feedback to make sure that
8 the intent is actually being realized in practice. For those
9 kinds of reasons typically I think these processes are managed
10 in phases so that you have the opportunity to take in feedback
11 and make sure that the last thing that you did is actually
12 delivering the intended benefit and then as you introduce
13 new materials, you allow the whole system to digest how that
14 set of requirements are tested and how equipment is designed
15 to them and all of those kinds of nuances.

16 MALE SPEAKER 10: If I may again, Mark.

17 MR. SKALL: You could also ask for members to identify
18 themselves, again, for the Webcast.

19 MR. CRAFT: Okay. This is Paul Craft. The real world
20 of what's going to happen is as we roll out the current edition
21 of the standards and as the labs and the users of the systems
22 try to apply them is we are very quickly as we certify the

1 standards are going to find pieces as you are well aware that
2 are not measurable, that have no basis for test. Pieces we
3 are going to discover that are clearly in error and there
4 will be a panic call from the test lab that's encountered
5 it and either this committee or some other committee seated
6 by the EAC is going to have to meet with those labs, make
7 decisions on the issues and make recommendations for upgrades
8 to the standards reflecting those decisions. I think
9 designing that process and implementing that needs to take
10 precedence over, once again, some date in the future for a
11 major module to roll out.

12 MR. SKALL: Yeah. I would agree. I think we are talking
13 about two separate things here. We are talking about updating
14 a standard based on errors and there needs to be a process.
15 We are very much involved in many areas in developing test
16 suites. Test suites very often find errors in the standard
17 because you have to interpret the words. You find errors
18 usually in good standards organizations always a feedback
19 process to do that update and to officially correct the errors
20 and put it out. That's something that I agree with you one
21 hundred percent has to be done.

22 The second issue is providing new functionality which

1 is really a different issue because it sets a different
2 yardstick for the implementers. They both have to be done
3 and they are both treated a little bit differently as far
4 as how you phase them in.

5 MALE SPEAKER 11: Mr. Chairman. Thank you. Thank
6 you Mark and Paul. I think this discussion is beginning to
7 lead us to where this group might anticipate us unfolding.
8 I would like to make a kind of global statement and get us
9 back to the action, Mr. Chairman.

10 Starting with the Commissioners' comments that we are
11 creating things that have never been done before in the area
12 of elections. So, the path doesn't have a whole lot of road
13 signs on it. At the same time with standards and in my
14 experience with the access board it does take a long time
15 in our public system of creating standards and rules and
16 guidelines that are then enforceable. We have at the close
17 of business tomorrow and for '06 are really our first attempt
18 down this road of National Standards for the voting systems.

19 As Paul mentioned, there will be need for clarity, for
20 modification and so forth for this first round as we move
21 forward. The access board between 1992 and 2004 had what
22 you might call, some supplementary clarity items along the

1 way. So, using an 07 date for perhaps the second formal
2 iteration of National Guidelines could be an appropriate
3 target perhaps. In the meantime creating a methodology or
4 process that allows us to learn from 06 and to learn from
5 07 kind of state issues to incorporate them into future 08
6 and 10 National elections I think would be very prudent for
7 this group to be able to respond to what we've learned from
8 our election officials and from, you know, the citizen who
9 is actually participating in the voting process. Thank you
10 Mr. Chairman.

11 MS. QUESENBERRY: I guess I would like to agree with
12 my colleague, J.R. Harding. I think one of the things that
13 we deferred in the first round was being able to create a
14 restructured document that would be more readable, more
15 usable by all the parties who need to use it and I think its
16 important that we be able to start that work and move it
17 forward. That's not going to happen in the scope of a nine
18 month crash to the deadline process. At the same time I agree
19 with everybody who said that we are going to learn things
20 that need to be fixed. I know that in the human factors and
21 privacy arena the work that's ongoing at NIST right now that
22 we hope will produce either additional requirements or

1 clarification of requirements by being able to, for instance,
2 publish the performance benchmarks, being able to add test
3 protocols to the test suite. I know that the whole issue
4 of accessibility and voter verified paper audit trails is
5 a hot one and one that we were able to touch the surface on
6 but we are not able to go deeply into. There are issues of
7 personal assistive technology where there are simply
8 technical issues in thinking about how assistive technology
9 might connect to voting systems that we weren't able to
10 address and all of those are fairly small tight modules that
11 could be fitted into the current draft and then incorporated
12 into the restructured draft in 07. So, I do think it's
13 important that we not put off starting the restructuring work
14 because it will simply never happen if we do. Thank you.

15 DR. JEFFREY: Any other comments or questions?

16 MR. BERGER: I would just like to highlight one item
17 that I think is important especially at this juncture in our
18 contemplations. That is, the standard, while it's a vital
19 tool, is not the only tool at our disposal. Certainly speaking
20 in terms of all who were involved in the election system.
21 We have communications, we have training, we have the testing
22 suites and there's a lot of components to this and I think

1 one of the things we want to consider carefully as we move
2 forward is where do we get the best effect. It may well be
3 that we are finding the standard further on some point is
4 not the most effective way to gain a goal. Training may be
5 more effective, better communication may be more effective,
6 more efficient testing may be a better tool. So, I would just
7 encourage us to consider that we have a tool box in front
8 of us, certainly on this committee where we are most concerned
9 with the standard but that's not the only vehicle.

10 DR. JEFFREY: Any other comments or questions? Okay.
11 Thank you very much Mark. I would like Mr. Tom Wilkey to
12 bounce back on back up here.

13 MALE SPEAKER 12: Mr. Chairman, prior to Tom going
14 into that perhaps at the end of this business you could direct
15 our subcommittee chairmen to think about patches or fixed
16 works for this existing area to help guide us in our labors.

17 DR. JEFFREY: Thank you very much. That's an
18 excellent suggestion. Do you have a specific motion on that?

19 MALE SPEAKER 13: Well, yes. I would move that at
20 the end of today's business that committee chairmen for the
21 TDGC report to the chairman of the TGDC of an action plan
22 for fixes and so forth that we find deficiencies in our current

1 work product.

2 MALE SPEAKER 14: Second.

3 DR. JEFFREY: It's motioned and seconded. Any
4 discussion? Okay. With that Phil would you like to do a
5 vote?

6 MR. GREENE: This is a roll call vote on the motion
7 that was just presented. Williams. Williams not responding.
8 Berger.

9 MR. BERGER: For.

10 MR. GREENE: Berger votes yes. Karmol. Karmol not
11 responding. Craft.

12 MR. CRAFT: Yes.

13 MR. GREENE: Craft votes yes. Gale.

14 MR. GALE: Yes.

15 MR. GREENE: Gale votes yes. Elekes. Elekes not
16 responding. Gannon.

17 MR. GANNON: Yes.

18 MR. GREENE: Gannon votes yes. Harding.

19 MR. HARDING: Yes.

20 MR. GREENE: Harding votes yes. Miller. Miller is
21 not responding. Purcell. Purcell is not responding.
22 Quesenberry.

1 MS. QUESENBERRY: Yes.

2 MR. GREENE: Quesenberry votes yes. Rivest.

3 MR. RIVEST: Yes.

4 MR. GREENE: Rivest votes yes. Schutzer. Schutzer
5 is not responding. Turner Buie.

6 MS. TURNER BUIE: Yes.

7 MR. GREENE: Turner Buie votes yes. Jeffrey.

8 DR. JEFFREY: Yes.

9 MR. GREENE: Jeffrey votes yes.

10 FEMALE SPEAKER 6: We're not getting anyone on the
11 telephone.

12 DR. JEFFREY: Alan, can we get an update on.

13 MR. EUSTIS: I've got an update. For those TGDC
14 members that are participating via the teleconference during
15 the break we will be fixing the technical difficulties. We
16 apologize for that but when we reconvene here at 11:00
17 hopefully, knock on wood; everything will be repaired and
18 fixed.

19 MS. QUESENBERRY: Is it possible to record their
20 votes if they are listening or are they simply not able to
21 hear us at all.

22 MR. EUSTIS: Thank I don't know.

1 MR. GREENE: We had nine votes voting for. I want
2 to clarify something I said earlier. There are fifteen
3 members of the TGDC. We would need a quorum of eight in order
4 to proceed with the meeting. For each vote we would need
5 a majority of those voting which we have had. I don't mean
6 to say we don't need them. We do need their participation
7 but if we have a majority without them, we can proceed with
8 the resolution.

9 In this case we had nine votes yes, zero voting no and
10 six not taking part.

11 DR. JEFFREY: Thank you very much. So, the motion
12 carries. Mr. Wilkey I apologize for that brief interruption.

13 MR. WILKEY: Not a problem. I want to just make a
14 fast comment on the discussion that just ensued. I think
15 during my previous comments we tried to set a tone that our
16 working relationship with the NIST staff is such that, as
17 Mark iterated, by putting these pieces out as they are
18 completed I think it serves the community better by getting
19 some of these things out into the market place and I think
20 that's a decision that the EAC will have to make in
21 consultation with NIST as we move along.

22 Certainly as we get into our certification process at

1 the beginning of the year part of that process will be an
2 appeals process where we will be continually working with
3 NIST in the areas of things that come up through testing and
4 evaluation. What did this piece of the guideline mean and
5 so this is going to be an ongoing process. Certainly we don't
6 want to take away from the fact that there will be in July
7 2007 a reformatted version, not at all. We look forward to
8 that. We also feel that anything we can get out into the
9 market place, if you will, both for our vendors, our ITAs,
10 the election community at large, we would be very well served
11 to do that.

12 Now, to the other two matters that I wanted to discuss
13 with you this morning. One is in the area of our comments
14 process. As Commission DeGregorio mentioned, tomorrow at
15 the close of business is the close of our ninety day comment
16 period on the guidelines. We were very fortunate to be able
17 to obtain the services of Kennesaw State University in Georgia.
18 Meryl King, as chairman there in taking over the whole
19 process of collecting these comments, putting them up on our
20 web site, developing a protocol and a whole structure and
21 I have before me and you have copies. I will make sure that
22 Alan has an electronic copy so he can put it up on the web

1 site with the other documents from this meeting. While I
2 always hate to read directly from a document, I don't want
3 to take away from Meryl's words. He did an excellent job
4 of putting this report together that he delivered to the
5 commission, this past week. I don't want to lose anything
6 and so I will go and take some of the words directly from
7 this document.

8 Their process included comments are posted directly to
9 the web site, www.eac.gov by the author or were submitted
10 by e-mail. Comments were also delivered by fax and also by
11 regular mail. They were posted on the EAC web site by Kennesaw
12 staff immediately. This requires KSU staff to analyze the
13 e-mail contents and post the comments to the appropriate
14 section of the web site. Hard copy documents were processed
15 in similar fashion to the e-mails. By placing all comments
16 on line regardless of their form of submission, the public
17 was able to confirm their comments had been received and
18 posted and that review comments about the VVSG as well as
19 comments about any other comment in the document. Each
20 comment regardless of how it was received and/or posted is
21 assigned a tracking number within the comments system. This
22 tracking system enables us to account for every comment

1 received and its eventual resolution.

2 In addition, there is a twice daily back up of the on
3 line system, hard copies of all comments are made and kept
4 on file within the Kennesaw facility. After a comment is
5 uploaded to the web site it is reviewed and assigned the status
6 of accepted or rejected. As of September 22, 432 comments
7 have been uploaded and posted to the web site. Of these,
8 406 have been accepted for display and 26 have been rejected.
9

10 A breakdown is included in this report. As you can see
11 comments rejected as test comments are those entered by the
12 staff of the EAC and Kennesaw to test a feature of the system
13 as it was being prototyped. Rather than delete these comments
14 we elected to retain them so that we would have a complete
15 accounting of all the comments entered into the system. Of
16 the 11 comments rejected in the general category, it did not
17 address the voting system guidelines or the voting technology.
18 They were simply comments made to the voting system process
19 and not to the guidelines themselves. They tended to be
20 broadly focused statements regarding election outcomes and
21 were not directed to the document as such.

22 Multiple submissions were those in which the author

1 submitted the same comment twice. All comments are retained
2 within the data base but only those that are accepted are
3 displayed to the on line reviewer. Of the 432 comments
4 accepted not all are discrete, single topic submissions nor
5 are they all posted by their authors in the appropriate
6 category. Occasionally the author will bundle several
7 comments into a single submission. This complex comment may
8 address multiple sections of the VWSG. The position of these
9 complex comments result in the total number of comments to
10 be analyzed greater than the total number submitted. To this
11 end we have 442 discrete accepted comments to be analyzed
12 and processed, 468 total comments, 26 rejected, leaves 442.

13 On page two they show a table of the comments to date
14 categorized for the various sections of the VWSG. It shows
15 that the section receiving the most comments is Volume 1,
16 Section 6 - Security. Of these 82 are related to Section
17 6.8 requirements for voter verified paper audit trail which
18 is optional. Many of these redundant.

19 The majority of comments related to Volume 1, Appendix
20 8, the Glossary and are from reviewers who are on the staff
21 at KSU. EAC has requested Kennesaw to further develop the
22 glossary by ensuring that all key terms in the body of the

1 document are included. In addition we have been asked to
2 identify and document terms where definitions vary by
3 jurisdiction. For example, absentee voting, and to ensure
4 that all definitions are in conformance with HAVA and other
5 authoritative sources. Posting these proposed changes in
6 the form of comments allows the public to review and comment
7 on them.

8 To support the efficient resolution and disposition of
9 the comments we have proposed a broad classification scheme
10 that identifies a comment as "non-extensive" or "extensive"
11 and as you see the "non-extensive" comments including
12 spelling and typographical errors, formatting errors,
13 pagination, conforming glossary definitions to authoritative
14 sources and affirming the currency and correctness of
15 references.

16 There are the "extensive" comments which are those that
17 will require more thorough research and may extend in the
18 areas of law and policy. For example, changes from should
19 to shall or shall to should, alteration of scope or the subject
20 under consideration, technical specifications, changes in
21 performance of a component of a voting system. Resolving these
22 comments will require some research and perhaps multiple

1 passes through different reviewers. To control the process
2 of resolving and incorporating comments into the final
3 version of the VVSG, Kennesaw has developed an on line system
4 to enable designated reviewers access to the comments as well
5 as recommendations for resolution. The EAC staff will
6 determine who the reviewers will be. Our prototype assumes
7 and certainly will be Kennesaw staff, NIST personnel and the
8 staff of the EAC. Each change to the Voting System Guidelines
9 that is a result of the processing of a comment will be tracked
10 and including the appropriate sign offs with the final sign
11 off being that of the EAC.

12 In summary Kennesaw has implemented a system that tracks
13 every comment from its origin to its resolution. This
14 resolution will be incorporated into the Voting System
15 Guidelines as submitted incorporated into the guidelines
16 after modification or unused.

17 Finally, we are aware that there are a number of
18 organizations, vendors, some of the ITAs who have not yet
19 commented. We suspect and having gone through other standards
20 processes, I well understand that these comments will come
21 at the eleventh hour. It will not be surprising to us if
22 Saturday morning the number of comments will have doubled.

1 It will take a few days for Kennesaw to go in look at these,
2 get them up on the web site and probably early next week you
3 can see all of them as they are received.

4 I'm very pleased with what Kennesaw has done for us.

5 I think they have done a marvelous job of producing a process
6 whereby everything is transparent, everything can be seen.

7 All of the comments can be reviewed. Now we will begin the
8 laborious task of working with NIST staff and others as we
9 come to a conclusion and hopefully get the final document
10 out the door sometime later in the fall.

11 The other piece I wanted to bring you up to date on and
12 very quickly, is where we are on the voting system
13 qualification and certification program that the EAC is about
14 to undertake. As you know the Help America Vote Act
15 statutorily mandated the EAC in carrying out its duties
16 relating to not only the voluntary voting system guidelines
17 but carrying out the duties related to the testing,
18 certification, decertification and re-certification of
19 voting systems hardware and software, carrying out the duties
20 relating to conducting studies and carrying out other
21 activities relating the Federal elections. We look at
22 our process two fold. First as a national program the primary

1 concern of the EAC is that the system designed has represented
2 in the system submitted for testing meets the requirements
3 of both the present 2002 voting system standards and the VVSG
4 that will come out later this fall. When at some point we
5 decide that goes into effect and that is still under
6 discussion and will be discussed in the comment resolution.

7 Others at the state and local programs the primary concern
8 of our state and local election officials that the units
9 delivered meet and continue to meet the requirements over
10 their useful lifetime. We looked and we were very pleased
11 and I'm glad to be standing next to him right now, the services
12 of Steve Berger who has helped us not only look at developing
13 this program but is working with us presently in developing
14 all of the necessary procedural documents that need to be
15 put in place, all the forms that we will be using and working
16 with us as we move along. As some of you may not know, Steve
17 has had significant experience working with the Federal
18 Communications Commission and we are tailoring some of our
19 processes off of what that Commission has done in the past.
20 We are very grateful to have Steve working with us on this
21 program.

22 As we looked at the key issues for certification, we

1 asked the questions what is the minimally acceptable system?
2 Are the testing labs and the testers in the lab assessors
3 qualified? Will the vendor deliver units within
4 manufacturing tolerances to those tested? How will the
5 election officials know if non-compliant units are delivered
6 and what corrective actions can it take? Will election
7 officials and poll workers use the system as intended? What
8 are the processes, the technical standard establish normative
9 standards which is, right now, the 2002 Voting System
10 Standards, and what will come out as the final VVSB by the
11 EAC? We find and keep the standard current and that is exactly
12 what we were talking about in our earlier discussion. As
13 a living, breathing document, as a document that will be
14 utilized by our test laboratories. It will be needed to,
15 there will be all kinds of additions made as we move along.
16 As we went through our (undecipherable) program over the
17 years and I look at Paul who worked with me closely on that,
18 we know that every time we turned around we saw a piece of
19 the standard and said, now, how did that get there and what
20 does it mean? And we know that no matter how well a document
21 is proposed and accepted and finally adopted, there will
22 always be opportunities for looking at a piece of a standard

1 or guideline and say, now, what exactly did they mean by that
2 and making some necessary changes or corrections to rectify
3 it.

4 Certainly we are working closely with NIST and the NAB
5 lab to the accreditation of laboratories. We have already
6 begun the process of an application process for ITAs and
7 expect to submit to the EAC for accreditation a list of
8 laboratories to be accredited sometime in mid-07. In the
9 meantime, they have grand-fathered the three ITAs that are
10 currently accredited by NACET and as we do our work we are
11 in the process of doing two things. One, taking a look at
12 the present NACET accredited labs, having them reapply,
13 updating their information from when they originally applied
14 to NACET in terms of staff, resources, and other information.
15 We are looking at using a process of utilizing technical
16 reviewers who will review and give recommendations to the
17 EAC. The reviewers will be experts under contract to the
18 EAC. The reviewers will have specialized qualifications in
19 various topics. For example, security and engineering and
20 so on. EAC will perform routine performance evaluations of
21 these reviewers. In terms of the product evaluation, it will
22 be our responsibility to review the test plan, testing and

1 test reports. Witnessing the testing is part of the process
2 and reviewing the test reports and putting the test reports
3 up on our web site for everyone to see. Certainly the process
4 will include interpretations, petitions, appeals and
5 complaints and we are working now to develop all of the
6 procedures in that particular area. We are also looking at
7 the processes for getting clarification, initiating change
8 and redressing grievances. We are in the process right now,
9 as I said earlier, of going through the vendor registration
10 of the three and will be working in that area during the month
11 of October and we hope to have that process up and running
12 by January of 2006 and I will assure the members of the TDGC
13 that as our procedures become available and adopted by the
14 Commission, that they will be transmitted to you for your
15 review and evaluation. Thank you.

16 MALE SPEAKER 15: I have a comment about the comment
17 resolution period. I didn't hear the TDGC mentioned as in
18 the loop for reviewing comments or changes proposed on the
19 basis of those comments. I was wondering if there was
20 something foreseen for us in that regard?

21 MR. WILKEY: Well, I think certainly there will be
22 occasions when we will run into comments that involve, for

1 example, the shoulds or the shalls, or some of the
2 determinations that were made by the TDGC in recommending
3 those issues to us. We will be working with NIST staff.
4 We will also be looking at the record of your discussions
5 to take a look at how those discussions were developed, what
6 come out of them, how the decisions were made. Certainly,
7 if need be, we will be reaching out to the chairs of the
8 subcommittees to get, perhaps, their view of what happened
9 during that discussions. So, I see it as very broad based
10 and certainly for the most part I think we intend to work
11 very closely with the NIST staff and looking at the record
12 as it evolved from your committee in making these decisions.

13 MS. QUESENBERRY: Just a procedural question. I've
14 been through a couple of industry standards committees and
15 in those there is always a process of taking all of the
16 comments and addressing...

17 **(END OF AUDIOTAPE 1, SIDE B)**

18 * * * * *

19 **(START OF AUDIOTAPE 2, SIDE A)**

20 MR. WILKEY: then find a way to post that information,
21 get that information so that its available to everyone.

22 DR. JEFFREY: Any other questions. Thank you very

1 much. We are a few minutes ahead of schedule and what I would
2 like to do is stay on the agenda and actually expand the break
3 so that we reconvene at 11:00. That will also give us a few
4 extra minutes to fix the audio-technical difficulties. Let's
5 meet back here at 11:00 a.m. Thank you very much.

6 **BREAK**

7 DR. JEFFREY: Good morning everyone. If we could take
8 our seats. Just a quick note. We are doing, if you will,
9 a planned "C" workaround this morning. We can work on plan
10 "A" and plan "B".

11 MALE SPEAKER 16: Okay. If everyone will take their
12 seats. We have in this session at the end of the presentation
13 by Ms. Guttman and Mr. Wack, a scheduled vote. I have called
14 the participants on the teleconference, the TGDC members and
15 they have so agreed that at the time of the vote I will then
16 call back in on my cell phone. They are watching the Webcast
17 and they will then provide the vote directly from the cell
18 phone to Mr. Greene and that's how we will record their vote.
19 After lunch we will work on the amplifier issues and see
20 if we can come up with a better solution. At this point they
21 are able to hear and see us through the Webcast and the closed
22 captioning is working as well. So, with that, Mr. Chairman,

1 I hand it back to you.

2 DR. JEFFREY: Okay. Phil, are you going to do another
3 roll call vote so they may be able to respond to the roll
4 call.

5 Okay. First of all for those TDGC members who have
6 experienced the audio difficulty I would like to personally
7 apologize as Director of NIST for this technical difficulty.

8 Hopefully, the afternoon from here on out will run a little
9 bit smoother so that you can hear and participate in these
10 proceedings. With that, Phil.

11 MR. GREENE: I will proceed with the 11:00 roll call.
12 Williams. Do we know if he is not participating at all?
13 Okay. Berger.

14 MR. BERGER: Present.

15 MR. GREENE: Berger is here. Karmol. Karmol is not
16 participating. Craft.

17 MR. CRAFT: Here.

18 MR. GREENE: Mr. Craft is here. Gale.

19 MR. GALE: Gale is here. Elekes. Elekes was with
20 us earlier and we are going to try to work around to confirm
21 his presence. Let me proceed with Gannon.

22 MR. GANNON: Here.

1 MR. GREENE: Gannon is here. Harding.

2 MR. HARDING: Harding is here. Miller. Elekes is here.

3 Miller. I'll come back to that. Purcell.

4 MS. PURCELL: Purcell is here. Quesenberry.

5 MS. QUESENBERRY: Here.

6 MR. GREENE: Quesenberry is here. Rivest.

7 MR. RIVEST: Rivest is here. Schutzer, I believe
8 is not participating today. Turner Buie

9 MS. TURNER BUIE: Here.

10 MR. GREENE: Turner Buie is here. Jeffrey.

11 DR. JEFFREY: Here.

12 MR. GREENE: Jeffrey is here. Trying again for
13 Miller. At the moment not responding. Currently we have
14 eleven members participating.

15 DR. JEFFREY: Thank you very much. At this time I
16 would like to call Mr. John Wack and Ms. Barbara Guttman of
17 NIST to present the preliminary report on the outline and
18 time line strategy which I'm sure will invoke a significant
19 amount of discussion.

20 MR. WACK: I just want to make sure we're on. Okay.
21 Thank you very much. Its always a real pleasure to be able
22 to address you. I want to welcome Secretary Gale first.

1 We've got kind of a two part presentation and we just have
2 half an hour so I'll do my best to be fairly brief.

3 Basically I will talk about pretty much an overview of
4 the ultimate standard that we proposed to you that we would
5 like to write and then Barbara Guttman will come in after
6 me and talk more about, I guess, for lack of a better phrase,
7 the chunking strategy that we have come up with. It sounds
8 like a candy bar but --. The other thing I wanted to say
9 is being from the great state of West Virginia and listening
10 to John Denver's Country Roads Take Me Home about three
11 trillion times, its nice actually to be in his home state
12 where they probably Rocky Mountain High at least that many
13 times.

14 So, lets get right in. These are the topics we are going
15 to be talking about. I'll do the first two and talk about
16 the major organization. Barbara will focus more on the time
17 line.

18 The major changes. We're talking about major changes
19 to the VVSG currently out there on the EAC site as well as
20 the previous versions of the VSS. I'll just go into this
21 briefly. I think that we recognize in looking at all this
22 that for voting systems to be usable, accessible, reliable,

1 have security, that the standard itself has in itself to be
2 very usable. It has to have good requirements but it just
3 has to be very well organized. The requirements have to be
4 directly testable as much as possible. Voting system test
5 labs, vendors, election officials, need to be able to read
6 it. It has to be written in such a way that it can incorporate
7 changes and be modified. In other words, that's what we're
8 proposing here. We are proposing a more usable design to
9 the standard. It will have significantly expanded
10 requirements in the core requirements area, accessibility,
11 usability, security. Getting into it a little bit we are
12 going to talk about the new requirements format.

13 Currently we did some changes with the EAC's VVSG in
14 the requirements format and we will continue along those lines.
15 Requirements will be numbered as they are numbered right
16 now. You will notice that in the EAC VDSG that requirements
17 nesting can get very deep so we've actually been working with
18 some contractors outside of NIST to somehow or other still
19 do the proper nesting in requirements levels that we need
20 to do but at the same time make it easy to find, make it easy
21 to use. I've got a couple of fields here, test reference
22 is basically a field that will point to a corresponding

1 general test method test case that can be used for that
2 requirement. In other words, a test lab can look at a
3 requirement and actually find the associated test page
4 associated with that. If there are any associate procedures
5 that go hand in hand with the requirement, then another field
6 for that, a discussion field basically to provide any further
7 discussion, references, clarification things like that. Then
8 we have kind of a hidden field. We don't plan for this field
9 to be in the ultimate standard but during the development
10 of it we want to have an impact or a justification statement,
11 what impact will that requirement have. I have to apologize
12 that in the document that went out to you that went along
13 with this that field was called "I" and for some reason I
14 changed it to "J". I guess because John begins with a "J"
15 but into the overall organization now, I want to talk about
16 we have five basic documents and whether these will all be
17 one big document or five separate documents we haven't really
18 cast that into concrete at this point.

19 Essentially in overview and I'll provide a slide for
20 each of the following: the overview essentially is an overview,
21 how the standard is to be used, how it will be organized,
22 a roadmap to the other sections, overview of material, any

1 discussion of concepts that may be required, IDV and things
2 of that sort. When I talk about the product standard and
3 standards of data to be provided requirements, those two have
4 the vast majority of requirements there and they will be
5 pointing to the fifth one which is the testing standard.

6 Start with the terminology standard. Perhaps one of
7 the very most important parts of this document is just
8 basically agreeing on terminology and what we're doing is
9 we're going to continue with the glossary work we already
10 have underway and combine that as best we can with current
11 usage of election terms. Just one thing that came up during
12 the standards board meeting was that in the VD path section
13 I had a requirement that basically spoiled electronic records
14 and paper records should be preserved and that cause a lot
15 of confusion and it finally hit me that my use of spoiled
16 in an electronic record was very confusing. How can you
17 actually spoil an electronic record? So, it kind of it me
18 that the terminology standard is something that will be very
19 important.

20 The products standard. This is a fairly lengthy set
21 of requirements and set of sections. In essence I would say
22 that there are many general requirements in this section

1 associated with security, human factors and privacy and core
2 requirements and then there will be other sections in there
3 that will be more organized along the lines of voting activity
4 or voting function, pre-voting, casting count, reporting.

5 I also have a section on independent dual verification.
6 So this is what I'm talking about here. I'm, actually, if
7 you are looking along, its slide 17. The reference model
8 section is really an informative section at that point talking
9 about the process model for voting activity and logic. The
10 role model there is really the role model access control model
11 that we will be using to basically designate access to voting
12 systems.

13 Standards on data to be provided. They are to be provided
14 by vendors and voting system test labs. In essence, basically
15 documentation, reports, public information package,
16 information that has to be provided to the National Software
17 Reference Library, fairly self-explanatory there.

18 The last of the major sections which is the testing
19 standard and basically that will have an introduction to the
20 test methods that we'll be describing. General test methods,
21 testing protocols, test cases and not currently in the time
22 line of VDSG modules, I want to soft pedal that a little bit,

1 we are going to be starting from scratch, really, in terms
2 of security and to a certain extent usability and
3 accessibility so we don't anticipate that we will have all the
4 specific test cases that depend on research to be done at
5 that point. I think, though, that by our projected date of
6 July 2007 we are talking about a testing standard that will
7 still have a fair amount of material fleshed out at that point.

8

9 I have tried to go fairly quickly and when other people
10 such as Dave Flater or Nelson Hastings or Sharon get up and
11 talk about their material they will, of course, talk more
12 about these sections at that point. So, if it's okay with
13 you, what I would like to do is ask Barbara to come up and
14 talk about the chunking strategy and then maybe if you have
15 questions we can both answer. Thank you.

16 MS. GUTTMAN: First I have to thank Paul DeGregorio
17 for giving at least fifty percent of my presentation for me.
18 Thank you, Paul. Mark covered about thirty percent, somewhat
19 overlapping. I won't have a lot of new material for you.

20 Mark talked about the meeting we had this summer with
21 the TGDC subgroup chairs to talk about how do we get where
22 we need to go. A lot of people have raised some of the

1 important issues. There is a lot to do, the need is out there,
2 how do we address short term, long term.

3 We developed a strategy. This strategy we are presenting
4 to you the TGDC, this needs to be your strategy. This is
5 a proposal to you that you need to adopt, modify or reject.

6 I wanted to make that clear, this is, the document that will
7 be delivered in July 2007 if you decide on that date, is a
8 document you are delivered. It will come from the TGDC.

9 So, let me tell you a little bit about it. The first
10 issue was, well, there's a lot of work to be done. You have
11 heard this problem. There's a lot of work to be done but
12 once we get something down if it stands alone, the EAC said
13 can't you deliver it to us early? We thought, well, maybe
14 we could. Maybe we could for some of the sections especially
15 when the usability performance benchmarks are done. They
16 kind of stand alone and that could be delivered. Some of
17 the IDE material also can stand alone. There may be some
18 others. There is some material that can't stand alone, that
19 if you change one part, you have to change a zillion other
20 things somewhere else in the standard and they will have to
21 wait until the restructured version comes out. If we can,
22 as we develop our work product, if we see that something can

1 stand by itself would you all feel okay with delivering it.

2 Are you okay with picking a date of July 2007 and are you
3 okay with delivering modules early? I see nodding.

4 Keep in mind the things we are voting on, July 2007 and
5 modules as determined by the subcommittees and the TGDC.

6 I wanted to talk a little bit about how we would do this
7 work. You know having two years is way better than having
8 nine months. Its still not an endlessly long period of time.

9 Its still a very ambitious schedule for the amount of
10 resolutions you all passed in January, quite frankly. So,
11 what we thought we would do is work kind of the way we have
12 been working now. A lot of activity would happen with the
13 subcommittee. They would work and develop chapters, vet them
14 within the subcommittees and send them to the TGDC and every
15 one and then we would have TGDC meetings where we would do
16 the formal, making sure we are on track. There should be
17 no surprises. The subcommittees should have done their work
18 and we have e-mail and the web site to actually have discussion
19 happen so that we don't have to wait for meetings to move
20 things along because it makes it kind of happen slowly. We
21 want to move quickly.

22 The general work plan, part of this answers perhaps a

1 question that Paul asked, which is, or maybe it was Ray
2 Martinez, well, can't you give it to us in 2006? Well, you
3 know what, there's a lot of work to be done and there's a
4 lot of work that's original research. I think this was
5 something that J.R. mentioned too. Some of this work has
6 just never been done before. Its supplying developing
7 technology to voting systems. There's not the research
8 background. So, research has to be done, especially in areas
9 of usability, accessibility and security.

10 This field of IDV, I mean this is something you all
11 invented as a term. Some other groups have been looking at
12 it also in parallel but this is a brand new idea. This is
13 not something that can be just written up in six months.
14 Its going to need time to really think about the ideas, to
15 try some things out, to do a lot of peer review with experts
16 in the field. When you are doing research it just takes some
17 time. Then, of course, one has to do analysis after you do
18 your research to apply the security knowledge to voting, to
19 apply what we have learned in accessibility and usability
20 to voting. Then there is also a period of review and outreach
21 was something Mark talked about that, during the initial
22 period a lot of outreach was done but really a lot more

1 outreach should have been done. That's something we need
2 to do a better job at in round two. We need more peer review
3 for this material. While I would love to tell you we could
4 do it tomorrow given the kind of quality work we want to give
5 you and I know you want good quality, that's what I think
6 we will be doing for two years.

7 Let me talk a little bit about, you all got a time line
8 which I thought was just too ugly to put up on here so I have
9 a sort of brief synopsis of it to show you the kind of pace
10 that would have to be kept by these committees, your
11 subcommittees, if we were going to meet July 2007. I figured
12 that security has to have three chapters a quarter starting
13 in 2006. Perhaps we could get the IDV VVPAC rewritten for
14 April 2006 and maybe the IDV witness by October 2006. The
15 witness is the one that's farthest along after VVPAC to
16 address. For human factors and privacy to draft performance
17 specs by April 2006 and to then complete the whole draft by
18 January 2007. CRT who you will hear a lot about the work
19 they have been doing when Dave Flater and Alan FLATER get
20 up later, I put down some of their major items. These are
21 items from the new outline to draft the performance material
22 by January 2006, workmanship, counting and casting by April

1 2006 and a full draft by October 2006. I put a big emphasis
2 on really having all of the drafts done by January 2007 to
3 give us time to review them. To give us to get good comments
4 in, to give us time to make sure that the pieces that we all
5 thought were working together really do work together the
6 way they are supposed to. There's a lot of overlap between
7 these three subcommittees. They are not that discrete. We
8 have to make sure there is coordination. That's why you might
9 think, well aren't you done by January 2007. There's going
10 to be a lot of work after that.

11 Items in the specific work plan. See, I tend to get
12 ahead of myself. Have a full draft of everything for testing
13 by January 2007, including the overview, the reference models
14 and the data to be provided. I hate it when you mistype and
15 it's a real word. So, we would have all of that together.
16 We will be able to incorporate the comments and get a final
17 document by June 2007 ready for delivery to the EAC and that
18 would include, since Whitney's probably thinking it that
19 would include a usable standard.

20 I'll talk a little bit more about the testing standards
21 John talked about. In testing there's a lot more work that
22 needs to be done in terms of developing test suites. That

1 will come afterwards. So, that said, I would love to have
2 you have some discussion and make sure that these items, the
3 final dates, the outline that John presented, the modules
4 strategy and the general work plan strategy works well for
5 you and, if not, we need to change it and make something that
6 does work well for you.

7 FEMALE SPEAKER 7: Too far from mike to be heard.

8 MS. GUTTMAN: As we finish them we will deliver them.

9 FEMALE SPEAKER 8: Too far from mike to be heard.

10 MS. GUTTMAN: The full testing, except for the full
11 testing because I'm not quite sure how that is going to
12 progress. The testing divides into two categories. You have
13 high level stuff which you are testing, strategy what's your
14 test method, and then actual test suites. In the usability
15 I would expect we would have the full test suite by then too.

16 FEMALE SPEAKER 9: Too far from mike to be heard.

17 MS. GUTTMAN: Yes. That comment is very near and dear
18 to Mark Skall so I'm thinking he will make sure we are there.

19 MALE SPEAKER 17: Too far from mike to be heard.

20 MALE SPEAKER 18: --- that discusses a high level
21 strategy and has references to test cases. So, its an approach
22 that starts at the highest level and goes down. In addition

1 to that you need full test suites to determine whether all
2 the requirements are met, to determine a full amount of
3 security testing as well as usability testing. Those are
4 really separate from the standard. Those aren't part of the
5 standard test suites. We hope to be funded at NIST to do
6 that.

7 A separate issue. The testing part of the standard we
8 really haven't specked out in detail because there are many
9 different ways you can approach it. We fully expect to have
10 a majority of that done, if not all, within this time frame.

11 Depending upon how many test suites that are pointed to
12 that's why it was a little vague. So you have to understand
13 where we are coming from. There will be a lot of work done
14 on testing. I believe that by the time we issue the next
15 iteration, we will be able to issue a testing piece.

16 MR. CRAFT: My concern, Mark, is there's a lot of prior
17 art that's out there now that's really not been published
18 in the current draft of the standards. The existing testing
19 labs and some of us in the States have been testing to the
20 standards for some time. We've got standard test suites that
21 we run. We've got approaches, a lot of which is very valid.
22 The areas of security, system validation, there is some work

1 out there that's not been published which a lot of states
2 could use in the short run. Accessibility. In Florida we've
3 got, and I'm sure other states have similar rules, we've got
4 very specific functional requirements for an audio ballot.

5 We've got very specific layouts for test screen ballots and
6 paper ballots which are intended to make those usable. So,
7 there is what Whitney termed, a lot of low hanging fruit which
8 is good work. It obviously needs more research and it needs
9 to be expanded by July 2007, but I think there's a lot of
10 work product there that could be added to the existing
11 standards in 2006 rather than waiting until July 2007 and
12 come out with everything then.

13 MS. GUTTMAN: I'm not exactly sure what your question
14 is. I think you just offered to help a lot with the testing
15 work. We accept your offer.

16 MR. CRAFT: Okay.

17 MS. GUTTMAN: Your kind offer.

18 MR. CRAFT: Yeah, there's a lot of stuff out there
19 in testing that I think should be brought into the document
20 now. Its good work. There are a lot of standards for usability
21 and accessibility that are more specific than anything in
22 the current standards which ought to be added in the near

1 future.

2 MS. GUTTMAN: Absolutely and as a TGDC member, we are
3 relying on you to help bring that forward.

4 MS. TURNER BUIE: At the end of the day when all the
5 work is done obviously what this committee and everyone wants
6 is for the election officials to be in compliance with the
7 guidelines that, obviously, are voluntary. Today the
8 election officials are working to meet the 2002 standards.
9 When these are completed if its completed with a deliverable
10 on July 2007 and the EAC adopts it in early 2008, and election
11 officials are required or they want to be compliant for the
12 primary and general election of 2008, that will make it
13 extremely difficult, if not impossible for them to meet
14 because when you consider compliance -

15 MS. GUTTMAN: Well, that's an issue that Paul brought
16 up. The EAC will consider what kind of strategy to use for
17 implementation. Like for this round they are going with
18 a two year implementation. They will learn some from this
19 and may revise their strategy but they are very aware that
20 you just can't turn over equipment that fast. That is one
21 reason why we have this focus on transparencies so that there
22 won't be any surprises in the standard when it comes out.

1 What the TGDC is considering will be open and of course there
2 are several vendors in the audience. They will know what's
3 coming so they can start planning now how they are retooling
4 their lines to meet election officials' needs. Yes, the
5 implementation strategy is a very significant issue that I
6 know the EAC spends a lot of time on.

7 MR. GALE: Mr. Chairman, John Gale, Secretary of
8 State of Nebraska. One thing that concerns me about these
9 deadlines is that we've all been running to break the three
10 minute mile over the last couple of years and particularly
11 the EAC and NIST. Everybody, more than doing double duty,
12 is doing triple duty because we have state changes in election
13 law we are trying to accommodate. We have voter registration
14 systems that we are trying to implement. We are trying to
15 accommodate provisional balloting changes and if we have too
16 many ongoing changes in equipment requirements such that the
17 vendors have difficulty with the challenge. Even in Nebraska
18 we have 12,000 virtually volunteers who have to be trained
19 to run these elections, it seems like there's no real good
20 reason to make this so arbitrary that we really can't perform
21 on all the levels that we need to perform to make these
22 elections work. If we over compound the difficulties just

1 to meet an arbitrary deadline, and to throw it into a
2 presidential election year, it seems like we really are
3 compounding the problems for election officials who want to
4 have elections right. They want people to feel comfortable
5 when they come to vote and know that their vote is going to
6 be cast and going to be counted but at the same time, there
7 is only so much in the budget for election officials for
8 training. There is only so much in election official budgets
9 for opportunity to spend time (undecipherable) all these
10 changes and commenting on them. I think it could cause almost
11 a deflation in the election industry because it's a fragile
12 enterprise. Its not like the banking industry or the
13 insurance industry. It's a pretty fragile enterprise with
14 an awful lot of volunteers and a lot of officials with very
15 limited budgets and limited help. I'm a little concerned
16 about the deadline unless there is something in the statutes
17 that mandate it.

18 MS. GUTTMAN: The deadline is one you all can pick
19 because we had a statutory deadline for the first iteration.
20 There is not one for the second. You should feel free, if
21 you want to propose a different one, you may do so.

22 MR. HARDING: Thank you Mr. Chairman and Barbara.

1 I'd like to preface my comment with the big picture. We're
2 changing the game and many people in the disabled community
3 are very afraid of the reality of the budget and the reality
4 of the election officials and are nearly three billion dollars
5 may or may not only be a one time infusion of capital. It
6 is the hope of the disabled community that the EAC, in their
7 wisdom, will set this bar as high as they reasonably can go
8 in terms of the expectations for the 06 because we may never
9 be able to buy equipment again. We could signal to the
10 industry that the expectations for the disability components,
11 the testing and all the other pieces involved that we could
12 get them as far down this road when they are buying now that
13 this equipment can easily be modified, can easily be upgraded
14 without any threats to security, without any threats to
15 peoples' dignity, without any, you know, real heartaches.
16 Having said that, getting back to the outline that you lay
17 before us, I have no particular heartburn with it but I think
18 it gets back to the fact that we are changing this stuff
19 radically but we really only have one checkbook right now.
20 If we don't do very well in 06 the likelihood, considering
21 all the current national issues with rebuilding our America,
22 our checkbook is pretty dry right now. Unless we can show

1 some confidence and a sense of return doing this right on
2 this first round, we are probably not going to ever get any
3 more money. I would like to urge us and our Commissioners
4 to really get that bar as high as we can and that with the
5 module work these could be natural fixes or natural clarity
6 to get us through the little hiccups that we can guarantee
7 to expect in the upcoming elections. On that note, I would
8 strongly encourage all you to get us some of that low hanging
9 fruit, some of this data that's available to us so we can
10 move this thing forward. I would again like to said that,
11 a lot of us are counting on us to do this right now but we
12 don't have a lot of confidence necessarily or, let's say,
13 absolute guarantees that we figured this mousetrap out right.
14 As we move it we need to be able to put the band aid on it
15 without having to disrupt the whole thing for our election
16 people. Those are my only thoughts. If you need a motion
17 coming out of this, that this is a reasonable set of guidelines
18 with the modules which I think we votes on earlier that the
19 subcommittee chairs will be moving some of the little module
20 issue forward, makes good sense. We got to go as high as
21 we possibly can in 06. That's my thoughts.

22 DR. JEFFREY: We will entertain a motion in just a

1 minute on that subject. I would like to see if there is some
2 other general discussion first and then I think there were
3 two issues that would require a vote. One is specifically
4 a motion on the modules and the second is going to be a motion
5 referring to the July 2007 date. So, of course, some generic
6 comments, and then I will move for a motion.

7 MR. BERGER: I would like to first say that I'm
8 supportive of the comments that my colleagues have just made.
9 I share the concerns about the relative fragility of the
10 system and we need to be concerned about the unintended
11 consequence particularly in this system. I certainly share
12 the concerns about inclusion of the entire population and
13 their ability to vote.

14 Let me preface, because I'm afraid I'm going to make
15 life a little more difficult in my comments that my goal is
16 that we look at our resources and we strike the best balance
17 delivering the most benefit we can collectively. There is
18 three issues I would like to bring up and see what comments
19 you may have now but definitely to log them in our
20 deliberations.

21 The first is do we have and will we be gathering data
22 on the correlation of our various specifications and tests

1 to the desired outcome? I'll just say I am somewhat insecure
2 as to exactly where the holes are and equally where things
3 are adequately addressed to the 2002. Equipment that meets
4 exactly the 2002 requirements, what problems are solved and
5 what problems remain. Equally, I think that question very
6 much is before us for the 2005 VVSG when its approved. Are
7 we really addressing current needs or are we continuing to
8 address needs that perhaps have adequately been addressed
9 in previous work. That's the first issue. Make sure that
10 we have some feedback into our work so that we are moving
11 consciously towards higher degrees of correlation between
12 our specifications and testing which are always attractions
13 to a desired end result.

14 The second one is an old lap hound. I'm very concerned
15 overall about our repeatability, uniformity of evaluation.

16 What is our information? What is our judgment that the same
17 equipment coming into different labs will get the same
18 evaluation or even coming into the same lab at different times?

19 I want to make sure that we include that. It's a difficult
20 issue, particularly in some areas of evaluation.

21 The third one I would put out, and I think in your
22 discussion of research you raised it, have we equipped

1 ourselves with a mechanism to raise issues that we may not
2 have the ability yet to even write specifications or perhaps
3 write test cases for? I think it may be important that we
4 be able to afford ourselves the ability to say here's an issue
5 that we think is important. We may not have the ability to
6 specify a solution but we want to alert the vendors that we
7 are looking for solutions. We are looking for good thoughts
8 on the topic and then see what comes. I think this goes to
9 your comments on research.

10 DR. JEFFREY: Are there any more general comments
11 before we go to specific issues?

12 MR. RIVEST: Just a quick comment. I think that the
13 time line as proposed here looks very plausible to me and
14 I think we need to decouple in our thoughts the issue of is
15 this a reasonable time line for the work that's proposed
16 versus, you know, does this time line, how does this time
17 line interface with the rolling out of elections and I look
18 to the EAC commissioners for giving us guidance on the latter
19 matter, particularly in terms of the work proposed and the
20 amount of time allocated for doing it seems quite plausible.

21 MR. GANNON: I just wanted to add, as the specific
22 work plan is being put together that attention would be drawn

1 to the document that was distributed back in June which was
2 the resolution chart of the disposition of resolutions, which
3 ones were put into the VDSG1 and which ones would be addressed
4 in VDSG2. So, as the specific work plans are being put forward
5 care is taken to be sure that we've got each of those
6 resolutions addressed and time is allocated in the work
7 schedules for those to be sure we cover those and we don't
8 get lost in the specific detailed activities.

9 MS. QUESENBERRY: I just want to pick up on something
10 that Mr. Berger said which was not excluding requirements
11 simply because we don't actually know how to do them yet.
12 One of the issues that I've heard come up is the way we
13 structure the document with a kind of high level goals
14 requirements and specific requirements under them. Although
15 I think there is some presentation issue we need to address
16 I think its very important that we continue to structure our
17 work so that we are pointing, that it just doesn't become
18 a laundry list of technical requirements but does, in fact,
19 point toward the goal of improving elections and why these
20 requirements exist toward improving elections especially if
21 we are going to this a little bit piecemeal. We can then
22 say, we are placing this module because we now can address

1 the goals we couldn't address in the past, for example.

2 DR. JEFFREY: With that what I would like to do is,
3 there is clearly two fixed issues. One is what's now called
4 the chunking strategy and the second is the July 2007 work
5 plan.

6 MS. QUESENBERRY: We also need to adopt the outline.

7 DR. JEFFREY: Yes, yes. Let me deal with the chunking
8 strategy. The module strategy, the chunking strategy.
9 Basically any disagreements. From the comments I tended to
10 hear a lot of general consensus with them. Is there any
11 disagreement with the module strategy that was put forward?

12 Can I ask for a unanimous consent? Lets vote on unanimous
13 consent on adopting the chunking strategy. Any disagreement?

14 Let it be noted that by unanimous consent that that's passed.

15 MS. QUESENBERRY: Can we be sure that we are
16 including the people on the phone?

17 MALE SPEAKER 18: I'm on the phone now and waiting
18 to hear their replies.

19 DR. JEFFREY: Okay. Now lets discuss the July 2007
20 issue. If I may make one comment. Based upon some of the
21 discussion this morning by the EAC commissioners it is clear
22 that for us to provide a product that may usefully fall into

1 their time line, July 2007 may not be the optimal time. I
2 guess I would like to actually propose a motion, if I can
3 be so bold, that we basically ask the NIST staff working with
4 the EAC to perhaps come back to us with a proposed time that
5 would meet the needs of the EAC commissioners working
6 backwards to allow the states to adopt and incorporate the
7 technologies as well as being able to have a technically
8 viable product. Is there a second?

9 FEMALE SPEAKER 10: Second.

10 DR. JEFFREY: Is there any discussion?

11 MR. HARDING: When (undecipherable) perfect date for
12 us to have completed the second rendition that we have a
13 reporting time line back to us so that we can then work on
14 module issues as well. I would think it would have an impact
15 there.

16 DR. JEFFREY: Absolutely.

17 MR. HARDING: Maybe two months from now or three month
18 that we are informed when this magical date appears.

19 DR. JEFFREY: Absolutely. I would like to amend so
20 that we get a response back to the committee, to the chairs
21 of the subcommittees within two months. I think within sixty
22 days would be reasonable. If there is any disagreement, if

1 any of the EAC commissioners would like to weigh in on this.
2 I'm essentially tasking the EAC commissioners, please add
3 in any disagreements or consensus. Any other discussion?
4 Is there any disagreement? Otherwise I will go for a unanimous
5 consent.

6 MALE SPEAKER 19: Mr. Chairman, just a point of order.
7 You have a motion now and you have unilaterally modified
8 it.

9 DR. JEFFREY: Oh, I'm sorry. Excuse me. I'm sorry.
10 Is there a second to the modified? Thank you, I apologize.
11 Any discussion on the modified. Phil, could you?

12 Well, I was going to ask you if you could read back what
13 we actually agreed to. The proposal, let's see if I can reword
14 this.

15 FEMALE SPEAKER 10: I said "You propose that the EAC
16 and NIST come up with a new date within sixty days." But
17 there's not much guidance given about just a new date that's
18 better.

19 DR. JEFFREY: A new date that would meet the needs
20 of the EAC commissioners working with the goal of supporting
21 the states as well as being something that is technically
22 supportable by the amount of work necessary. Again, I

1 apologize for the ad hoc nature of this. Is there any
2 questions or discussions on the meaning or intent of the
3 proposal? Okay. With that as a proposal, let me start from
4 scratch. Is there a second to that proposal?

5 MALE SPEAKER 20: Second.

6 DR. JEFFREY: Okay. Any additional discussion? Then
7 I will call for a unanimous consent. Is there unanimous
8 consent on that proposal? Any disagreement? Okay. Great.
9 So any problems on the phone.

10 MALE SPEAKER 18: No.

11 DR. JEFFREY: So moved. In general, given those two
12 proposals that have just gone forward and voted through, the
13 remainder of what was proposed NIST believes that their
14 preliminary report titled "An Outline and Timeline strategy
15 for the next VVSG iterations" responds to all the relevant
16 adopted resolutions by the committee. So, unless there are
17 any supplemental directions or corrections, they are going
18 to continue to march toward the outline that they have
19 proposed and so I would like to have a motion to concur with
20 the outline on modifications to that.

21 MALE SPEAKER 21: So moved.

22 DR. JEFFREY: So moved. Second?

1 MALE SPEAKER 22: Second.

2 DR. JEFFREY: Okay. Any discussion?

3 MALE SPEAKER 23: For clarity, did they put together
4 like a check sheet of sorts of resolutions of the conclusion
5 that the DCSG wants and how it all matched together as to
6 why it increased the confidence in the execution of the actual
7 voting process. Is that a fair summary?

8 MS. GUTTMAN: I think we are moving to just adopt the
9 outline.

10 DR. JEFFREY: Could you put up the actual slide that
11 referred to --. To make it unambiguous lets put up the actual,
12 I think you have two slides that showed the -

13 MS. GUTTMAN: This one.

14 DR. JEFFREY: Okay. So, this is basically the outline
15 that's been proposed.

16 MALE SPEAKER 24: Yes, I am in agreement with the
17 outline. I just was pulling off of Whitney's comments as
18 well as Pat's as the outline related back to our resolution
19 and that we were accounting for the spirit of the globalness
20 of voting.

21 MS. GUTTMAN: Okay. As a separate thing NIST will
22 commit to sending you an updated resolution chart that shows

1 how its mapped in.

2 MALE SPEAKER 24: Correct and that we've accounted
3 for the spirit of the committee. Right. Okay. Because that
4 was a big issue with the advisory committee as what was the
5 intent and the spirit of the TDGC and how did that manifest
6 itself into a living, breathing document and it kind of
7 connects the dots.

8 DR. JEFFREY: So, I would like to propose two
9 resolutions. The first one is on the outline and the second
10 one is to actually have as a task to NIST to provide that.
11 So let me deal with the first one and then we will get to
12 that one. The first one is on the outline. I believe I heard
13 a second early on on adoption of the outline. Is there any
14 disagreement with the proposed outline?

15 MALE SPEAKER 25: I have one question.

16 DR. JEFFREY: Yes, sir.

17 MALE SPEAKER 25: Just one question on the written
18 material. On several places in the technical data package
19 you refer to ISO 9,000. I'm reading that broadly as the family
20 of 9,000 and the current versions of those, is that correct?

21 FEMALE SPEAKER 11: Excuse me, is that what I mean
22 Dave?

1 MR. FLATER: Yes.

2 MALE SPEAKER 25: Okay.

3 DR. JEFFREY: Then I am going to call for a unanimous
4 consent on the adoption of the outline as currently shown
5 on the screen. Is there any disagreement with the adoption
6 of this outline? So moved. I believe there was also a motion
7 on the floor that NIST will, how do you want to characterize
8 this Mr. Harding? That NIST will basically go back to the
9 matrix of both the compliance with the original resolutions
10 for versions one and version two plus the intent of the TGDC
11 and how that maps into the strategy?

12 MR. HARDING: I believe you captured it. Its just
13 a check sheet of sorts of VVSG1 meaning the initial intent
14 or the resolutions guiding our work product and then the
15 inclusion of future resolutions as it relates to our outline
16 to capture the holisticness (sic) of the voting process and
17 the spirit of the DGDC.

18 DR. JEFFREY: Is there a second?

19 FEMALE SPEAKER 12: Second.

20 DR. JEFFREY: Okay. There's a motion and a second.
21 Any discussion? Is there any disagreement with the proposal?
22 This is such a bashful group I wasn't sure.

1 Then without, I'll call for a unanimous consent. Again,
2 without any disagreement with that, the proposal is adopted.
3 Okay. I think you have everything that you had?

4 MS. GUTTMAN: That's everything that I wanted. Thank
5 you.

6 DR. JEFFREY: And more. Okay. So, with that, thank
7 you very much. What I would like to do is do a quick one
8 minute check. We are having, cross our fingers, hoping that
9 we can now get the audio turned back on for our people on
10 the Web cast. We have a lot of feedback. You have to hold
11 your ears. We are going to shut it off and we will continue
12 using the cell phone. So, if we could do a quick audio check.

13 MALE SPEAKER 26: Can the people on the
14 teleconference let us know if they can hear us clearly. Mr.
15 Elekes are you on? Yeah, it's a feedback problem.

16 DR. JEFFREY: Okay. We will continue using the cell
17 phone. Again, my personal apologies as director of NIST to
18 the participants. I understand how frustrating this must
19 be for you.

20 With that at this time I would like to call Dr. Alan
21 FLATER and Dr. David Flater of NIST to present the core
22 requirements and testing subcommittee preliminary reports

1 for the next VVSG.

2 DR. FLATER: I look forward with anticipation to the
3 outcome of the discussion about the deadlines for the next
4 iteration of the VVSG because I'm confused by the discussion
5 that occurred particularly with respect to targeting the 2008
6 election cycle. My understanding was that the EAC has set
7 the affectivity of the VVSG currently under consideration
8 to target the 2008 election cycle. J.R. is shaking his head
9 no. Well, I will look forward to clarification of how we
10 are going to time the --.

11 As you can see we have a long list of things for CRT
12 to discuss. Because timing has been very flexible, whatever
13 I don't get to by 2:15 this afternoon we are simply going
14 to jettison because the other two subcommittees have already
15 been squeezed as much as they possibly can in order to get
16 what they need to say said. So we have ordered this list
17 so that in anticipation of possibly having to jettison
18 something. On the other hand if I finish early there will
19 be great rejoicing because the other subcommittees can use
20 the time.

21 At this point, something we might not get to, Item 8,
22 research papers on VVSG maintenance. I would like to point

1 out that there is a document already in your binder titled,
2 a very short document, titled "Maintenance to VVSG" which
3 is toward the end of the CRT section which gives CRTs already
4 existing recommendations with respect to handling short
5 turnaround interpretations and errata to the VVSG. So I think
6 you have already done that action item.

7 One of the reasons we have so much to cover today has
8 to do with the timing of deliverables for the VVSG that the
9 EAC currently has versus what's been deferred. What appears
10 in the current VVSG from core requirements and testing
11 includes only revised glossary, the beginnings of a
12 conformance clause and some fixes to the mean time between
13 failure testing that appears at the end of volume 2. A great
14 deal of material was in development within CRT for which the
15 deadline has changed several times. What you are seeing right
16 now is a dump of many things that were racing to deadlines
17 that then evaporated. So that's why you have so much material
18 all at one time.

19 The first item I'm going to talk about is standards
20 architecture which is the general term which includes all
21 of the structural changes that we are looking at making to
22 the VVSG. I'm going to talk to three specific points within

1 that profile - compliance, points and implementation
2 statements. The reason we are doing this, in addition to
3 being responsive to some resolutions that the TGDC previously
4 passed is that we see this reorganization as being necessary
5 to improving the precision of the standard, the testability
6 of the requirements and traceability to the standard.

7 Profiles are part of the strategy. One of the
8 definitions of profile that appears in the glossary is "a
9 specialization of a standard for a particular context with
10 constraints and extensions that are specific to that
11 context." This idea is not new. In the 2002 VSF it was called
12 categories. There were separate categories for precinct
13 count versus central count equipment. There were separate
14 categories for paper based versus DRE equipment. These
15 categories were created because different requirements apply
16 depending on which category you are in. Because different
17 activities are performed in conformity assessment depending
18 upon which category of equipment is being examined and because
19 when you are looking to make a reference to the standard,
20 you want to make a traceable reference to the category of
21 equipment that you are talking about. Beginning with this
22 foundation using a more general profiles mechanism, we are

1 expanding this structure to include profiles for the
2 supported voting variations, optional functions, things such
3 as straight party voting which the system may or may not
4 support, different profiles for the different independent
5 dual verification that STS are talking about and other
6 profiles as required as they are discovered.

7 These profiles, the ones that will be so-called standard
8 profiles are listed in the conformance clause which is section
9 4.2 of the long CRT draft that's in your notebook. The
10 profiles mechanism is general enough that states can define
11 their own profiles in a traceable way to the standard. If
12 we have a state that wants the system to conform to the VVSG
13 but wishes to add additional requirements of their own
14 assuming that nothing they add conflicts with the standard
15 there will be a mechanism by which they can define this as
16 a formal extension of the standard and retain traceability
17 to all the requirements that are in the standard.

18 I should mention if there are any questions, please bring
19 them up as I'm going along because if we wait until the end
20 we could be waiting a long time.

21 Compliance points are part of our strategy. Compliance
22 is really just a term that means an identified testable

1 requirement. We won't use this in normal conversation but
2 we use it when we need to distinguish compliance points from
3 other requirements which may or may not be testable. High
4 level requirements which are elaborated by compliance points
5 for testing purposes. In order to get compliance points from
6 what we have now, looking at the 2002 voting systems standards
7 and the VVSG draft, its necessary for us to extricate compound
8 requirements from one another when they have been written
9 as free form test in paragraphs, combining many compliance
10 points in one narrative. Having done that we will add new
11 compliance points to add precision to the standards by clarify
12 the general requirements, the sub-requirements that are
13 either profile or activity specific.

14 Finally, when we do have requirements in the existing
15 spec that are confusing, appear in various places, possibly
16 conflicting with themselves, we will re-factor these into
17 a more straightforward form.

18 The implementation statement. A very basic
19 implementation statement is defined in the current VVSG draft.
20 To this we need to add the notion that a vendor is going
21 to formally identify the profiles to which the system is
22 believed to conform. Having identified these profiles, the

1 test cases and conformity assessment activities that the test
2 labs will use will essentially automatically be identified
3 and finally, assuming that all these activities are completed
4 successfully, a certification the EAC would issue would be
5 only to those profiles that were claimed in the implementation
6 statement.

7 MS. QUESENBERRY: If I may ask a question.

8 MR. FLATER: Yes.

9 MS. QUESENBERRY: I just have a question about the
10 profiles. I'm looking in the draft so I hope I've got this
11 right. They are organized by voting activity, not by voter?

12 MR. FLATER: There is some misunderstanding. There
13 are two major sections of the standard one of which is general
14 requirements and another of which is requirements by activity.
15 Those are not profiles per se. Profiles are listed in section
16 4.2.

17 MS. QUESENBERRY: Right. I'm looking at that in the
18 notebook and I just want to confirm what I'm seeing because
19 I agree with it but I want to make sure that we're not diving
20 off into uncharted territory. The profiles as I see them
21 listed are: Supported Functions, for instance, In-person
22 Voting, Absentee Voting, Ballot Rotation, Cumulative Voting

1 and so on. So those are all profiles by how the election
2 is being conducted not but classifications of voters.

3 MR. FLATER: Well, actually these profiles were
4 meant to represent optional functionality of the voting
5 system. Most of them are going to support in-person voting.

6 MS. QUESENBERRY: Right, but they don't say only
7 people with limited English proficiency, for example. We're
8 not certifying systems by who will end up using them but by
9 what they will do?

10 MR. FLATER: Correct.

11 MS. QUESENBERRY: Okay.

12 MR. FLATER: Now if there are additional
13 requirements - Profiles are general mechanisms and any time
14 that you have categories of requirements that may or may not
15 be supported by a given system, you will create profiles as
16 necessary to segregate those requirements.

17 MR. CRAFT: This is Paul Craft.

18 MR. FLATER: Yes.

19 MR. CRAFT: Is profile a term that we have invented here
20 for this board or just a general work in art?

21 MR. FLATER: Basically what we are talking about for
22 the sake of clarity is optional functions in the system and

1 we are talking about grouping those where we can and setting
2 out specifications for them.

3 The prior art for the use of the work profiles comes
4 primarily from ISA. There is a definition there. It is also
5 used in various other standard organizations to refer to
6 specializations or subsets of a standard. Now, I confess
7 that I have used the word profile in a way that is possibly
8 confusing to some even in the standards community and we are
9 working on clarifying that terminology. No, its not a new
10 word that's just been invented. It is, however, a word that
11 may have been used too broadly.

12 MALE SPEAKER 26: Can you hear me now?

13 MR. FLATER: Try again, please.

14 MALE SPEAKER 26: This is used in many communities,
15 W3C of which we've -- some of the decisions we are making
16 on the new guidelines that we helped co-author get into
17 profiles in tremendous detail but, in general, profiles are,
18 like David says, a subsection of the standard intended for
19 a specific constituency.

20 MS. QUESENBERRY: (undecipherable).

21 MR. FLATER: Functionality as required by the
22 constituency. They are used, they are defined differently

1 in different standards. Typically associated with
2 constituencies but like was just discussed here, that then
3 infers the functionality that that constituency desires.

4 MS. QUESENBERRY: (undecipherable).

5 MALE SPEAKER 27: As an example (undecipherable)
6 which I noted is not currently listed as (undecipherable).

7 MR. FLATER: Well, you could e-mail that to me John.

8 MALE SPEAKER 27: (undecipherable).

9 MS. QUESENBERRY: Well, let me be really clear. I
10 would be perfectly happy to see a profile for an audio ballot
11 but I don't want to see the profile that says its for blind
12 voters. I want to see it for anybody who is using the audio
13 ballot. Maybe saying that that bluntly will clear up the
14 dancing around that I have been doing.

15 MR. FLATER: Well, speaking purely from the
16 perspective of standards architecture, this debate is out
17 of scope from the perspective of the profiles mechanism.
18 I'm perfectly happy to put which ever words that we feel
19 comfortable with but the profiles mechanism simply is a way
20 of categorizing requirements and allowing people to make
21 well-formed references to sets of requirements.

22 MS. QUESENBERRY: I don't disagree with you. I was

1 just trying to inject a sort of corollary discussion which
2 is how are we categorizing systems or how are we categorizing
3 requirements? It doesn't affect the notion that are
4 categorizations but it certainly is something that the
5 committee might want to discuss.

6 MR. FLATER: The strategy that was being followed
7 so far was by functionality of the voting system. In the
8 event that we need to add other kinds of profiles then we
9 will cross that bridge when we come to it.

10 MR. CRAFT: And, as I am understanding it, a little
11 confusion here, but the issue of say an audio ballot which
12 is a general requirement now for all voting systems really
13 would not be a profile. A profile from what I understood
14 would be something such as ballot rotation which is an
15 optional component which a vendor may or may not want to
16 support and which certain jurisdictions would require.
17 Within that profile there would be then standards for that
18 particular profile.

19 MR. FLATER: That is correct. Formally speaking
20 there is an all encompassing profile to which all voting
21 systems conform. So, a requirement like that would be
22 associated with that universal profile. By and large we only

1 define additional profiles where necessary to distinguish
2 requirements that would only apply to certain subsets of
3 voting systems.

4 MR. CRAFT: Well, basically, I guess, the concern
5 and confusion here, I think our exact use of the term profile
6 in the standards needs to be very clearly defined.

7 MR. FLATER: Yes, and this will happen because I have
8 succeeded in confusing some of the other folks at NIST as
9 well. So, --

10 MS. QUESENBERRY: Well, if it confused other
11 scientists I think we should count on a portion of the general
12 public being confused.

13 MALE SPEAKER 28: Just a suggestion, perhaps the use
14 of some examples when we get to issues like this to make it
15 very clear what we mean and what we don't mean might help
16 in facilitating their conversation.

17 MR. FLATER: Well, I actually have a whole slew of
18 extra slides about profiles if we want to take the time to
19 look at them.

20 MALE SPEAKER 28: I think the issue was resolved.
21 It seems to be resolved.

22 MS. QUESENBERRY: I think we're ready, I'm ready to

1 move on.

2 MALE SPEAKER 29: I do have one question. Thinking
3 of the mind set of the test lab that receives an innovative
4 product that perhaps in some way that we did not envision,
5 blends two profiles, do you have some mechanism, say
6 comparable to a technical construction file where the test
7 lab can appropriate develop a test plan blending profiles
8 for an innovative product?

9 MR. FLATER: In fact in those additional materials
10 that I wasn't going to present there is a formal definition
11 of how you derive a new profile from existing profiles. When
12 you do this you end up getting, a profile simultaneously
13 relates to a subset of voting systems and a subset of
14 requirements. When you combine two profiles what you get
15 is the intersection of those sets of voting systems meaning
16 those systems that conform to the requirements in both
17 profiles and you get the union of the requirements.

18 MS. QUESENBERRY: David, perhaps you could circulate
19 those materials just for informative purposes because I do
20 think its important that we understand and have a common
21 language to talk through these issues. This sounds like a
22 very core piece of vocabulary.

1 MR. FLATER: I will certainly do that when -

2 MS. QUESENBERRY:: I think I get it but I'd love not
3 to take committee time to do that but I would love to be able
4 to review those materials.

5 MR. FLATER: I have a few pages that happened after
6 the draft that's included in your notebooks that addresses
7 exactly these issues, gives the formal definitions that I'm
8 talking about and when I'm back in the office I will circulate
9 that to the TGDC list.

10 MS. QUESENBERRY: Thank you so much.

11 MR. FLATER: We are not at 12:11 with lunch scheduled
12 at 12:30. The issue with the standards architecture is
13 sorting out our requirements into testable compliance points
14 will take awhile. The identification referencing and
15 indexing of these compliance points puts a lot of strain on
16 the document production process and also issues with the
17 versioning (sic) of the standard.

18 Presently the nomenclature for referring to different
19 versions of the standard is being driven by the EAC in response
20 to legislative requirements in states that refer to such
21 things as the current version of the voting system standards
22 or what have you. There is also a critical need within the

1 conformity assessment process to be able to make a well-formed
2 reference to the specific version of the standard to which
3 someone is conforming or to which they have been certified.
4 This is another half of this versioning (sic) issue that
5 needs to be worked out.

6 I'm going to move on to software integrity and coding
7 conventions which appears in the blue notes books in sections
8 4.3.1.1 and 4.3.4.101. What we are talking about primarily
9 are requirements on the form, not function, of the source
10 code. However, mixed in with these are some requirements
11 that affect software integrity from the perspective of
12 implementing them as defensive coding practices including
13 error checking, exception handling, prohibitions on
14 practices such as use of "go tos" instead of structured
15 control flow which can increase your chance for blatant
16 software faults. Within this software integrity sub-domain
17 there is an unresolved overlap with STS. In the core
18 requirements subcommittee we looked at these requirements
19 from the perspective of, in general, we want the system to
20 perform as intended. STS is looking at these requirements
21 from the perspective of opportunities for a malicious person
22 to cause the system to perform in a way it was not intended.

1 We end up looking at the same issues in the software so we
2 have to discuss how to integrate our approaches to software
3 integrity. I'll talk more about that in a bit.

4 This also is not new. Beginning in the 1990 voting system
5 standards that were coding, I forget the term that was used
6 in those coding standards, the coding conventions. There
7 was a TGDC resolution that brought these up again. In general,
8 this is something we want to look at to enhance all these
9 desirable ilities (sic) of voting system software. What we
10 have now is a mixture of mandatory and optional requirements.

11 As it stands there are some coding conventions contained
12 in the voting system, VVSG, but its also the case that vendors
13 are allowed to substitute "published, reviewed and industry
14 accepted coding conventions". Now, I don't know how much
15 that's done in practice. In the test reports that I have
16 had the privilege of reading it appears that the conventions
17 that were in the standard were being tested to. So, I don't
18 know to what extent this has been used.

19 MR. HARDING: I'm sorry. Please put in layman's terms
20 what the substitute "published, reviewed and industry
21 accepted coding conventions" means.

22 MR. FLATER: Okay. The conventions that we're

1 talking about are mainly stylistic conventions for source
2 code. If this were English text it would be Strunk and White,
3 if you are familiar with that reference. There is actually
4 an old book on coding style called The Elements of Programming
5 Style. Its sort of a parody of the elements of style from
6 Strunk and White. These conventions by and large are produced
7 not just because we want the code to be pretty but because
8 it gets us this other desirable ilities (sic) starting with
9 readability. Its very easy to make code completely unreadable.
10 Its very difficult to make it so that another person will
11 understand it. From understandability and readability comes
12 these other desirable factors such as errors will be more
13 readily apparent to the reader. So what this phrase refers
14 to is, under the current standards vendors are entitled to
15 use the coding conventions that are in the standard but they
16 are also entitled to use some which are considered published,
17 reviewed and industry accepted. Those terms are not defined
18 in the standard. Its just supposed to be commonsensical.
19 We are looking at coding conventions that the marketplace
20 or whoever finds to be acceptable.

21 MR. CRAFT: I think the example of where this comes into
22 play, J.R., is we had a system come through ITA testing that

1 was using, I think JAVA, for .net and which is not a real
2 commonly used language and they were already coding based
3 on some other industry standards which were not identical
4 to those in voting system standards. They asked to be
5 evaluated on the other industry standards and it was a
6 reasonable standard and that's how they were evaluated.

7 MR. FLATER: So the issues that arise with the coding
8 conventions that are in the NIST standard are, they stem from
9 the simple fact, which is in practice the best coding
10 conventions, the best published, reviewed, and industry
11 accepted ones tend to be language specific. The voting
12 standards want to be language agnostic. There are some
13 conventions that were added in 2002 which are language
14 specific and this possibly made the situation more confusing
15 because these are clearly not applicable to systems that use
16 other programming languages. In addition, some of those
17 environments had probably unintended consequences. I don't
18 have any published information about this but I have
19 antidotally heard about issues such as vendors felt that the
20 prohibition on one character variable names ruled out the
21 Cartesian Coordinate System. They could not refer to x and
22 y coordinates on the computer screen and their display drivers.

1 This is always an issue with coding conventions. If you
2 make a blanket statement you never know what reasonable things
3 you might be ruling out. One of the benefits of using
4 published, reviewed and industry accepted coding conventions
5 is that these issues presumably will have been worked out
6 to a greater extent.

7 MS. QUESENBERRY: David.

8 MR. FLATER: Yes.

9 MS. QUESENBERRY: Might it not be a reasonable
10 strategy to simply review some of those and list them as they
11 are deemed acceptable?

12 MR. FLATER: You mean review, for the committee to
13 review them?

14 MS. QUESENBERRY: No, no, no. For instance you gave
15 us a story about a vendor who requested to have his code
16 reviewed against an industry standard and I presume that
17 standard was looked at and deemed to be acceptable. Why not
18 simply list the industry standards that are deemed
19 acceptable?

20 MR. FLATER: Okay.

21 MS. QUESENBERRY: I don't know, maybe this takes us
22 way too far off track.

1 MR. FLATER: If we wish to maintain that list over
2 time and retire standards as they become obsolete and add
3 new ones as they appear, then, sure, I mean, essentially you
4 are crediting coding conventions. This has not been
5 previously suggested but if we have a Stucky to do this, then
6 yeah.

7 MS. QUESENBERRY: This is certainly out of my area
8 of expertise but you are in effect doing that on a one off
9 basis when you say, yes, we will let one vendor use one.

10 MR. CRAFT: If I may jump in here, David. What we
11 are looking for by imposing a coding standard is to have code
12 that's well documented, that's maintainable, that can be
13 easily edited to make sure that it doesn't have errors in
14 it, and that is reasonably well built. I think any time you
15 build code that actually meets a well thought out standard
16 for that code, you are going to achieve that. I think probably
17 the risks we are fighting against in source code reviews is
18 those vendors who have a lot of ad hoc approaches to building
19 code and you get code where obviously it hasn't been built
20 with a consistent standard and that's when we find variables
21 that aren't properly defined and system errors that bite us
22 when we get in the middle of an election. I'm wondering also,

1 if this doesn't circle back around to profiles and having,
2 you know, basically each language or each language in common
3 use categorized as a profile and then a process for vendors
4 who use either a language or a standard that doesn't fit the
5 established profiles then there is a process for accepting
6 their coding conventions and perhaps retiring them as well.

7 MS. QUESENBERRY: David, we actually jumped ahead
8 of you. You actually define what you think makes an acceptable
9 industry standard.

10 MR. FLATER: Well, sort of.

11 MS. QUESENBERRY: Maybe we should just get you back
12 on track and see if it clears all this up.

13 MR. FLATER: I'll finish this up by lunch.

14 MALE SPEAKER 29: Optimistic.

15 MALE SPEAKER 30: David I would like to ask you a
16 high level question. This approach to qualifying software
17 has a heritage of its own in the voting community. My question
18 is how effectively do you think we have reached out to other
19 communities that have similar concerns for software integrity?
20 Are we on the right track? What's in my mind is we recently
21 watched the software to find radio community which, of course,
22 wants its software to never put the radio in a disallowed

1 state, reach out to the aircraft software which want's to
2 make sure its software never puts the aircraft in a disallowed
3 state. Are we on the best track in the approach we are taking?

4 MR. FLATER: What you are talking about is
5 verification which, I'm going to be talking about later.
6 The coding conventions are one leg of the stool if you will.
7 They get us to a place where we can do verification. The
8 code needs to be readable if we are going to be able to verify.
9 Preferably it will follow some sane, coherent, repeatable
10 structure. My draft suggestion is that we remove, from the
11 standard, all of the conventions that are strictly stylistic
12 and externalize these. The language I used is not so much
13 different from what's in there now. I changed it from
14 published - industry accepted to published credible with a
15 definition for credible which itself is going to be difficult.
16 This is completely compatible with the notion that someone
17 would be accrediting coding conventions. If we want to do
18 that, that's certainly resolves the whole issue of what
19 constitutes credible. If we have a committee that's deciding
20 which ones are credible, then I don't have to write a perfect
21 definition of credible anymore.

22 However to what extent to coding conventions actually

1 address software integrity my proposal was to retain and
2 expand these requirements starting with I-EEE has, making
3 them more explicit for issues such as error and range checking
4 and also adding a requirement for structure exception
5 handling. This is sort of an extension - in 1990 what we
6 had was "go to" considered harmful. I mean this had been
7 carried over from like three years before. If we want code
8 to be of higher integrity in general that we should encourage
9 people to use structured control flow instead of random "go
10 tos". The requirement for structured exception handling
11 takes it one step further saying, one error "go to" is
12 considered harmful. In addition to having our normal control
13 flow being structured, we would like our exceptional control
14 flow to be structured, you know, a language that includes
15 structured exception handling gives us more thorough
16 opportunity to address the requirements that are already in
17 the standard to do good exception handling. I'll be coming
18 back to this as an issue on a future slide.

19 Finally there is the issue of length limits. There was
20 a length limit on modules that appears in the current spec.
21 There was references in the current spec in several places
22 to units as opposed to modules and there has been some

1 controversy about the terminology. The length limits need
2 to be there to keep the voting code verifiable. If you have
3 a module of unlimited length it becomes infinitely complex
4 to verify it. So, by keeping a length limit on the module
5 we try to keep the individual modules to the size where one
6 person can intuit the module.

7 This was my draft definition of credible and I don't
8 like it either. I thought that the best possible outcome
9 was that someone would propose a better definition but perhaps
10 having a committee that instead reviews the coding
11 conventions that are out there would be better than coming
12 up with a good definition of this. However, I don't know
13 who's going to do that.

14 First of all, as I said, the definition of credible is
15 problematic. There is also an overarching issue here about
16 the direction that's been taken in the coding conventions
17 for software integrity. We seem to be well down the road
18 of writing prescriptions for how to write code that has high
19 integrity. Where does this fit in with strategy that the
20 STS subcommittee is looking at for doing security reviews?
21 Could we not have an open ended expert review for software
22 integrity without any particular prescriptions about adding

1 things to the code to maintain integrity? These reviewers
2 would then say well, what you've done here is acceptable or
3 what you've done here is not acceptable.

4 MS. QUESENBERRY: Who's your committee?

5 MR. FLATER: That question I will defer to STS. The
6 compromise that I'm looking at now until otherwise instructed
7 until we have this meeting with STS is that I'm making the
8 prescriptions fairly conservative and on the assumption that
9 this is not going to be the complete picture. These are things
10 that can be easily done when a system is developed to foster
11 high integrity code but the final evaluation will be done
12 by expert review.

13 MALE SPEAKER 30: If I could just support that. I
14 think it's the right attitude that we want to maintain here
15 that these are complimentary approaches. One is sort of low
16 level technical workmanship kind of issues and the other is
17 the high level architectural review for major faults in
18 implementation.

19 MR. FLATER: Very good. The last slide in this
20 subsection. With respect to coding conventions, public
21 comment was received saying that the NASIT technical
22 committee has previously ruled that assembler code is

1 permitted as long as the code meets all other requirements.

2 This raised some questions because if you read the existing
3 standard, assembler code is already permitted everywhere
4 except in tabulation related code. It is understood that
5 you are going to need this for device drivers and things like
6 that. At this point in time I'm not sure what the issue
7 is and I'm hoping to get clarification. Are we talking about
8 assembly language in tabulation code and if we've got that
9 what is the rationale? Why did we need to have that?

10 Finally the structured exception handling issue is very
11 simple. Some people's language of choice is the C programming
12 language and C does not have structured exception handling.

13 We are talking about annoying a group of people here. Those
14 folks who use C are going to have a lot of trouble with this
15 recommendation. I have no trouble with it at all. I'm not
16 sure where to go with that at this point except perhaps a
17 general sense of is the C language something we can afford
18 to annoy?

19 With respect to the requirements having to do with
20 software integrity it seems very unlikely that there isn't
21 prior art having to do with writing high integrity software.

22 We know that there's been some special publications out of

1 NIST that I've look at. We know that there's a lot of prior
2 art in the military. Most of what I've see so far is two
3 dated to be directly applicable. There has to be something
4 out there. So, I look forward to receiving the reference
5 that will allow me to purge all of the software integrity
6 related coding conventions from the VSS and replace it with
7 a reference to prior art that has been much better developed.

8 Its now 12:32 and its lunch time. If there are any final
9 questions we could break for lunch.

10 DR. JEFFREY: Are there any questions on the first
11 two sections of the agenda that he covered which is the
12 standards architecture and the software integrity and coding.
13 Any additional comments, questions? If not, let's reconvene
14 at 1:30. Again, I think for the public, there was a discussion
15 of where some of the restaurants, local restaurants are and
16 for the TGDC I think we are just across the hall.

17 Thank you. See you in one hour.

18 **(END OF AUDIOTAPE 2, SIDE B)**

19 * * * * *

20 **(AUDIOTAPE 3 BLAND, BOTH SIDES)**

21 * * * * *

22 **(START OF AUDIOTAPE 4, SIDE A)**

1 MR. GREENE: Berger is here. Karmol. Karmol not present.
2 Craft.
3 MR. CRAFT: Here.
4 MR. GREENE: Craft is here. Gale
5 MR. GALE: Present.
6 MR. GREENE: Gale is here. Elekes.
7 MALE SPEAKER 31: Can you turn up the thing. Is
8 Elekes there?
9 MR. GREENE: Elekes is here? Gannon.
10 MR. GANNON: Here.
11 MR. GREENE: Gannon is here. Harding.
12 MR. HARDING: Harding is here. Miller. Miller is
13 not responding but we will check back. Purcell. Not
14 responding. Quesenberry.
15 MS. QUESENBERRY: Here.
16 MR. GREENE: QUESENBERRY is here. Rivest.
17 MR. RIVEST: Here.
18 MR. GREENE: Rivest is here. Schutzer not present.
19 Turner Buie.
20 MS. TURNER Buie: Here.
21 MR. GREENE: Turner Buie is here. Jeffrey.
22 DR. JEFFREY: Here.

1 MR. GREENE: Jeffrey is here. We have at least nine
2 with the possibility of three more on the phone. I'll turn
3 it back to you.

4 DR. JEFFREY: Okay. Thank you. David go for it.

5 MR. FLATER: I told my colleague Alan Goldfine that
6 I will finish by 2:00 so that he can have fifteen minutes.
7 I'm going to proceed quickly.

8 Methods for conformity assessment covers a lot of
9 territory. Quite often we simply talk about testing but there
10 is more to it than just testing. There is also the reviews
11 which include these reviews which I have listed here
12 potentially. What I'm going to talk about are two things
13 from this list. First the logic verification and then test
14 protocols.

15 First logic verification which unfortunately presently
16 is spread across several sections because there is a section
17 where it says that the ITA shall do this and there is a section
18 that says the vendor shall do that. That's unfortunate but
19 the important bits, I believe, appear in section 4.52, the
20 logic model. Logic verification is a formal characterization
21 of software behavior within a carefully restricted scope
22 followed by proof that this behavior conforms to specified

1 assertions. The asserts that are of most interest to CRT
2 boil down to the fact that both are reported correctly in
3 all cases. Logic verification compliments testing, what is
4 sometimes called falsification testing as a counterpoint to
5 verification because if you run any set of test cases the
6 most this will tell you is that, in the best case, the behavior
7 is correct in those cases. What we really want to know is
8 will the behavior be correct in all cases? That's where
9 verification comes in.

10 Motivation is a response to a TGDC resolution. Also
11 it provides a higher level of insurance than just doing the
12 functional testing and also this is sort of the other - when
13 we saw the requirements for coding conventions, it was like
14 we were waiting for the other shoe to drop. Surely we are
15 not just sticklers for coding file. There is a reason why
16 we want the code to be readable. The reason is that we want
17 it to be verifiable.

18 Logic verification works, at least in the draft as
19 currently proposed, by having the vendor specify pre and post
20 conditions for each callable unit and a source code, a
21 callable unit is something along the lines of a function
22 procedure method, that level of construct. Vendor approves

1 the assertion regarding tabulation correctness and these
2 proofs are then reviewed by a testing authority who issues
3 findings that if everything is okay, that the pre and post
4 conditions correctly characterized the software and the
5 assertions are satisfied. Issues with doing logic
6 verification include the fact that training is required.
7 You need, I would say, a bachelors degree in computer science
8 to have been exposed to this material. Also verification
9 has a reputation of being onerous. This is because if you
10 try to do it without a limitation on the scope, you very
11 quickly get an impracticable problem. In this case we try
12 to carefully define a scope to cover tabulation. This gives
13 us some assurance that the tabulation logic is correct.
14 However, this does not give us a blanket assurance that the
15 entire system is going to behave the way that we hope. For
16 example, if the user interface has been compromised to turn
17 a yes to a no and a no to a yes, it doesn't matter that the
18 tabulation code counts the noes and the yeses correction
19 because they have already been sabotaged. We are looking
20 to STS and their open ended review to cover those kinds of
21 eventualities. Wow, that was quick. Are there any questions?

22 MALE SPEAKER 31: Which profiles are required to

1 have a verification?

2 MR. FLATER: I believe that all systems will be
3 covered by this.

4 MALE SPEAKER 32: So any system that has tabulation
5 functionality will be required to have a verification?

6 MR. FLATER: And that's all of them. If they don't
7 count votes, I don't think it's a voting system.

8 MALE SPEAKER 33: (undecipherable) systems will
9 come into this?

10 MR. FLATER: Oh, you want to do it that way.

11 MALE SPEAKER 33: Well, a scanner too.

12 MR. BERGER: Basically your election definition
13 system is the part of the system which not only defines the
14 balance but creates the data base in which results are going
15 to be dumped and creates the links between candidate positions
16 on balance and their associated data fields. Even though
17 its not tabulation software, it's a very important part of
18 the system. It certainly should come under this kind of
19 review.

20 MR. FLATER: Agreed that it is, I mean all the parts
21 of the system are important. To get into the details of the
22 scoping, the scope extends from the abstract definition of

1 the contests and candidates through to the reported tallies.
2 Ultimately it is what shows up in the report that you care
3 able.

4 MR. BERGER: Okay. So you are counting all of that
5 in the tabulation.

6 MR. FLATER: That is in scope.

7 MR. BERGER: Okay.

8 MR. FLATER: Okay. I'll proceed to test protocols.
9 Test protocol was a term arrived at after considerable
10 negotiation to describe what might otherwise be called the
11 test suite plus additional infrastructure. What's been
12 bundled under test protocols includes a general test template
13 meaning generally when you are going to execute test case,
14 a testing scenario this is how you do it. There is a certain
15 set up to an initial state. You run the scenario. There
16 are some things you do afterwards and this is how you look
17 at the result.

18 Also general pass criteria. How do you interpret the
19 results and map that onto pass/fail for individual test cases
20 as well as an overall pass/fail verdict for the entire testing
21 campaign? It also includes a collection of testing scenarios
22 with implementation specific behavior parameterized (sic)

1 or abstracted out. That part is unavoidable because we do
2 not have a standard software interface to voting systems.
3 Presently we can abstractly define the testing scenario,
4 this is what we are going to do, we are going to have these
5 contests for these candidates and vote for the following and
6 check the result, it should be this. Lacking a standard
7 interface we can't give you a software program that is going
8 to do this on the voting system. Many of the voting systems,
9 well, all voting systems I think its safe to say, are designed
10 to take input human beings and human beings alone. The idea
11 of automating this testing is basically a non-starter.

12 The collection of test cases that you have in the draft
13 there is sort of a baseline, strawman for just generic core
14 requirements type of testing. This does not cover any of
15 the interests of human factors or security. This is just
16 general functionality type of testing and there is one test
17 scenario there, at least one test scenario, for each of the
18 voting variations listed in the profiles. There is a
19 compromise as we start looking at expanding this test suite
20 that, yes the bigger it gets the more thorough your testing
21 is, on the other hand, the longer and more expensive it is.
22 At some point a decision will have to be made about how big

1 this kind of test suite can get. Its possible at some point
2 that performance based usability testing might be integrated
3 as part of this infrastructure. Motivation for this is being
4 responsive to resolutions about test methods, uniform test
5 method procedures, and also to improve reproducibility in
6 general. If we give a testing protocol that should be followed
7 as part of every certification process, we have improved
8 reproducibility because we at least have confidence that
9 those test cases have been executed, will be executed
10 regardless of which lab a vendor goes to. This does not give
11 us perfect reproducibility but is a step in the right
12 direction. It does not replace, but it augments the
13 implementation dependent white box structure and functional
14 testing that is already specific in the VVSG. This kind of
15 testing, because its implementation dependent, because each
16 test lab working with the vendor is going to be designing
17 a special set of test cases for each system, is not going
18 to be as reproducible. If you do it again you are going to
19 get a different set of test cases, but this testing is
20 necessary nonetheless.

21 Finally, we have the opportunity as we are running this
22 test suite to get a better estimate of error rate and mean

1 time between failure than what we get doing a single catchall
2 test which appears to be what's presently specified. Issues
3 with this, as I discussed, the implementation dependent
4 testing is not made redundant by this. There is still going
5 to be reproducibility issues there but this is a step in the
6 right direction.

7 If we want to test combinations of feature clearly we
8 are not going to have a voting system that only supports in
9 person voting with no extra voting variations. The more
10 different combinations of features you have the larger your
11 test suite has to be to cover these combinations. I think
12 the compromise that we are looking for here is to identify
13 what are the most common of features and make sure that there
14 are test cases to target that combination feature. As with
15 the typical case tests, this is something where we could
16 really use some feedback from election officials to give us
17 more realistic tests that more accurately reflect the usage
18 of the systems in practice and what the systems that they
19 use, what combinations of features that they actually
20 support.

21 There was some discussion at the standards board meeting
22 in Boulder concerns about the mean time between failure

1 testing that's currently done, concerns that would be
2 partially addressed if we made sure that the scenarios used
3 in testing reflect the actual usage of the systems in practice.
4 Questions, comments?

5 MALE SPEAKER 34: I have one question. That issue
6 on getting the typical cases for the testing. Do you have
7 a plan in terms of part of the outreach of how to get those?
8 What's the mechanism by which you are suggesting that those
9 typical test cases get generated?

10 MR. FLATER: I don't see why they couldn't simple
11 submit them as public comments through the NIST website as
12 it is now. It needs to be in the public domain anyway for
13 us to use it. So, why not just submit it through the public
14 process?

15 If there are no further questions on that, I'll go on
16 to -

17 MR. CRAFT: David, I have one comment. Unless we haven't
18 got to it, one thing that seems to be missing here is basically
19 risk assessment and arriving at test plans because we all
20 know testing is a sampling methodology and what we, who have
21 been testing these systems for a number of years did, is take
22 our knowledge of the strengths and weaknesses of particular

1 systems and our knowledge of some of the difficult issues
2 in election administration and, after reviewing the technical
3 data package for a new version of the system, we create pretty
4 much a custom test plan which is based in large part on our
5 assessment of the risk of different aspects in that system.

6 What I seem to see here is perhaps a cookie cutter recipe
7 approach to testing where there is going to be a recipe list
8 of test suites and test scenarios that you will run. I'm
9 not seeing the piece where the labs apply some reasoned
10 judgment in determining which particular test to run on a
11 particular system.

12 MR. FLATER: What you described falls in the category
13 of implementation dependent, white box testing which is
14 currently specified in the VVSG. I'm not proposing to change
15 that in any way except possibly to change the text to clarify
16 it. That is not made redundant by this. What this does is
17 it helps you improve the reproducibility by giving you a
18 baseline set of tests but by no means am I suggesting to
19 eliminate what you just described.

20 MR. CRAFT: Okay because that basically in reviewing for
21 several years now the work product of the ITAs, those are
22 the exceptions that I get where their judgment and as to which

1 test suite is applicable, I wind up not agreeing with for
2 some reason or another. That's an area that I think we
3 actually, probably need to expand as to what the appropriate
4 method is for assessing those risks and for documenting that
5 they have been properly assessed.

6 MR. FLATER: Certainly there is the opportunity to
7 add some informative text about that. As usual, we welcome
8 any contributions.

9 If we are ready I'll go on to casting, counting and
10 reporting requirements. Most of these which appear in the
11 draft that you have before you are derived from requirements
12 in the 2002 voting system standard. What's different is that
13 they have been re-factored to clarify them and reduce
14 redundancy in cases where the same sort of requirements
15 appeared in two or more different places in the VSS. Also,
16 a minor edit but perhaps very important to members of the
17 committee is, I have begun the process of separating election
18 administration concerns and I would like to cite a specific
19 example if I can.

20 This is the 2002 voting system standards, volume 1,
21 section 2.4.2. It says "to activate the ballot all DRE systems
22 shall, among other things, prevent a voter from casting more

1 than one ballot in the same election." Now we might charitably
2 interpret this to mean that while what we mean is that once
3 you've got a card you can only activate the ballot once.
4 The feedback that I have received consistently says that this
5 requirements is enforced procedurally. The voting system
6 does not identify voters. The voting systems knows about
7 ballots. The assignment of ballots to voters is done by the
8 poll workers. Responsibility for enforcing this requirement
9 belongs to poll workers and election officials. So, what
10 I've changed, if this will come up, is now a requirement in
11 the best practices section. It says, "The voting process
12 shall prevent the voter from casting more than one ballot
13 in the same election." The glossary definitions of voting
14 system and voting process are such that voting system is
15 primarily the equipment, documentation and other attachments
16 thereto. The voting process is the big picture including
17 poll worker and the procedures that they perform. We may,
18 ideally, like to dream of a world in which a voting system
19 might be able to enforce such requirements but it seems to
20 be incompatible with privacy requirements and certainly it
21 would not be realistic.

22 MR. CRAFT: Well, David, if I could jump in again. It's

1 Paul Craft for those on the Webcast. What we actually need
2 here, and this is a good case for discussion, what we need
3 is for a voting system to provide support for an election
4 official to set up procedures that would prevent a voter from
5 casting more than one ballot. Examples of that obviously
6 with a marked sense, paper based system the election official
7 can control handing out the ballots. With a DRE or a test
8 screen there has to be a design that will prevent a voter
9 from casting more than one ballot on a single activation of
10 the device. There has to be a design element that allows
11 the election official to control the activation of that device
12 separate from the voter. I agree with you that its an election
13 procedural issue but its something that one way or another
14 the voting system has to give the administrator some tools
15 to execute that procedure.

16 MR. FLATER: I agree completely and its simply a
17 matter of elaborating these requirements and drilling down
18 to what exactly the functional requirements on the system
19 are. In some cases I have already done this. For example,
20 the voting process shall prevent modification of the voter's
21 vote after the ballot is cast. There is a reference here
22 systems conforming to the DRE profile shall prevent

1 modification of the voter's vote after the ballot is cast.
2 The DRE can do this. If you've got a paper based system,
3 I mean, what are you going to do about it? So, these are
4 the kind of requirements - what we need to do is in cases
5 where these have been intermingled in the old standard, we
6 need to separate out the concerns very clearly. I have six
7 minutes.

8 All right, so I was on this slide. We did this, all
9 of this, because we want precise and testable requirements.
10 Significant changes relative to the 2002 VSS requirements
11 are primarily in the reporting section. The reporting
12 requirements were, in some cases, duplicated in the old
13 standard and in some cases, they were vague. I have
14 significantly revised the requirements on the content of
15 reports to try to make it clear what exactly needs to be
16 reported and also, instead of simply having a requirement
17 saying the tally shall be accurate there is now the logic
18 model to give an abstract definition of what that means.

19 With respect to reporting, some of the things that came
20 up there was in the old standard discussion of cast versus
21 counted and there was verbiage in one place that said in the
22 case of paper based systems we have to identify the number

1 of ballots both processed and unprocessable. When you look
2 at this at a higher level we see that there is really three
3 concepts here. Cast, read and counted. In the case of paper
4 ballots you can have a ballot that's cast that is never
5 actually read by the system. Usually because, in fact, it
6 is unprocessable. It won't event go through the scanner or
7 what have you. In the case of DREs it is hard to envision
8 a case where it would be cast but not read unless there was
9 some hideous failure.

10 There was some issue of reporting levels, that there
11 were requirements in the spec about "the system shall support
12 all reporting levels that the state need." They didn't say
13 which state. Looking through the standard there were four
14 different reporting levels that were specifically mentioned.

15 It was by tabulator, by precinct, by election district and
16 by jurisdiction used as a euphemism for state. There is no
17 requirement for generic facility to define arbitrary
18 reporting context or reporting levels. It is permissible for
19 a vendor and I imagine this is what they do to customize the
20 voting system for each customer to provide whichever voting
21 levels they require. What I'm proposing is that what we are
22 going to require for all systems is these four levels and

1 everything else is gravy.

2 Another issue has to do with write in ballots. In systems
3 where we have, where the processing of write in ballots is
4 done manually and possibly not at all if the election isn't
5 even close, that final tally is completely outside the voting
6 system. The question is, in what sense could such a system
7 in that process conform to the write ins profile? It depends
8 on how you define the write ins profile. I would imagine
9 that we are simply going to say in this case the voting system,
10 meaning the equipment, doesn't because it's not counting the
11 write in votes. You could talk about the voting process
12 supporting write ins but really this is being supported
13 procedurally and not by the system.

14 A similar issue has to do with unofficial reports and
15 data. There are some requirements in the standard now about
16 unofficial versus official reports. There was some
17 discussion in Boulder about different requirements, security
18 requirements on unofficial versus official data. It appears
19 to be the case in some jurisdictions that official data equals
20 unofficial data plus somebody's signature. That's outside
21 the voting system too. So, would you like to comment?

22 MR. CRAFT: Well, that was a little superficial. I mean,

1 the difference in unofficial results and official results
2 is basically the extent of review and scrutiny the results
3 have been under. Unofficial results are generally meant to
4 be those results which you take in from the precincts and
5 you publish on election night and different jurisdictions
6 have different standards as to how tightly those results are
7 reviewed before they are released. Obviously you don't want
8 to release results with gross errors in them.

9 Official results are those results after the entire canvas
10 process is through, after your provisional ballots and all
11 of your write in ballots have been through whatever review
12 and appeals process the state sets out for those and in our
13 state, it is a requirement that you actually audit the
14 consolidated results for the county back to the individual
15 precinct report signed by the precinct board and that is the
16 work product which, at the end of that process, the judge
17 and the canvassing board do attach a signature to. Frequently
18 a different result from the unofficial.

19 MR. FLATER: Would you agree that the distinction
20 between official and unofficial data is not a voting system
21 concern?

22 MR. CRAFT: I think it is not a voting system concern.

1 It is an election administrative concern. It is also, though,
2 an area where we are beginning to look to the voting system
3 vendors to provide support for that administrative concern.

4 What I'm looking for in Florida is, as the canvassing board
5 makes those determinations, finds those additional ballots
6 which can now be counted for one legalistic reason or another,
7 then the system has to be configured so those ballots can
8 be added to the automated totals, either manually or by scan.

9 MR. FLATER: Are those provisional ballots?

10 MR. CRAFT: They would be provisional, they would be
11 write ins that have been challenged for some reason, military
12 overseas. They will, in the rare case, be where the canvassing
13 board revisited a precinct and found there were, you know,
14 two or three ballots that had not been scanned for one reason
15 or another. I think its another issue where, yeah, its an
16 election administration issue but its also something the
17 voting system needs to be designed to support.

18 MR. FLATER: Okay. I think we are in a good place
19 then.

20 I'm going to skip the process model and let Alan Goldfine
21 present what he's going to present.

22 MR. GOLDFINE: Are there any last minute questions or

1 discussions for David before he disappears?

2 MALE SPEAKER 35: Good job David. I like the product
3 the way its coming along.

4 MR. GOLDFINE: No, no. he's not allowed out. We are
5 going to lock the doors until the end.

6 I must say that I anticipated being squeezed this way
7 so what I wrote was a high level overview of the remaining
8 half of the CRTs work, pretty much what we've done, what we're
9 doing right now and what we're planning to do. I'm going
10 to be talking about the performance and workmanship
11 requirements in the VVSG, talk about an issues paper that
12 I put together extracting the issues and open questions from
13 the latest work, briefly talk about two earlier research
14 papers that we wrote and about the future work.

15 In terms of the performance and workmanship requirements,
16 this is for both hardware and software David has talked a
17 little bit about the software aspects from the more general
18 hardware and other areas. What we did is, and unlike some
19 of the other areas in developing VVSG, we specifically began
20 with the text from the 2002 VSS. We then extracted or imported
21 relevant requirements from this document. You may remember
22 that the current existing VVSG pretty much took all of the

1 performance and workmanship requirements unchanged from the
2 2002 specs and put that out as part of the current standard.
3 What we are now doing is taking a closer look at these to
4 see what issues there are with them. Are each of these
5 requirements testable? Are there any omissions? Are there
6 any changes in technology that would require additional or
7 changed requirements? Many of these issues were dealt with
8 at some length a few months ago in the analysis tables that
9 were included in the April presentations but which we never
10 got around to actually talking about but it was a major part
11 of that second volume. If you go back and take a look it's
12 a table of all of the requirements in the 2002 VSS along with
13 our initial conclusions as to what to do with them. Now we
14 are actually doing to them what they require.

15 We then took these extracted and to some extent reworded
16 requirements, revised them by looking at the latest draft
17 that I could find of the I-EEE, P1583 spec. They also had
18 the task of looking at these requirements. Made some changes,
19 added a few and we relied, especially in these areas of
20 performance and workmanship, we relied very heavily on the
21 I-EEE, figuring, you know, they are among the great experts
22 in this sort of stuff and borrowed liberally from what they

1 are doing, at least the latest version of what they are doing.

2 These requirements were then reviewed by the NIST team, by
3 CRT and, really for the first time in connection with this
4 meeting, we are presenting it to the TGDC as a whole. These
5 documents included, as a major feature, issues and open
6 questions which were highlighted in green and, you know,
7 represent areas that, you know, at some point, answers are
8 going to have to be made, provided to these questions, whether
9 in this context or in some other context because before too
10 long they will start to hold us up, you know, whether we answer
11 a question this way or that way.

12 We prepared an issues document which is also included
13 in your package highlighting the major issues, you know,
14 rather than the are there any holes here or any other
15 requirements. Those are generic things but specific
16 questions that we have are highlighted there. Through the
17 whole document there are about twenty issues that between
18 David and myself. I'm only going to bring up one of them
19 here. These papers are all on the C.D.

20 One issue that I want to bring up, which is probably,
21 ultimately and EAC determination, but I'm sort of hoping that
22 maybe I could get the sense of the TGDC, is should the VVSG

1 explicitly deal with punch card systems? My reading of HAVA,
2 you know, seems to be that while HAVA doesn't forbid states
3 and really doesn't have the power, but it doesn't forbid
4 states from continuing to use punch card systems in a
5 non-standard way if that's the way they want to go. HAVA
6 does imply that the Federal Government shouldn't support,
7 shouldn't explicitly support the use of punch cards which
8 to me in turn implies that VVSG should not include any
9 requirements for them. There's a little bit of a difference
10 of opinion within the NIST team regarding how to handle this
11 for the foreseeable future since there is no definitive answer.

12 Should we go to the trouble of developing a punch card profile,
13 if you will, in the chance that the final interpretation of
14 HAVA is, yes we do have to cover that area or shouldn't we.

15 I've taken the approach, no, and in the stuff that I've done
16 I've never mentioned punch card systems. Other people and
17 to some extent have taken a different approach. So, I, you
18 know, I don't expect a resolution here but I am curious as
19 to, if there is any time for discussion, what the sense of
20 the committee is, the sense of the TGDC. Does anybody want
21 to quickly say something?

22 MR. CRAFT: Yeah, I'm not going to touch on the legality

1 of punch cards under HAVA because as far as that particular
2 issue I don't have a clue, but if in fact punch card systems
3 are legal under HAVA, then I think there is a really good
4 body of prior art developed by IBM I guess almost fifty years
5 ago, which his still applicable. There are, I think fairly
6 good treatments other than the 2000 voting system standards
7 and then I think we need to go beyond that and look at, okay,
8 now how are we, if we are going to allow punch card systems,
9 do they have to be designed so that they prevent over votes.
10 Do they have to be designed, obviously they have to be
11 designed so they can be blended with an audio ballot component.
12 We have to, I think, put an entire system boundary around
13 those systems as opposed to just having them be a tabulation.

14 MR. GOLDFINE: That's the whole issue. I just
15 mentioned at lunchtime today I heard a rumor which is really
16 all that it is in my mind right now, that the EAC dealt with
17 a somewhat, or has dealt with a somewhat similar issue namely
18 the -

19 MR. CRAFT: Lever action voting machine.

20 MR. GOLDFINE: Yeah, the level machines and so on and
21 did come to some sort of conclusion regarding, which as I
22 understand it, is a negative one. HAVA does not mandate

1 Federal standards for lever machines. I think that they are
2 going to sort of have to deal in a parallel manner with a
3 punch card issue. We need guidance.

4 MS. QUESENBERRY: Well, wouldn't a punch card
5 machine or any other machine have to at least meet all the
6 general requirements?

7 MR. CRAFT: Yeah.

8 MR. GOLDFINE: Yeah but there are plenty of
9 requirements that would then have to be specific for punch
10 card systems and if we don't have to develop those, I would
11 be very happy.

12 MS. QUESENBERRY: I guess what I'm saying is you
13 could cover punch cards by saying they have to meet the general
14 requirements without necessarily having -

15 MR. GOLDFINE: Then you would be doing half a job.

16 MS. QUESENBERRY: Without never having to go into
17 them in detail because they are a (undecipherable) system.

18 MR. GOLDFINE: Then you would have to start defining
19 what a hanging chad is and all that and -

20 MR. CRAFT: No, that's an election administration issue
21 and a legal issue but you do have to define punch card stock,
22 which IBM's done a rather good job of. You do have to define

1 exactly how thick the chad ties at the corner are going to
2 be and a very good job of that was done in the 1990 standards.
3 There is a lot of issues that you haven't brought in but
4 I think there is prior art that covers them.

5 MR. GOLDFINE: So, my intention in the two minutes
6 remaining is to just put it on the floor and let it percolate
7 within the committee, you know, up to the EAC, whose listening
8 and so on and just go on from there.

9 Okay, real briefly, just to mention also in your package
10 are two research papers that we wrote in response to two of
11 the earlier Resolutions 3105 and 3205.

12 The first one, maintenance of the VVSG actually deals
13 with the issue or some of the issues that was brought up by
14 the resolution this morning having to do with interpretations
15 or procedures for interpretations of the standard, resolution
16 of errors discovered in the standard, what happens to, how
17 are implications of discovery of errors handled and so on.

18 There is in fact, I'm pointing out here, a draft research
19 paper that does deal with those issues. It's a strawman that's
20 out there for examination and comment within the committee
21 and so on. I do commend it to your attention in connection
22 with the issues of this morning.

1 The other paper has to do with sharing information
2 regarding certification or decertification of voting systems.
3 The original resolution dealt with sharing of information
4 and decertification. I drafted it, I concentrated, I focused
5 mostly on the procedures and policies regarding sharing of
6 information in general. There are a lot of knotting issues
7 in there as well concerning proprietary information, sharing
8 of information with localities versus sharing of information
9 with the general public. Again, its, you know, a draft out
10 there for comment.

11 Future work for CRT above and beyond anything that can
12 be inferred, continue to develop the existing text, address
13 the comments that we have been receiving in drafts that we
14 have been sending out, putting up on the web, submitted to
15 the TGDC and so on. We have to, at some point, being to add,
16 this has come up before, add informative text to give shape
17 to the normative text which are the actual requirements.
18 From the point of view of subcommittee we have to continue
19 to integrate or do this more thoroughly, integrate with the
20 other two subgroups, security and human factors, the glossary
21 has been pointed out is continually being revised and
22 continually needs to be revised to accommodate new

1 definitions all of the time as they arise. We are, of course,
2 going to have to draft standards on data to be provided.
3 This is all in the time line. Develop logic and accuracy
4 testing procedures as David pointed out and ultimately, of
5 course, draft a testing standard which we've done a little
6 bit of. If you take a look at, for example, David's paper
7 from earlier, probably just enough to give a hint of what
8 some of this stuff is going to look like. That's got to be
9 done for the entire standard as well. And, only two minutes
10 over my time I get to the discussion part. Are there any
11 questions, I guess for either David or myself at this point?

12 DR. JEFFREY: NIST believes that the preceding
13 preliminary report of technical support on core requirements
14 and testing subcommittee preliminary report for the next VVSG
15 iterations responds to the relevant TGDC resolutions and so,
16 basically, unless there are supplemental directions or
17 corrections, the technical support related work product will
18 continue to be developed consistent with this preliminary
19 report. So, are there any questions, further directions or
20 corrections that the TGDC would like to provide? If not,
21 do I hear a motion to adopt the preliminary report?

22 MALE SPEAKER 36: So move.

1 DR. JEFFREY: Is there a second?

2 MALE SPEAKER 37: Second.

3 DR. JEFFREY: Is there any discussion? Okay, without
4 discussion I will ask for a unanimous consent for accepting
5 the preliminary report. Now you can leave.

6 MR. GOLDFINE: Now I can leave. I just want to remind
7 everybody, look at that issues paper because that distills
8 the issues that we, most of the issues that we are actually,
9 currently struggling with and need guidance. The technical
10 issues. Take a look at that and see if you can comment to
11 us, you know, directly, on line, what have you. That would
12 really be -

13 DR. JEFFREY: And I would say that the punch card issue
14 is still sort of hanging out there.

15 MR. GOLDFINE: The punch card is one of them, which
16 is probably the one most easily explained but there are twenty
17 others that need answers.

18 DR. JEFFREY: Okay, thank you, thank you. At this
19 time we have Dr. Sharon Laskowski of NIST to present the human
20 factors and privacy subcommittee preliminary report for the
21 next VVSG iteration.

22 MS. LASKOWSKI: Thank you. My slides are a little dense

1 because I wanted to have stuff, visuals in case there was
2 discussion. Really there are three main items that I want
3 to talk about.

4 First, what have we done so far and why? Second, what
5 is the research currently under way? And third, after the
6 May 9 draft there have been some comments from places like
7 the Standards Board Advisory Board to the EAC so another set
8 of issues has arisen and in particular the one about personal,
9 assistive technology which you also have a white paper in
10 your handouts that discuss. So, I wanted to make sure that
11 we at least get to discussing that issue. I will skip over
12 some points on the slides, as I said, because I just want
13 to emphasize those three main points.

14 As you know, the language in HAVA continues to guide
15 our work. We are concerned about addressing accessibility.
16 We are concerned about how to describe and write guidelines
17 for the accessible voting station. We have addressed
18 alternative language accessibility as well right out of HAVA.
19 There are four key principles that guides our work so far.
20 We need well designed, these are from the resolutions that
21 were passed in January, that we need well designed systems
22 and that are effectively deployed in the polling place.

1 Ballot design and instruction are a critical part of the
2 voting experience. We want to push for all voting machines
3 eventually evolving into having more and more accessibility
4 to more people. Finally we also believe that setting
5 performance rather than design standards encourage
6 innovation and also make the standards simpler and easier
7 to update.

8 There were five additional resolutions that directed
9 our approach and our priorities. Those are accessibility
10 requirements our top priority. We concentrated on accurately
11 capturing indication of a voter's choice. Guidelines for
12 those. That all requirements that involve human interaction
13 has to ensure some basic level of usability, accessibility
14 and privacy. That the standards themselves must be useful.

15 People often look over to Whitney when they talk about
16 writing standards. That we would like to establish
17 performance benchmarks for usability. We have made some
18 critical decision in our work. We focused primarily on the
19 equipment itself in that first phase as opposed to looking
20 at, for example, ballot design, things that are specific to
21 an election. We also kept in mind that requirements need
22 to be testable although you will see and this has caused some

1 confusion and I think it calls to the usability of the standard.

2 We have the standard as written as a tree so that there are
3 high level goal statements and under those goal statements,
4 if you look down the tree to those guidelines that have the
5 longest set of numbers in the outline, those bottom level
6 are the testable requirements. I think we are going to revisit
7 how to present that and how to explain that so it become
8 clearer to more people because some confusion has arising
9 as to a goal statement not being testable and the leaves
10 underneath that tree are testable.

11 I've already talked about performance versus design
12 guidelines. We also recognize that the environment that a
13 system is deployed and is also critical to usability and
14 accessibility and we also said there are some shoulds in the
15 requirements that we expect will migrate to mandatory shall
16 statements but we felt that the current technology didn't
17 quite support that yet so this was a placeholder and to put
18 vendors and the voters on notice that eventually these will
19 be mandatory requirements.

20 So, in summary, the current VVSG we updated and enhanced.
21 Accessibility in section 2.27 we added limited English
22 proficiency requirements. We updated enhanced and promoted

1 from an appendix many usability guidelines. We added privacy
2 requirements. We also added some other elements like
3 recommending (undecipherable) usability testing. We worked
4 to clarify some ambiguous requirements. We also advised on
5 the VVPAT section and included some human factors guidelines
6 there as well. That's the first part of my talk. Discussion?
7 Everyone's nodding. That's just the outline just to refresh
8 your memories, accessibility, usability, alternative
9 languages and privacy.

10 Current research underway to further address the
11 resolutions that I discussed in the future WVSG. Primarily
12 our biggest effort is to develop some usability test protocols
13 and identify some usability performance benchmarks and what
14 those metrics to measure benchmarks that we expect to be
15 reproducible and repeatable testing. Putting together a set
16 of plain language guidelines for clear ballot wording,
17 instructions, error messages to the voters and poll workers,
18 eventually documentation. Guidance on good ballot design.
19 Guidance for interaction design. Interaction design
20 primarily on the DRE, we've got to navigate through either
21 with next buttons or whatever through the ballot. That's
22 interaction design. Usability of the standards. We are

1 further refining accessibility based on ongoing research and
2 feedback. The development of test methods. That's the second
3 part of the talk, the current research focus that is ongoing
4 now. Any questions or comments about that? Okay, the third
5 part.

6 Various advocacy groups and particularly the advisory
7 board and standards board have pointed out additional issues
8 in the draft VVSG. Primarily the deal with accessibility.

9 A number of them can be addressed fairly easily. We'll do
10 a little background work and write up a paragraph or two
11 clarifying for the most part but there are some that require
12 some thoughtful research on possible solutions and developing
13 some sort of guiding philosophy to the approach that would
14 guide what those guidelines should look like to address those
15 concerns. I've listed the main issues that are causing some
16 debate in the community.

17 The big one that I wanted to talk about and I have a
18 number of slide on, is should the voters be able to connect
19 their personal assistive technology to the voting station.

20 I'm going to go through the list and I'm going to come back
21 to that so we can go through the six slides on that.

22 There's been debate on whether the requirements for

1 non-written languages are clear enough.

2 Its been pointed out that the dexterity requirements
3 are not as strong as those dealing with visual disabilities.

4 There's been some questions about whether the low visual
5 requirements should be made stronger or not, more stringent.

6 Can the requirements for speech and the audio be less
7 production specific, more quality oriented. We think we have
8 a solution to that.

9 By the way, I should mention, I have a slide for each
10 of these issues in case we do want to discuss any one of them.

11 I can bring them up after we discuss the PAT issue.

12 Vote by phone. Vermont is experimenting with this so there's
13 been some question arising from the implications to those
14 with disabilities to vote by phone. So research for that
15 needs to be looked into.

16 How should best practices for election officials in
17 using voting systems be communicated. This is a disability
18 standards issue. They were initially integrated into the
19 VSG and they have been pulled out into an appendix. We need
20 to revisit the usability of that.

21 Should versus shall questions come in and just the
22 general overarching issue. How do we factor in feasibility

1 and cost. That's always been an overarching concern.

2 Now I would like to talk more about the personal
3 assistive technology issue. If you look at the voting system
4 standard 2002, 2.7.1 and the current version of the VVSG,
5 section 227.12 you see the wording has changed. Let me read
6 the wording and what we've done is an analysis of why there's
7 been confusion and there's really two concepts that we needed
8 to pull out and clarify in order to understand what's going
9 on here and understand the ramifications of these two
10 statements because each are goal statements and underneath
11 the requirements would look much different depending on which
12 one you used. In the 2002 VSS, "DRE voting systems shall
13 provide, as part of their configuration, the capability to
14 provide access to voters with a broad range of disabilities.
15 This capability shall not require the voter to bring their
16 own assistive technology to a polling place." In other words
17 this is a sufficiency clause. VVSG 22715 and accessible
18 voting stations shall provide accessibility to voters using
19 their own personal assistive devices." This is an
20 interoperability requirement. Sufficiency and
21 interoperability are related but they are independent notions.
22 Sufficiency is what access features, unrelated to personal

1 assistive technology that a voter brings with them, must a
2 voting system contain to meet the accessibility requirements
3 under the VVSG and HAVA? Interoperability really asks the
4 question of what these features must a voting system provide
5 to allow an accessible voting station to interact with
6 personal assistive technology that a voter brings to the
7 polling place. So, when you talk about allowing connection
8 of personal assistive technology to a voting station the
9 security is clearly an issue. I'm just going to go through
10 some of the finer points here. Any kind of connection ports,
11 especially standard IO ports create a security risk by opening
12 access to the voting system. We might look to section 508
13 of the Rehabilitation Act amendment which provides a useful
14 definition that guided the 508 standards development for
15 accessibility of electronic information technology developed
16 by the access board. They used the notion of self-contained
17 products. A self-contained product shall be used by people
18 with disabilities without requiring an end user to attach
19 assistive technology to the product. Personal headsets for
20 private listening are not assistive technology. One might
21 note also with personal headsets there is a standard foot
22 jack and it only takes output, it doesn't allow the assistive

1 technology to do any input into the system. In fact, the
2 VSS and the draft VSSG delivered on May 9th had underneath
3 it this self-contained note at the recommendation of the
4 access board. So, the current VVSG with respect to
5 interoperability only includes requirements for this audio
6 jack for personal assistive technology and, in fact, the
7 access board says they don't really consider audio jacks to
8 be personal assistive technology.

9 VVSG also has some requirements to avoid interference
10 with hearing aids. One might view that as assistive
11 technology. It doesn't interconnect directly. That is when
12 a voting station utilizes a telephone style handset or headset,
13 it needs to provide a T-coil coupling for assistive hearing
14 devices and no voting stations shall cause electromagnetic
15 interference with the assistive hearing devices. Now if you
16 want to broaden that to other kinds of personal assistive
17 technology writing testable standards for this kind of
18 interoperability is challenging. So if we want to go down
19 that route we have to realize there are some issues. You
20 need standard communication protocols, standard ports. You
21 need compatible software and there is technical and
22 feasibility issues for implementation and, of course,

1 security issues. So, I am going to open it up to discussion.

2 I can answer questions and I also refer you to the white
3 paper, The Discussion of EVSG Requirements for Personal
4 Assistive Technology. That is in your packet which has some
5 additional verbiage but basically I've summarized what its
6 about.

7 MALE SPEAKER 38: Sharon, let me ask you other than
8 headsets and audio jacks what kind of assistive technology
9 are you thinking about?

10 MS. LASKOWSKI: For example, switch technology, puff
11 and sip, being an example of that but there are a number of
12 other different kinds. That's pneumatic technology. There
13 are other kinds of switch technology. So, that's a good
14 example of the interoperability that you would talk about
15 because you are also not just getting output but you are also
16 doing input to make selections from the DRE and the DRE has
17 to be able to understand that particular switch technology
18 and there are a number of different products. In order for
19 us to research that we would, for example, do a workshop with
20 people that know, with vendors who build switch technology
21 so we would understand what is out there in the field and
22 -

1 MR. CRAFT: And I think, Sharon that takes you to where
2 this probably has to go. Because so much of this stuff is
3 not standardized, there are no industry standards, for
4 example, sip and puff device output. I think we are going
5 to have to bring in personal assistive devices really on a
6 case by case basis. I think we can all agree that the system
7 shouldn't be expected to allow you to vote with your
8 eyeglasses on a video ballot although it provides you with
9 an audio ballot and it shouldn't conflict with hearing aids
10 or it should work consistent with hearing aids. When we get
11 into the Braille keyboard devices and we get into sip and
12 puffs, I think we are going to have to bring those into the
13 fold of assistive devices that are allowed really on a case
14 by case basis.

15 MS. LASKOWSKI: There is also the question, yeah, if
16 we do it, it has to be case by case. I also know it brings
17 in a lot of issues for poll workers to manage because there
18 is additional kinds of equipment they have never seen before
19 maybe. So, there is troubleshooting that have to do with
20 the polls is very difficult for the poll workers.

21 MR. CRAFT: I still fall back to the theory that a person
22 in a chair who is running his chair on a sip and puff is going

1 to allow a poll worker to unplug his sip and puff device from
2 his chair and plug it into a voting system. I just don't
3 think that's ever going to happen.

4 MS. LASKOWSKI: Yeah, so there's that other aspect.
5 That makes it difficult to --. The privacy subcommittee did
6 come up with a recommendation based on the analysis that we
7 did. Whitney do you want to read that?

8 MS. QUESENBERRY: I'd be happy to. Its actually
9 something we talked about and voted on as a subcommittee
10 because this is a particularly thorny problem because there
11 is no question that we would love to be able to allow any
12 assistive technology that anybody has to make it as easy as
13 possible for people to vote. On the other hand, I don't think
14 that its feasible to allow an open USB port on the side of
15 a voting machine or any other trends.

16 The other problem that we came up with when we asked
17 the access board for assistance in identifying standard
18 interoperability connections for these the answer was that
19 there weren't any. There were not good industry standards
20 within the assistive technology world that we could draw on.
21 They have, I should note, offered to help us should we want
22 to pursue this. So the recommendation that we came up with

1 as a subcommittee is that "the human factors and privacy
2 subcommittee of the TGDC recognizes that innovation to
3 improve accessibility to larger segments of the disabled
4 population should be encouraged and addressed in future
5 versions of the VVSG. However, at the present time, the
6 committee recommends that the VVSG require general
7 sufficiency and a closed self-contained system with limited
8 interoperability exceptions done on a case by case basis.
9 The committee also recommends that the EAC and NIST together
10 review the final draft carefully to ensure that the VVSG
11 technical language accurately represents the intention of
12 the requirements." I think this is one where slight changes
13 in wording can change the meaning of the requirement
14 substantially and it needs to have careful technical review.

15 MS. LASKOWSKI: Also if Jim Elekes is on the phone
16 patiently listening we can put him on mike and if he wants
17 to make comments because he is also a member of the human
18 factors and privacy subcommittee. Jim.

19 MR. ELEKES: You have covered it all very thoroughly.

20 MS. LASKOWSKI: You've covered it all very well. I
21 didn't know if this was anything the full committee wanted
22 to vote on. I know that we all got these giant packets of

1 material and while I presume you would rush to read our
2 material first, that's probably not quite entirely true.
3 We did spend a fair amount of subcommittee and staff time
4 on it.

5 DR. JEFFREY: Do I take that that's a motion for the
6 TGDC to vote on then?

7 MS. LASKOWSKI: Well, I was actually asking for some
8 discussion on whether we ought to have such a motion or whether
9 this is just simply something that should --. We didn't know
10 quite how to proceed from here.

11 MR. CRAFT: I this committee needs to away and read what
12 you guys wrote.

13 MALE SPEAKER 39: Now, a couple of observations.
14 One is I think this may be an example of an important issue
15 that we don't have a solution. I like the way you put it,
16 Whitney, I think you identified the issue. I'm aware of some
17 what I find to be fascinating research by Neal Scott at
18 Stanford in this area but I don't think that industry, the
19 assistive technology industry is to the place where we can
20 implement anything.

21 MS. LASKOWSKI: Actually some of Neal Scott's work,
22 additional work, (undecipherable) subcommittee has been

1 working on some of these futuristic interoperability
2 standards and I do have a staff member working on that. They
3 are definitely not ready for prime time yet but we are aware
4 of those.

5 MALE SPEAKER 39: So maybe this is one of those, we
6 highlight the issue and follow the development of technology.

7 MS. LASKOWSKI: Well, I think we do have to clarify in
8 the VVSG though what do we really mean for the current version
9 of the VVSG.

10 MS. QUESENBERRY: We look for it to be more precise
11 which would the EAC like to adopt? We can make recommendations
12 but ultimately they adopt the requirements.

13 MALE SPEAKER 40: I thought your recommendation was
14 a good one. I support that. Also the concerns about security
15 are real. I consider this a research area. Maybe there are
16 ways to mitigate all of the security concerns with the sort
17 of narrowly defined interface standard with optical coupling
18 and everything else but that's research.

19 MS. QUESENBERRY: Perhaps I could offer this as an
20 action item for the committee is that if people would, in
21 fact, take some time to think about this issue and we've got
22 our discussion list and I know in response to J.R.'s motion

1 this will be near the top of one of my potential additions
2 to the NIST workload.

3 MS. LASKOWSKI: I did have that other list of issues
4 which are nowhere near the scope of this one if you want me
5 to discuss any of those further in the next two or three
6 minutes, I can do so.

7 DR. JEFFREY: I think what I would like to do is make
8 it a little bit more generic right now and, again, have this
9 part of the discussion if someone wants to raise a specific
10 question on any of those.

11 So, at this point NIST believes again the preceding
12 preliminary report of technical support on human factors and
13 privacy subcommittee preliminary reports for the next VVSG
14 iteration responds to the TGDC resolutions, the relevant ones.

15 So, unless there is supplemental directions or corrections
16 or questions, the technical support and related work product
17 will continue to be developed consistent with this
18 preliminary report. At this point I would like to open it
19 up if there is a specific questions, comments, further
20 directions or corrections to this subcommittee.

21 MR. RIVEST: I've got a question. This is Ron Rivest.
22 Maybe we have covered this before but I just want to ask,

1 are there other aspects of the standard that deal with a voter
2 who discovers that the equipment is not working properly?

3 Do we have anything if the toner on the printer is not work
4 on the VPAT and so on? There is a range of interactions that
5 happen on machines.

6 MS. QUESENBERRY: This isn't something that we've
7 covered but - it isn't something that human factors and
8 privacy has covered but I do think that one of the things
9 that I'm beginning to see as a trend is that as we progress
10 in our work overall as a committee and the three subcommittees
11 we are seeing more places where we need a little more
12 interconnection between the subcommittees because that seems
13 like an intersection between a core requirement - how do you
14 manage equipment failure and some polling place requirements
15 - how do you help the polling place workers manage equipment
16 failure? What is the most usable way for the voter to interact
17 with that? So, we've sort of got, you know, now that we have
18 a bit of a baseline, we are beginning to see things come
19 together like PAT having security implications and we need
20 to - maybe one solution would be to rather than kind of work
21 completely on separate tracks would be to take periods of
22 time where we look at some of those issues specifically and

1 do some cross committee work on them to be able to resolve
2 them. I think that would fit well with our modular chunks
3 approach as well.

4 MALE SPEAKER 41: I want to just comment
5 specifically on the audio quality issue that you raised.
6 I think there is some new work that is just reaching fruition
7 and we are probably at a place where we can harvest some of
8 that and put some good audio quality metrics on audio --.

9 MS. LASKOWSKI: Well, what we had in mind is and actually
10 you can consult with Chris Vanderheim on some of this.
11 Synthesized speech is much better than it was and we think
12 there are three qualities here and that speech needs to be
13 clear and intelligible and there's ways to measure that.
14 That you are able to control the rate of speech and that the
15 candidates' names are reproduced as the candidate wishes.
16 Right now in the VVSG the requirement prefers a human
17 recorded speech over synthesized speech and we probably think
18 its better to use a quality metrics.

19 MS. QUESENBERRY: Can I just share a little bit of
20 what happened at the standards committee since we are having
21 a little side bar here.

22 At the standards committee meeting we heard from a lot

1 of voting officials who said please don't tell us how to do
2 it. There are places where synthesized speech would never
3 be able to be coded well enough to handle the pronunciation
4 of names. There are places where they might work find for
5 them. What they asked for was for quality, you know, what's
6 the result that we want and could we please focus on that
7 rather than dictating technology because the minute we
8 dictate technology, it eliminates entire systems from their
9 consideration when they may have a way of solving the problem.

10 MR. CRAFT: Let me say there is some excellent
11 research being done about three corridors from here for
12 Homeland Defense and the particular audio needs and how to
13 measure for first responders. That's relatively new work.
14 There is also some research that is just going to be wrapped
15 up in the next couple of months out at Gallaudet University
16 on a particular needs for people with hearing loss. I think
17 some of this we can put better metrics on than we may have
18 been able to maybe even six months ago.

19 MS. QUESENBERRY: And even more operationally, I
20 think some of the work that's being done at the Trace Center
21 in Wisconsin which is a (undecipherable) rehabilitation,
22 research center. They have been dealing with audio for

1 disabilities for a long, long time and have some good metrics
2 as well.

3 DR. JEFFREY: Are there any additional comments,
4 questions? Do I hear a motion to accept this preliminary
5 report?

6 FEMALE SPEAKER 14: Second.

7 DR. JEFFREY: Okay. There is a motion to adopt and
8 its been seconded to a preliminary report. Is there any
9 additional discussion? Okay with that I will move for a
10 unanimous consent. Any objection to unanimous consent? So
11 moved. Thank you.

12 MS. LASKOWSKI: Thank you.

13 DR. JEFFREY: With that, I would like to take a quick
14 fifteen minute break. Please do be back here by three o'clock
15 so that we can try to stay on schedule. I appreciate it.
16 Thanks.

17 **(END OF AUDIOTAPE 4, SIDE B)**

18 * * * * *

19 **(START OF AUDIOTAPE 5, SIDE A)**

20 MR. HASTINGS: --- that being integrated into the next
21 version. The current activity that we have ongoing and we'll
22 take a little about some activities targeted for initial

1 completion in January of 06 as well as April of 06 and beyond.

2 So, we continue to look at the resolutions and make sure
3 that we follow the spirit of those resolutions as we develop
4 the security requirements. We also continue to look at the
5 VSS 2002 as well as the work that I-EEE has done as well as,
6 now that we have the VVSG, we use that as well and any other
7 sources. As we identify new requirements that are needed
8 we will develop those and we are going to use the results
9 from the threat analysis work that's going to be taking place
10 here shortly as input to those requirements. One of the
11 things that we are going to try and do is to consolidate a
12 general security requirements such as cryptography into a
13 general comprehensive security section and I'll talk about
14 that a little bit more in the next slide. We will look at
15 specific security requirements that are needed and other
16 sections such as the casting section and the counting and
17 reporting section.

18 Just to recap some of the stuff that we delivered in
19 April. We did the software distribution requirements that
20 were to initially address Resolution 1505 - Software
21 Distribution. What was imbedded in software distribution
22 were general cryptographic requirements and we want to move

1 those into a general cryptographic section within the
2 security section to that other parts of the standard can then
3 point to those if they need to use cryptography.

4 Validation set up requirements were developed to
5 initially address Resolution 1605 - Set Up Validation. What
6 we are going to do with that is we are going to take those
7 requirements and integrate those into a larger more
8 comprehensive system integrity management section.

9 We delivered some requirements on wireless to address
10 Resolution 3505. What we are going to do is we are going
11 to take those requirements and put those into a more
12 comprehensive overarching communications section that
13 includes wireless technology as well as wired technology.

14 We also developed independent dual verification
15 requirements to address Resolution 1205 - Voter Verifiability
16 (sic) 1 that included requirements for VVPAT and details on
17 that work is going to be discussed by John Wack in the next
18 presentation.

19 Some of our current activities - we are going to hold
20 a threat analysis workshop next Friday, October 7th in
21 Gaithersburg to address the possibility of different key
22 threats such as Trojan Horses and software to see how

1 plausible they are and hopefully get some priority on those
2 so that as we develop requirements we can say these
3 requirements are to mitigate the risk by threat acts. Like
4 the last bullet says, those results will be fed into
5 developmental security requirements.

6 We are also in the process of researching and developing
7 a white paper to address Resolution 1705 on testing and that's
8 open-ended testing as opposed to just a check list of things
9 that the testing laboratories would look at. Hopefully we
10 will have that completed, a draft of that completed in January
11 of 06 and those results will be incorporated into the testing
12 standard section.

13 We are also starting to cross pollinate with the other
14 subcommittees. Core requirements and testing subcommittees
15 have asked us to look into creating an access control model
16 as well as developing some requirements for security related
17 documentation as well as looking at the security requirement
18 for transmission of results. Just a note on this we have
19 also had some interaction with the human factors and
20 performance committee in the work related to VVPAT.

21 So, some of the sections that we are looking at to
22 initially delivering in January of 2006, we are trying to

1 start with some core security requirements that can then be
2 built upon so that we have a nice foundation. One of the
3 sections is cryptography, another section is software
4 distribution and installation, access control and system and
5 event logging.

6 Further out we are going to look at physical security
7 and communications, security requirements in the April 06
8 time frame and in July 06 time frame we are looking at system
9 integrity management section and hardware security sections.

10 In the October time frame we are looking at the IDV profile
11 to be completed and then in January of 07 the threat analysis,
12 a comprehensive threat analysis appendix to be added. As
13 always, these dates are subject to change. That's really
14 all I have to say on the subject.

15 DR. JEFFREY: Any questions, comments before John
16 talks.

17 MALE SPEAKER 42: I just have a couple of questions
18 being a new member on the committee. With our security
19 standards in 2002 or is this a whole new area that's being
20 developed?

21 MR. HASTINGS: There was security standards in 2002
22 in what we delivered in VVSG1. The specific areas of set

1 up validation, software distribution, those types of things.
2 This is going to just kind of extend and enhance some of
3 those as well as add some additional requirements.

4 MALE SPEAKER 42: Do these standards apply to all
5 types of equipment or is it just DRE or does it optical scan
6 as well as other new emergent technologies or is it just a
7 DRE source code issue that we are dealing with?

8 MR. HASTINGS: I think that that's one of those issues
9 that would be looked at in terms of the profiles that we were
10 discussing earlier. What requirements would apply to a given
11 system based on its profile. I guess, maybe, to answer your
12 question, I'm looking at this as requirements for not just
13 DRE systems. Maybe I'm talking way too much here.

14 MALE SPEAKER 42: Then the other question I had is
15 with regard to DRE equipment, it is my understanding that
16 some states have networked their DRE equipment so it is
17 subject to maybe potential hacking or viruses. Others are
18 all stand alone equipment, each is an independent unit. Do
19 these apply to the independent units or does it also apply
20 to a networking of equipment?

21 MR. HASTINGS: I think it would apply to both.

22 MALE SPEAKER 42: To both.

1 MR. HASTINGS: Yeah.

2 MALE SPEAKER 42: Thank you.

3 DR. JEFFREY: Any other questions?

4 MALE SPEAKER 43: A couple of quick questions. On
5 the threat analysis workshop you are going to do, are you
6 basically going in the direction of a protection profile and
7 the common criteria type evaluation or is this going to be
8 sort of different from that?

9 MR. HASTINGS: Okay, so when you ask about common
10 criteria are you talking about like the common, the protection
11 profile part where it talks about the threat for that? The
12 objective of the threat analysis workshop isn't to develop
13 protection profiles if that is your question.

14 MALE SPEAKER 43: That was. The other question I
15 had is, where a security risk could have an equipment solution
16 or alternatively have an administrative procedural solution
17 how are you going to balance that kind of assessment?

18 MR. HASTINGS: I think that that's, once again, we will
19 go back to the profiles on what are the capabilities in that
20 system. If the capability isn't built into that system, you
21 will have to have some type of best practices that guide you
22 on how to overcome that.

1 DR. JEFFREY: Any other comments or questions? Thank
2 you very much Nelson. John.

3 MR. WACK: Hi, folks, if I can just take a second
4 to find my presentation here. Oh, here it is. I apologize
5 for that.

6 Well, if I had my druthers I would go through these slides
7 just that quickly. Okay, I'm here to, I guess, kind of wrap
8 it up and talk about independent dual verification which I
9 learned at the break some people have some issues with. That's
10 sort of an understatement. Some people actually like it.

11 I'm just going to talk a little bit about, you know, kind
12 of a review of the concepts, how it looks in the EAC's version
13 of the VVSG, some research issues, talk a little bit about
14 the State of Maryland study and some issues and next steps.

15 Okay, IDV, independent Dual Verification. It is getting
16 back to David Flater's talk a profile, it is a profile of
17 types of voting systems and in essence a voting system. For
18 example, a DRE that allows one to vote and records and
19 electronic record. It produces a second record. It is
20 possible for a voter to look at that record and verify that
21 it is correct. There is a commitment on the part of the voting
22 system to a different type of media that the voting system

1 therefore cannot change. It is a record that would be very
2 difficult to change and you end up with two different types
3 of records, hopefully useful in recount comparisons.

4 VVPAT is really one example. It is really an
5 instantiation of IDV. Why is it important? The first line
6 there I say the second record is essential. I probably would
7 say the second record is a good idea for meaningful audits
8 and recounts. You can get meaningful audits other ways but
9 it's a good idea to have this second record. From a security
10 point of view the main issue here is the voting systems are
11 computers and computers have problems. They don't always
12 work. Voting system procedures vary widely across the United
13 States and just for basic integrity reasons, it's a good idea
14 to have this second record.

15 How is it handled in the VVSG? Well, we talked a little
16 bit, well, actually, no, we didn't, about the VVPAT
17 requirements that are in the VVSG so that's an example of
18 an IDV system. Then in Appendix B we've got a larger
19 discussion. We've got core requirements for IDV. There
20 aren't very many but then we go into different types of IDV
21 systems, crypto, optical scan, modified optical scan, witness
22 devices, split process and I'll talk a little bit about those

1 and please interrupt me if you have questions.

2 IDV and the marketplace. At the time we were developing
3 these requirements we were also noticing that the marketplace
4 was responding with some different types of equipment and
5 therefore we thought that it was a good idea to get
6 requirements out there sooner rather than later. So, actually
7 in the VVSG right now they are what we call as characteristics
8 not firm requirements. Its an informative section. Right
9 now these aren't totally accurate figures. I came up with
10 them about two weeks ago. It appears that we have two or
11 possibly more witness systems on the market right now. At
12 least four VVPAT systems and a number under development, two
13 different types of VVPAT systems. At least one ballot marking
14 op-scan system that is kind of a split process system and
15 one or possibly more crypto systems available. Now, they
16 don't fit every single characteristic or requirement but they
17 are in the ball park and they are going in the right direction.

18 Some issues with it. The first one, I think, is one
19 familiar to all of you who have looked at the VVPAT
20 requirements. That is, how usable is the second record?
21 Can you easily use it to compare against the first record?
22 That's a big issue and witness systems, for example, like

1 a witness system that takes essentially a screen snapshot
2 of the verification screen on a DRE. Is that going to be
3 in a format that is easily usable to an election official,
4 to an auditor to compare against the electronic records?
5 Things of that sort.

6 So, really, I got to the second bullet there, Usability
7 for both voters and election officials. A witness system,
8 for example, you could probably say that's a little bit more
9 usable to the voter because the voter really doesn't get
10 involved in that. That's basically a snapshot taken while
11 the voter is voting and doesn't have to do anything extra.

12 But, as in VVPAT, you know, of course, there is this other
13 paper record that you look at and so you do have some different
14 voter behavior there.

15 The usability for election officials though has to be
16 studied because its really not worth building these systems,
17 I think, if they are difficult to audit. It sort of defeats
18 the whole purpose. That's a huge part of it. There are some
19 issues that we already know about, accessibility, multiple
20 representations. Essentially paper is, you know, great in
21 many ways but its just not very accessible and the same issue
22 is going to come up with different types of media.

1 Interoperability of record formats to facilitate third
2 party audits. If we are going to produce multiple records
3 it eventually becomes important that the records be produced
4 in standard ways using standard mechanisms so that commercial,
5 off the shelf software can actually read it and do some
6 analysis and things of that sort. We think that that's another
7 issue that needs more study and more work.

8 The State of Maryland came along and they call IDV, IV,
9 independent verification. Its basically the same thing.
10 Maryland basically purchased a number of DREs and then
11 undertook a study to determine what types of add on equipment
12 could provide this extra record. This other independent
13 verification. So they are currently performing a study right
14 now taking a look at, I think, five or possibly six, other
15 technologies focusing on the usability of the record formats, .
16 Security issues that's another thing that they are really
17 wanting to take a look at and that is, is it really worth
18 it in a sense, is the voting system and is the election going
19 to be more secure if you actually, you know, go to this extra
20 step with having independent verification? That kind of ties
21 into this threat analysis workshop that we are going to be
22 having.

1 So, we put out the VVPAT requirements and we've been
2 hearing from the EAC that it would be a good idea to get out
3 requirements for other types of systems that produce this
4 independently verified record that aren't necessarily VVPAT.

5 I suspect that we will be looking at these other technologies
6 more closely in the near future and, again, you know, I have
7 listed a couple of other bullets that I really kind of gone
8 over, issues with accessibility and things of that sort.

9 The threat analysis workshop, I think, will be very
10 useful in the IDV area and I'm hoping, I'll just put in an
11 advertisement for it right now. If anybody can attend I think
12 it's a good thing. I did get the recent attendance figures
13 and they are about eighty registered. We originally
14 anticipated about ten or I anticipated about ten. So, it
15 could be pretty lively and pretty interesting. With that
16 are there any questions I can answer or comments or things
17 that I glossed over or yeas or nays?

18 DR. JEFFREY: Any comments or questions? With that
19 let me read the similar statement and get it out of the way.

20 NIST believes the preceding preliminary report of technical
21 support titled Security and Transparency Subcommittee
22 Preliminary reports for the next VVSG iterations responds

1 to the relevant TGDC resolution. Unless there are
2 supplemental directions or corrections the technical support
3 related work product will continue to be developed consistent
4 with this preliminary report. So, are there any questions,
5 further directions or corrections that anybody wants to add
6 to this? If not, do I hear a motion to adopt the preliminary
7 report?

8 MALE SPEAKER 44: So moved.

9 DR. JEFFREY: Is there a second?

10 MALE SPEAKER 45: Second.

11 DR. JEFFREY: Is there any discussion? Okay, I'm
12 feeling like a broken record. Without discussion on this
13 I'll go for a unanimous consent unless there is an objection.
14 Okay. So, Phil, you got it? So, its been adopted. Thank
15 you.

16 At this point I am going to ask Ms. Carol Paquette of
17 the EAC to present her report on internet voting.

18 MS. PAQUETTE: Thank you. My NIST colleagues have set
19 a very high standard of completing remarks within the allotted
20 time frame so I will try to continue in that vein.

21 Requirements for internet voting is a new requirement
22 that EAC wishes to put on the table. Last year's National

1 Defense Authorization Act, I would draw your attention to
2 the last sentence in each of these two paragraphs that the
3 Department of Defense should be doing, the gist is that the
4 Department of Defense should be doing another electronic
5 internet voting demonstration project but not until the EAC
6 notifies the Secretary of Defense that we have guidelines
7 and that we will assist in the project.

8 The second paragraph it says that perhaps the Defense
9 Department might like to come forward with a little funding
10 for this activity. We have had, the Commission has had an
11 inquiry from the Department of Defense regarding our proposed
12 time lines for developing said guidelines and we have
13 responded that we will be coordinating with NIST and get back
14 to them. So, here we are to talk about this subject.

15 I want to talk a little bit about what's different about
16 internet voting and make a few preliminary comments of things
17 that you will need to consider in setting standards or
18 guidelines for internet voting. I've had a little bit of
19 experience in this realm having been the project manager for
20 both of the Department of Defense internet projects and we
21 needed to come up with testable requirements in order to get
22 systems certified. So, here are some of the things that we

1 learned. This is extremely broad brush, very simplistic but
2 we have a very short period of time and I basically just want
3 to throw it out for consideration and discussion. The reason
4 I am using this title - Degrees of Separation - is that in
5 internet voting, I think one of the major differences is that
6 the voting process becomes much more distributed. When you
7 look at poll site voting everything is co-located. The voter,
8 the voting equipment, the ballot, the election official,
9 everybody is physically within the same space. So to go back
10 to some of David Flater's comments, you have some questions
11 or some interactions between what the process does, meaning
12 the people and the procedures and what the system does.

13 So if you just go down this listing here, we also like
14 to start with the voter registers to vote. We should never
15 lose sight of that fact. If the voter isn't registered all
16 the rest of this discussion is moot. The voter appears in
17 person to vote at their polling place. The poll worker looks
18 at the poll book and says, yes, we have you on the books.
19 You are eligible to vote and the poll worker ensures that
20 the voter gets the correct ballot. In many instances that's
21 a no brainer. There is only one ballot available at the
22 polling place so you are directed to the voting device

1 whatever that might be and you mark your ballot in whatever
2 manner, electronically, op-scan, whatever, and, I'm just
3 using this generic ballot place and the ballot box for
4 discussion purposes here. Okay, the voter has now voted he's
5 done with the ballot. The ballot is in the hands and under
6 the control of the election official.

7 Okay, lets look at another model where the process starts
8 to get a little distributed and that's absentee by mail voting.
9 Again, the voter registers to vote. They request an absentee
10 ballot. That could be in person. It could be by mail. It
11 depends on the procedures. You still have the election
12 official looking at the voter registration data base to say
13 this person is eligible to vote. They also figure out what
14 ballot gets sent to the voter and they send that ballot to
15 the voter. So, again, all the key steps are in the hands
16 of a person who may be aided in some means by an electronic
17 system. The voter makes their ballot selection. They have
18 an extra step in this case in that they have to sign the ballot
19 as a verification step and they return the ballot. When the
20 ballot is received there is an extra step for the election
21 official in that the signature has to be verified. Assuming
22 that that is done satisfactorily, another step in that the

1 voter identification has to be separated from the ballot and
2 the ballots placed in the ballot box. Again, very much a
3 human mediated process. All the important, or most of the
4 important steps are under the control of the election official.

5 However, the voter is no longer in the presence of the
6 election official and the ballot marking process is no longer
7 within the control and supervision of the election official.

8 So lets go on to internet voting. Internet voting,
9 depending on how it is developed, could be almost entirely
10 a software mediated process. Lets just talk through some
11 of the steps here. The voter registers to vote. They request
12 a ballot electronically. The identity and eligibility could
13 be checked by software rather than by an election official.
14 The software could be collecting the correct ballots and
15 that would require some interaction with the voter
16 registration data base, both for the eligibility check and
17 to determine the ballot style. The voter makes their ballot
18 selections. They still have to give some indication of what
19 their identity is. So in this case they are signing
20 electronically with a digital signature or PIN, some other
21 code as opposed to a wet signature and they return it. Similar
22 steps to the absentee voting, the authentication, the

1 identification has to be verified again. Its probably going
2 to be done by software and the voter identification is removed
3 and the ballot is put in the ballot box.

4 So, where does this lead us in terms of thinking about
5 standards for internet voting systems? We have a number of
6 new voting process elements. I'm not trying to say this is
7 a one hundred percent list but I think these are some
8 significant new factors to consider. We have the
9 identification and authentication of the voter by the voting
10 system. Its not done by the election official.
11 Identification means my name is Carol Paquette and
12 authentication is I have some means of proving to you that
13 I am the same Carol Paquette that you, election official,
14 have on your voter registration data base.

15 Another little interesting wrinkle which is the
16 authentication of the voting system by the voter. We heard
17 about spoofing and other things going on on the internet so
18 the voter also wants to make sure that they are connected
19 to the right system and they are not off on some bogus web
20 site where their ballots are going to be lost. Then you have
21 the task of matching the voter to the correct ballot style.
22 Again, not different from the other processes but if its

1 being done by software some different challenges. The task
2 of ensuring ballot integrity. We now have a ballot that is
3 moving around on the internet which is an inherently risky
4 situation.

5 We have something new in communications. Security
6 availability, reliability to communication links within the
7 voting process. What I mean by that is the ballot gets sent
8 to the voter electronically over the internet. The voter
9 sends it back again over the internet. So the vote doesn't
10 get into the ballot box. It is not into the election
11 official's control until its returned. In contrast to some
12 of the discussions that you've had about the use of
13 communications, its been pretty much at the end of the process
14 and sending around total information or account information.
15 This is actually in the process of getting the ballot, voting
16 the ballot and returning the ballot.

17 And then we have the question of security and reliability
18 of the voting device and the question of what is the voting
19 device? It could be the voter's P.C. It could be a kiosk
20 which is sort of a standard term for some type of a specialized
21 computer system that might be under the control of the
22 election official or it might be under the control of some

1 official. Again, depending on how it is established. There
2 could be, obviously, many permutations and combinations of
3 how internet voting systems are put together. I think all
4 these comments here, to my mind at least, are very closely
5 related to some of the comments that David Flater was making
6 when he was trying to distinguish between what are the things
7 that the voting system does meaning the people and the
8 processes versus what are the things that the, I'm sorry,
9 the things that the voting process does versus the things
10 that the voting system does meaning the hardware and software.

11 Again, we have to look at these elements in internet voting.

12 So we need to define what we mean by an internet voting system
13 and some of the salient questions I think are, again, very
14 similar to some of those that David Flater was raising.

15 What are the system boundaries? What are the interfaces
16 to election management? What are the functions that the system
17 performs versus what the process performs? As I was just
18 indicating what is the voting device and who controls it?

19 I have two examples in terms of very different ways in
20 which voting systems can be done and again, I have to thank
21 Mr. Flater for giving me a wonderful lead in line. He said
22 something to the effect of we can only dream of the day when

1 a voting system will prevent the voters from casting more
2 than one ballot. Well, let me say David, I can't exactly
3 see you out there in the audience, its actually been done
4 twice. Oh, there you are, I'm too short. Once in a system
5 that was actually used in a presidential election. So it
6 can be done.

7 Voting over the internet was the DOD project for 2000.
8 I'm not going to bore you with all this. The main point I
9 wanted to make here is that this system was highly distributed.
10 The servers were all in the hands of the election officials.
11 The central processor in there with the Federal Voting
12 Assistance Program was really just a communications router
13 and the ballots used in this case were stored as objects.
14 I know the computer scientists in the audience will know
15 what I mean by that. I haven't really come up with a good
16 term for that for the layperson but it means basically, you
17 have an electronic thing which is the ballot. You can sort
18 of point to it like a file in a data base. That's one way
19 of doing it. Another way of doing it was the project in 2004.
20 Very different architecture, highly centralized, a set of
21 centralized servers, accessed by election officials remotely.
22 The ballots were not objects. The ballots were built on

1 the fly from ballot definitions stored in the data base and
2 matched to the voter registration records to determine the
3 ballot style for the voter. Many other different kinds of
4 features. I don't want to dwell on this because I just wanted
5 to give you some examples.

6 That concludes my presentation and I will open to
7 questions and discussions. Thank you.

8 DR. JEFFREY: Thank you very much. Any questions?

9 MR. RIVEST: I have a comment and a question. I guess
10 the first comment is, so this has been proposed in the DOD
11 legislation. It wasn't clear what activity the AC or TGDC
12 maybe would be expected to undertake as part of this.

13 MS. PAQUETTE: Well, as I indicated, the DOD has
14 communicated to the commission and asked what is the time
15 line for developing these standards so that they can look
16 at their time line for conducting said demonstrations. I
17 would have to toss the question over to NIST in terms of what
18 is the relationship of the TGDC to this tasking. I don't
19 really have the answer to that question.

20 MR. RIVEST: So if there are standards to be
21 developed and I think that the presumption when one develops
22 a standard is that the goal is achievable. I personally don't

1 believe that we have the security technology to make secure
2 internet voting yet. That's at least a decade off and trying
3 to develop standards at this stage is really premature and
4 something that I would say is ill advised in spite of the
5 desired need to support our troops voting and stuff like that.

6 I think we need to look at a lot of different approaches.

7 Internet voting may not be the best just because of the
8 security issues. So, I think we need to have a discussion
9 about security of internet voting and what to do in spite
10 of the request to try to supply that. I think developing
11 the standard has the presumption that one can do so securely.

12 I don't think we're there yet.

13 MS. PAQUETTE: Okay.

14 MR. CRAFT: Number one I think it's a fundamental mistake
15 to categorize something as internet voting. It is a networked
16 or a distributed voting system and whether or not you are
17 using the internet is kind of irrelevant.

18 Second point is I think there is a lot that we can do
19 to help our overseas military and embassy personnel vote
20 easier and I think the solution that's readily available is
21 using a kiosk. The biggest problem right now with internet
22 voting is to secure the client in the hands of the voter and

1 a kiosk allows you to do that.

2 DR. JEFFREY: Any other questions or comments?

3 MALE SPEAKER 46: Carol, there was some
4 documentation provided to NIST early on in the process here
5 that came from the Oasis Election Voter Services Committee
6 that had, in fact, examples of on-line voting mechanism that
7 were being done in Europe. Has any information been made
8 available to you or your team?

9 MS. PAQUETTE: We are familiar with the Oasis work,
10 yes.

11 MALE SPEAKER 46: There were some references to
12 examples of where work is being done in terms of actual systems
13 being, on-line voting occurring and I didn't know whether
14 or not you had the advantage of analysis or feedback from
15 that.

16 MS. PAQUETTE: Well, we have not talked to the Oasis
17 folks probably in more than a year. That would certainly
18 merit some start up of that conversation again. I think part
19 of the reason we are presenting this here is that the
20 legislation specifically mentioned NIST by name in addition
21 to the EAC so I think we need to get some resolution of is
22 this a task that will be take on or not.

1 DR. JEFFREY: I believe that was authorization not
2 appropriation.

3 MS. PAQUETTE: That is correct.

4 DR. JEFFREY: Also was encouraged, not mandated. So,
5 with those two caveats.

6 MS. PAQUETTE: I understand but there has been follow
7 up inquiries.

8 DR. JEFFREY: Any other comments or questions? Carol
9 thank you very much. It was very good.

10 We now move into the next phase of this and given that
11 this group has not been bashful, this phase of the
12 introduction of resolutions and discussions by the TGDC.
13 So at this time I will open up the floor for anyone to add
14 any comments or propose any additional resolutions.

15 Is everyone happy, satisfied? Okay. Going once, twice.

16 There were a number of resolutions that were adopted
17 today and obviously those are now going to provide direction
18 and policy to the NIST staff and to the subcommittees. I
19 think there is a prioritization process that you go through
20 to make sure how it fits into all of the other resolutions.

21 I think also that some of the things that J.R. asked for
22 in terms of a matrix that will help clarify exactly how all

1 these pieces fit together.

2 So, any other questions or clarifications on this? Okay.

3 Well, what I would like to do is set the stage for the next
4 meeting. I believe that everybody has been handed a sheet
5 with some potential dates. I believe its appropriate that
6 probably some time in the spring, maybe March time frame is
7 the appropriate time for us to get together again and to check
8 on the progress of where things are going. What I would
9 suggest since I don't expect everyone to have their calendars
10 memorized that far in advance, is to think about what the
11 appropriate dates would be given that sheet and to e-mail
12 them back to Alan Eustis who will then coordinate all the
13 appropriate dates and also check with the EAC to make sure
14 that there aren't any conflicting meetings going on during
15 those dates that might cause some conflicts in schedules.

16 So, any questions on the schedule, please e-mail back to
17 Alan Eustis is probably the easiest unless you know today
18 in which case just hand in the sheet today.

19 Well, one, I would very much like to thank again the
20 EAC commissioners who came here and participated. I would
21 also like to thank the EAC staff, the executive director for
22 being here and again, providing vert valuable insights and

1 dialogues to us. Obviously, I would very much like to thank
2 the NIST staff who make me proud for many reasons. Again,
3 thank you for the excellent work and the excellent
4 presentations that you did today. I would very much like
5 to thank my fellow TGDC members for again the amount of time
6 and effort I know is going into trying to make this system
7 as good as possible.

8 Along those lines, if I could ask a favor of my TGDC
9 members that if there is comment to think about it in terms
10 of lessons learned and best practices for ourselves if there
11 are any suggestions that you might have for me in terms of
12 format changes to how we present the data or anything else,
13 please contact me, either by phone or by e-mail and again,
14 this needs to be as useful a process as it can be in terms
15 of information exchange and a form upon which you can have
16 a discussion and debate. So, if you have any suggestions
17 and best practices I'm all ears on that.

18 With that is there any other comments that anyone would
19 like to make?

20 MALE SPEAKER 48: Welcome the committee and you did
21 an excellent job.

22 DR. JEFFREY: Thank you very much. With that I adjourn

1 this meeting of the Technical Guidelines Development
2 Committee and I look forward to the sixth plenary session.
3 Thank you very much.

4 MALE SPEAKER 49: Do you need a motion to adjourn
5 or just automatically adjourn?

6 DR. JEFFREY: Do I need a motion to adjourn? No, okay.
7 Unanimous consent.

8 **(END OF AUDIOTAPE 5, SIDE B)**

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CERTIFICATE OF AGENCY

I, Carol J. Schwartz, President of Carol J. Thomas Stenotype Reporting Services, Inc., do hereby certify we were authorized to transcribe the submitted cassette tapes, and that thereafter these proceedings were transcribed under our supervision, and I further certify that the forgoing transcription contains a full, true and correct transcription of the cassettes furnished, to the best of our ability.

CAROL J. SCHWARTZ

PRESIDENT